

Operating instructions
MyEcc Pupil Prop

Specialist retailers

CE

HomeBrace
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01 Version information Instructions

These operating instructions were created on 01.03.2024.

Revision history:

V1.0 → 01.03.2024 → Creation of these operating instructions
V1.1 → 05.03.2024 → Technical data updated
V1.2 → 19.03.2024 → Disclaimer inserted
V1.3 → 04.04.2024 → Open points have been resolved / FAQ added
V1.4 → 17.09.2025 → Hardware modifications through MyEcc V5 / Notes on software updates
V1.5 → 01.01.2026 → Extension of the user manual to include a delivery checklist

02 Foreword

Welcome to the operating instructions for the MyEcc Pupil Prop.

These operating instructions are intended for specialist retailers/technicians who install and maintain this system. These and other instructions from HomeBraceGermany GmbH (hereinafter referred to as “HomeBraceGermany”) have been written without a “GENDER”, which makes them easy to read (they can also be read aloud by the computer). This form of expression in no way constitutes discrimination against other gender groups.

Please read these instructions carefully. It provides important information on installing the hardware and software. It also contains safety/warning instructions that must be followed at all times. If you have any questions, please contact HomeBraceGermany immediately. The contact details are at the end of the instructions. Information on reuse and storage can also be found at the end of these instructions.

A space for notes and notes on settings has been created on the last pages of these instructions. This can be a great help to you and subsequent technicians.

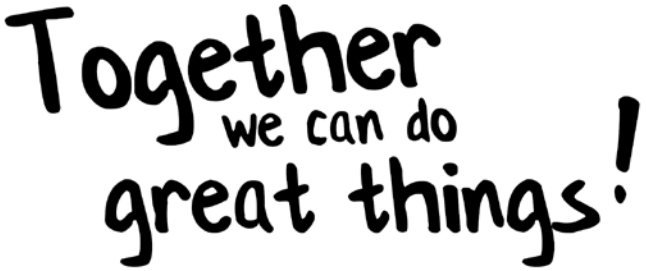
These operating instructions must always be kept close to the system. If the system is stored or used for the first time, these instructions must always be supplied with it. You can request a replacement from HomeBraceGermany or download it from the homepage.

Install the system with care and do not allow it to become a routine operation. Every user has different needs, which can be adapted to the MyEcc Pupil Prop using these instructions.



It is not the user who adapts to the system, the system will adapt to the user.

Additionally, this manual includes a delivery checklist for traceable documentation of installation and commissioning. There is also a separate chapter with a small overview of possible errors and how to rectify them.



03 Intended use

The MyEcc Pupil Prop special wheelchair control is a manufacturer-independent power wheelchair control that enables people with a disability or complete inability to walk to control their power wheelchair safely and independently indoors and outdoors.

Existing eye control systems (MyEcc Frame) can be used for eye control. This also makes it possible to control the existing seat functions of the wheelchair. If attachments such as robot arms are available, these can also be controlled.

Any other use is **NOT** in accordance with the intended use and leads to exclusion of liability and loss of warranty. A change in the intended use or unauthorised conversions/modifications also lead to an exclusion of liability and loss of warranty.

04 Application area/environment

The special MyEcc Pupil Prop control unit, in combination with a power wheelchair, can be used indoors and outdoors. When used in public areas, the applicable national laws and regulations of the respective country must be observed.

Weather conditions (rain, snow, sunlight, darkness) do not affect the operation of the MyEcc Pupil Prop. Restrictions on the user environment may be specified by the wheelchair manufacturer. The user manual for the power wheelchair must be read and observed.



Operation is intended for indoor and outdoor use only. Failure to do so will invalidate all liability and warranty claims.

05 Environmental hazard analysis

Before use, a hazard analysis of the surroundings must be carried out and the user must be made aware of any recognised hazards (e.g. unsecured stairways, ramps, slopes without railings, etc.).

HomeBraceGermany recommends an EMERGENCY STOP switch (mechanical or wireless) provided by the wheelchair manufacturer. This helps to minimise any hazardous situations that may occur but cannot be seen.

06 Incidents/malfunctions

If the system malfunctions, please contact HomeBraceGermany directly. The address can be found at the end of these instructions. Should an incident occur, please report it directly to HomeBraceGermany.

Please provide as much detail as possible so that we can gain a full understanding of the incident in question.

A notification to the competent authority (BfArM) www.bfarm.de can and may also be made by any person.

We have a very high standard of quality and we hope that there will be no incidents. If, despite all this, there are any defects or suggestions regarding our product, please let us know directly. This helps HomeBraceGermany to maintain the high standard of its products and can also contribute to product improvements.

07 Reuse

The products in the HomeBrace range are generally suitable for reuse. All hardware must be returned to HomeBraceGermany for the following measures before being used again:

- Cleaning and disinfection of equipment received (to prevent infection)
- Photo documentation of the components
- Functional test of the components (hardware)
- Checking the software
- De-personalisation (always carried out in accordance with the GDPR)

08 Warnings/Precautions + Delivery Checklist

Explanation of the symbols:



Information



Warning

Please read the following warnings/precautions carefully and draw the user's attention to them. Failure to follow these instructions could have consequences. This could result in danger to life and limb. If these instructions are disregarded or even deliberately circumvented, the manufacturer's warranty is void and product liability no longer applies.

For optimum use of the system, HomeBraceGermany recommends an appropriate driving stabilisation programme from the wheelchair manufacturer (ESP, gyro). Such a system ensures automatic correction of the direction of travel (e.g. on slopes or gradients). It reduces the possibility of "drifting".



Danger to persons:

Non-compliance will result in death or serious injury.



- **First drive**

The first time you drive your wheelchair must be in the presence of a certified Assistive Technology Professional or therapist who is qualified to ensure that the wheelchair is properly configured for you, and you are in a safe environment.



- **Qualified service technician**

Only carry out maintenance and minor adjustments that are specified in the user manual. All other maintenance, service, configuration, and repairs must be carried out by a qualified service technician authorized by HomeBraceGermany.



- **Do not drive near edges or on elevated surfaces**

MyEcc Pupil Prop is not designed to be used near edges or on elevated surfaces, such as ramps, stairs, and multi-level floors.

- **Sunlight interferes with eye control**

To ensure the precise evaluation of the user's gaze direction within the software, the eye control camera must be able to clearly detect the user's pupils. Direct sunlight can interfere with the camera and lead to reduced accuracy or a loss of control. Strong sunlight on the user's eyes or the camera must therefore be avoided, especially when driving outdoors.

- **Changing seating position can affect eye control**

For accurate gaze evaluation, the camera must be correctly aligned with the user's pupils. Although the camera sensor moves together with the user's head position, a change in seating or head posture (e.g., strong tilting or the eyeglasses shifting out of place) may restrict pupil tracking and significantly reduce control accuracy or lead to a loss of control.

- **Do not drive while reclined, tilted, or elevated**

Use of the power wheelchair with MyEcc Pupil Prop or the eye control system is not permitted when the seat is tilted, reclined, or elevated. Even with the camera sensor firmly attached to the glasses, extreme changes in seating or head posture may impair pupil tracking and lead to a loss of control.

- **Drive on public roads**

Your wheelchair is not an automobile. Obey all local pedestrian rules and always drive your wheelchair defensively. MyEcc Pupil Prop is a wheelchair control interface only, it does not change how your wheelchair behaves.

- **Use only approved eye gaze devices**

Using MyEcc Pupil Prop on untested devices is known to be unsafe and can cause injury.

- **Do not modify the wheelchair or MyEcc Pupil Prop components**

Do not modify your wheelchair, MyEcc Pupil Prop, or any of its components. MyEcc Pupil Prop and your wheelchair have been configured specifically for your needs as prescribed by your healthcare provider. Special skills, training, and knowledge are needed to set up, modify, and repair MyEcc Pupil Prop and the wheelchair.

- **Do not use a damaged wheelchair**

If the wheelchair or its accessories have suffered transportation damage during driving, or damage from other causes, you must inform your assistive technology professional as soon as possible and immediately stop using your wheelchair. There is a risk that the wheelchair or its accessories can no longer be used safely. Contact your service provider for further information.

- **Discontinue use after extraordinary events**

Do not use your device if it has been dropped, crushed, exposed to fire, submerged in water, or involved in a vehicular accident, or other extraordinary events. Events like these can lead to significant damage that is impossible to detect upon inspection. Contact your service provider. Damage caused by these types of incidents exceeds the limits covered by the manufacturer's warranty.



- **Supervise children and those with cognitive disabilities**

Do not let children or people with cognitive disabilities drive the wheelchair without supervision. A buddy button must be available for the caregiver.



- **Discontinue use if the wheelchair does not behave as it should**

If the wheelchair is not behaving as it should, or if you suspect that something is wrong, stop MyEcc Pupil Prop immediately to stop the wheelchair. Turn off the power and contact your service provider or HomeBraceGermany for further information.



- **Turn off the power before you transfer or before you lift the armrest**

Turn off the power before you transfer in or out of the wheelchair or lift the armrest. If you do not, it can lead to bodily injury.



- **Eye gaze devices must be securely mounted**

Eye gaze devices must be securely mounted in the appropriate position for eye gaze control. The mounting system must be able to maintain the positioning of the eye gazed device while the power wheelchair is being driven.



- **Installing software or changing settings can lead to lack of control**

Installing 3rd party software, or changing the default settings such as power management, or notifications on approved devices can lead to MyEcc Pupil Prop being less responsive to eye gaze commands leading to lack of powerchair control and potential injury.



- **Stacked equipment**

Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.



- **Use approved cables**

Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.



- **Replace damaged components**

If either the plug or cable becomes damaged, both must be replaced by qualified personnel.



- **Do not drive near fast-moving objects**

Do not drive the wheelchair near fast-moving objects such as trains, planes, cars, and buses.

- **Replace damaged components**

If either the plug or cable becomes damaged, both must be replaced by qualified personnel.

- **Do not drive near fast-moving objects**

Do not drive the wheelchair near fast-moving objects such as trains, planes, cars, and buses.

- **Portable RF communications equipment**

Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the ADT, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

- **MyEcc Pupil Prop is not to be used for life sustaining or life saving**

Use of this equipment is not meant to provide life sustaining or life saving functionality.

- **Cleaning and Maintenance**

If cleaning is required, spot clean the affected areas with a slightly damp cloth. Do not use aggressive cleaning agents, solvents, or abrasive materials, as these may damage the surface or impair functionality. Ensure that no moisture enters any electronic components.

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Delivery Checklist

MyEcc Prop (Windows/iOS) / MyEcc Pupil Prop

Customer Information

Commission: _____
Delivery no.: _____
Medical supply store: _____

Product

MyEcc V5
Serial number: _____

☐ MyEcc Prop (Windows)

Software

Software-Version:	

Button Timing	
Hold focus until activation:	(300)
Focus-Timeout:	(600)

Note: Values in brackets indicate default values.
If modified, please enter the updated values.

☐ Function checked after change + activated

☐ MyEcc Prop (iOS)

Hardware (MyEcc Bluetooth Connection)

Serial number:	

Software

Software-Version:	

Button Timing	
Hold focus until activation:	(300)
Focus-Timeout:	(600)

Note: Values in brackets indicate default values.
If modified, please enter the updated values.

☐ Function checked after change + activated

☐ MyEcc Pupil Prop

Hardware (MyEcc Frame)

Sensor version / angle:	☐ V1	☐ V2
Sensor option:	☐ Left	☐ Right
Frame size:	☐ M	☐ L
Serial number:		

Software

Software-Version:	

Local USB Source	
Resolution:	(192,192)
Frame rate:	(60)
Exposure Mode:	(auto mode)

Pupil Detector	
Intensity Range:	(23)
Pupil Min:	(10)
Pupil Max:	(100)
Focus-Timeout:	(600)

Note: Values in brackets indicate default values.
If modified, please enter the updated values.

☐ Function checked after change + activated

Installation technician / Specialist dealer

Place, Date

User / Legal representative

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Delivery Checklist

MyEcc Prop (Windows/iOS) / MyEcc Pupil Prop

	MyEcc Prop (Windows/iOS)			MyEcc Pupil Prop		
	Yes	No	N/A	Yes	No	N/A
User can control the software after approval						
User can activate indoor driving mode						
User can deactivate indoor driving mode						
User can activate driving mode in sunlight						
User can deactivate driving mode in sunlight						
User can drive straight ahead						
User can drive backwards						
User can drive curves (left/right)						
User can stop the software by closing their eyes						
User can stop the software by looking outside the display *						
User can stop the wheelchair using the focus/neutral zone						
User has been instructed in the functionality and operation of all available modes						
User has been instructed in the use of the mode button and the procedure for changing modes						
User has been instructed on safe tilt and recline adjustments to ensure proper eye control.						
The environmental conditions are safe for driving the power wheelchair						
The system can be removed or detached for user transfer						

* Applies only to MyEcc Prop (Windows/iOS)

Signature – Confirmation of installation and instruction

By signing, all parties confirm the proper installation, instruction, and complete handover of the device from HomeBraceGermany GmbH.

Installation technician / Specialist dealer

Place, Date

User / Legal representative

All tests and instructions required by HomeBraceGermany GmbH were carried out in accordance with the relevant specifications.

Note: This installation and instruction protocol is part of the technical documentation and must be kept by the specialist dealer. A copy will be given to the user.

09 Warranty

The systems supplied by HomeBraceGermany are supplied with a two-year warranty (in accordance with the German Civil Code). Damage reports must be submitted within the statutory deadlines.

10 Product liability

Pursuant to the liability of manufacturers for their products as defined in the German Product Liability Act, the instructions provided in this brochure must be observed (product information and intended use, improper use, product performance, product maintenance, information and instruction obligations). Non-observance releases the manufacturer from any liability.

Failure to follow the instructions and requirements in this manual will void any liability or warranty provided by HomeBraceGermany.

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11 Package contents/scope of delivery



1. MyEcc V5 Box (Hardware)
2. USB stick (contains the software for the Display)
3. USB-A to USB-C cable (connection MyEcc Frame - MyEcc Display or USB hub)
4. Connection cable with red plugs
5. Storage bag for attachment to the wheelchair
6. MyEcc Frame
7. MyEcc Display

12 Hardware

MyEcc V5 Box
Front view:



MyEcc V5 Box
Connection strip (left):



1: "PC" → Connection to tablet PC (USB C).
2: "Chair" → Wheelchair control connection (9-pin DSUB) incl. switch 1 function.
3: "5V USB" → Control LED (red, 5V power supply via USB C).

MyEcc V5 Box

Connection strip (right):



A: “12V CHAIR” → LED voltage wheelchair (blue, 12 V from wheelchair).
B: “PROP” → PROP mode active (blue, 12 V is switched through in proportional operation, voltages / reference / speed / direction are ready).

CHECK 1 - 4 → LED driving relay (only in switch mode):
1: Forwards
2: Right
3: Backwards
4: Left

CHECK 5 - 8 → LED additional switching functions (1 - 4):
5: Switch 1
6: Switch 2
7: Switch 3
8: Switch 4

CHANNELS 6-8 → (output, potential-free, cable with 3.5 mm jack plug):
B2: Switch function 2
B3: Switch function 3
B4: Switch function 4

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MyEcc Frame

Connection strip:



Connection for USB cable to the MyEcc Frame.

Connection for MyEcc frame to the existing MyEcc Display.



Important:
Version 5.0 MyEcc boxes must be connected to the cable (item 10438) with red plugs.



Only the original cable from HomeBraceGermany may be used. Using other cables will lead to a malfunction.

13 Note

A USB 3.0 port must be available to connect the MyEcc Pupil Prop and the MyEcc Frame. If other devices or peripherals are used, this must be observed. When using a USB hub, a USB 3.0 hub is required, we recommend Hub's item 10413.

If the MyEcc Pupil Prop software is installed on devices that were not supplied by HomeBraceGermany, they must have a USB-C connection. If the hardware is operated on a connection other than USB-C, no function can be guaranteed.

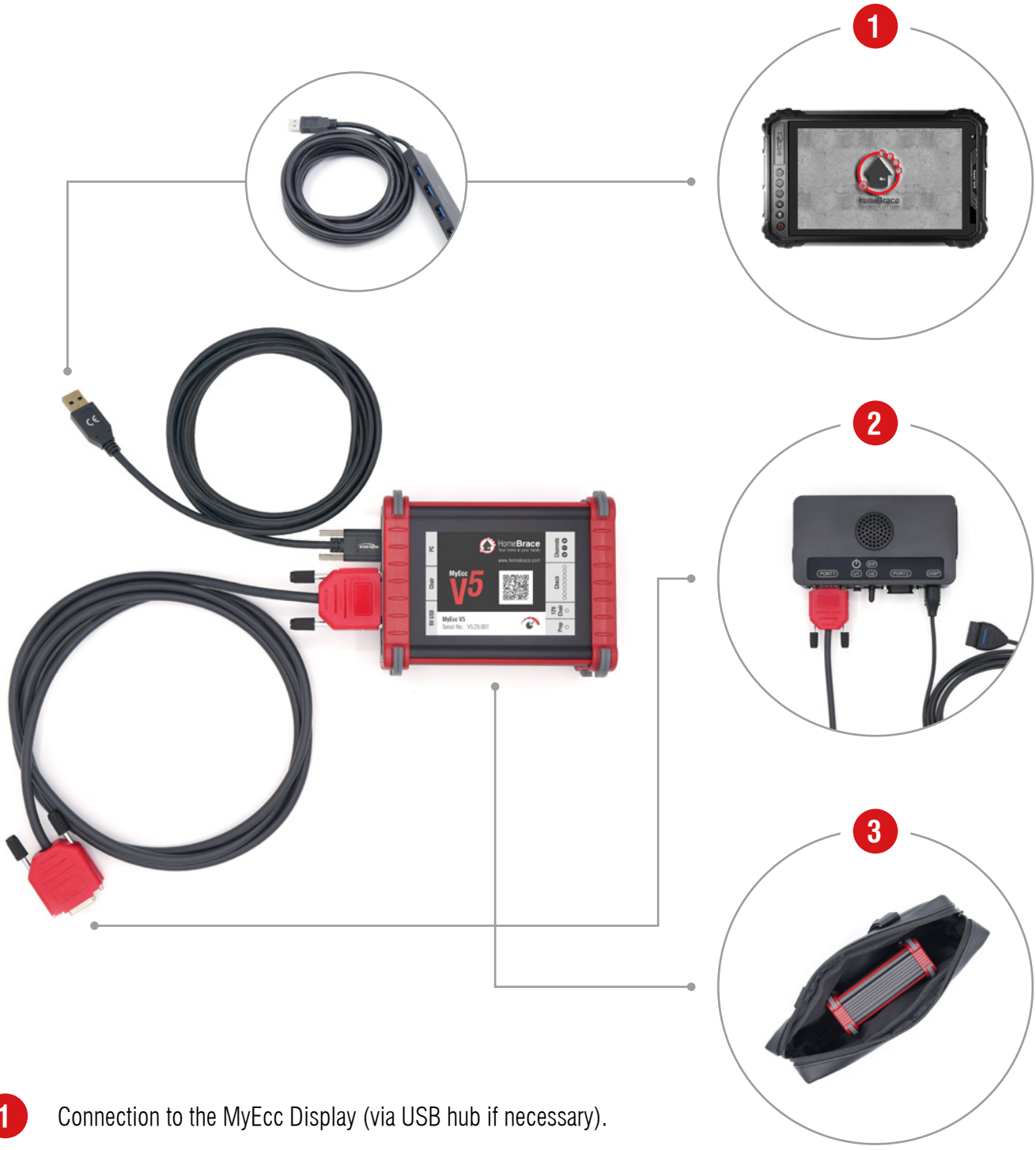
When wiring and installing, pay attention to the wheelchair's travel paths to avoid damage caused by incorrectly laid cables.

The MyEcc Pupil Prop must be attached to the wheelchair with the supplied bag (waterproof); we recommend installing on the back of the wheelchair or the armrest. The cables for the eye control are detachable and should remain detachable during assembly so that the carer can easily remove the eye control from the wheelchair during transfers.

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14 Installation on the wheelchair



1. Connection to the MyEcc Display (via USB hub if necessary).
2. Connection to the wheelchair input (here OMNI2).
3. Store the MyEcc Pupil Prop Box and all cables in the storage bag and attach it to the wheelchair.

15 Requirements for the power wheelchair

The power wheelchair is equipped with one of the following power electronics. A switch control may also be required (not included in the scope of delivery):

- **R-Net (Curtiss-Wright Corporation) plus OMNI1 or OMNI2**

→ (possible power wheelchairs from the following manufacturers: Sunrise, Permobil, Meyra, SKS, Life&Mobility)

- **LiNX / DX2 (manufacturer Dynamic Control)**

→ (possible power wheelchairs from the manufacturer: INVACARE)

- **Q-Logic 3**

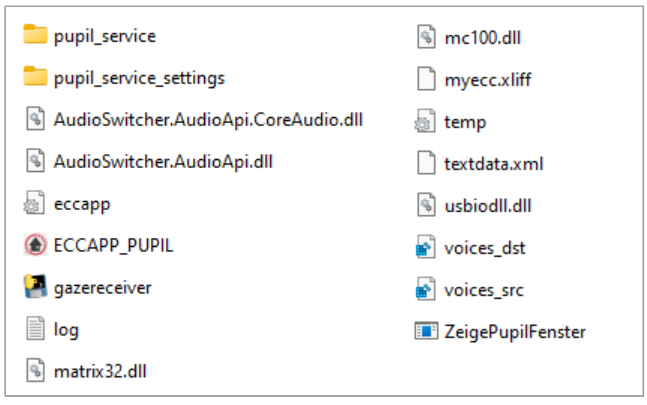
→ (possible wheelchairs from the manufacturer: Quantum Pride)

16 Programme installation

Copy the folder MyEcc Pupil Prop with program and additional files to PC/tablet hard drive (source: USB stick HomeBrace). The location on the hard drive is freely selectable (we recommend C:/Program Files). Create a shortcut to "ECCAPP_PUPIL.exe" on the desktop.

Attention:
For speed reasons, do not run the programme directly from the USB stick.

The following files/folders must be present in the execution folder:



A temporary "log.txt" file is created at programme runtime. This contains any error messages and internal information on the programme sequence.

17 Programme start

Operation:
The app can only be run when the control box is connected.

- If not, the following message appears on the OMNI:

→ OMNI input module error 09D0.

Execute the “ECCAPP_PUPIL.exe” programme.

Correct action list at start:

```
Start MyECC PUPIL Version 4.1.9.0 .....
Languages loaded:  DEU ENU ITA FRA
Read INI-File...
Pupil camera ID0 configured
Init Timers...
Read Textdata.xml...
Init Speech...
Selected Voice: Microsoft Katja (de-DE)
Init Speech done.
Check MyECC Box...
Check USB Output Device...
Stopping old gazereceiver processes...
Stopping old PUPIL service processes...
Starting gazereceiver...
Wait for PUPIL processes to start...
```

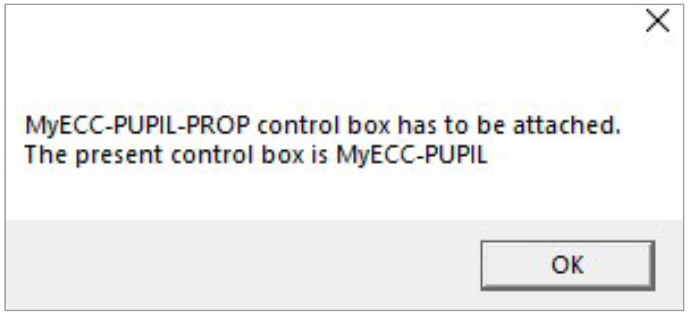
- After a successful start, the programme first switches to calibration mode:

→ Recalibration required, no existing calibration found.

- After a successful start, the programme switches directly to driving mode:

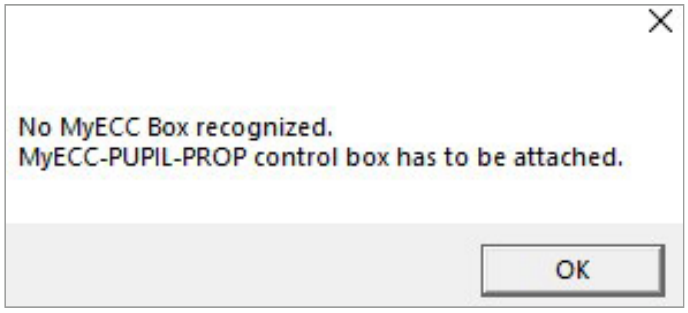
→ Saved calibration already exists.

Possible error messages at programme start:



- Current software set to proportional control, but hardware set to switch control:

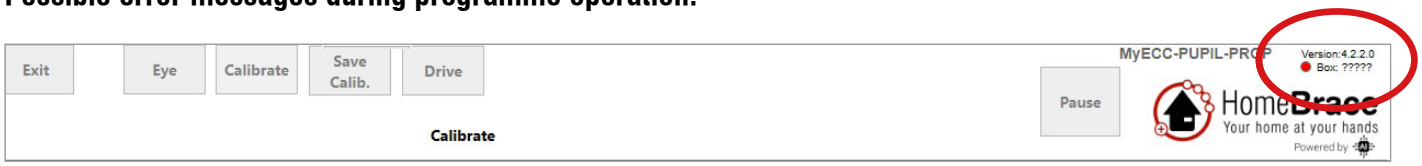
→ Software closes and restarts.



- If no control box has been recognised (as in these 2 cases), proceed as follows:

1. Check all cable connections.
2. Close note.
3. Restart the software.

Possible error messages during programme operation:



- The red indicator light signals that there is no connection to the control box:

→ Check all cable connections.

A green light on the indicator confirms the successful connection to the control box.

Header:



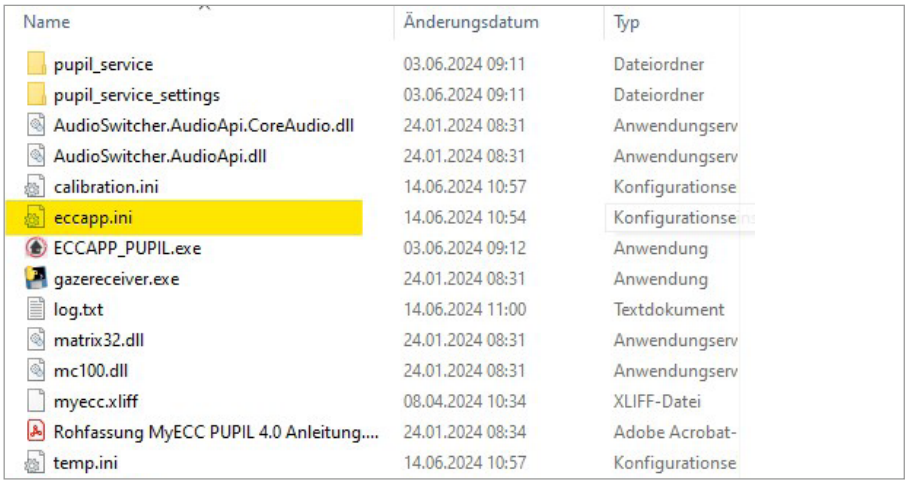
- Single click (or 1x click):
→ Programme closes.

- Double-click (or 2x click):
→ The settings menu opens.

Normally, the software settings can be opened simply by double-clicking. However, these should be made as inaccessible as possible to the user, as access to the settings is only permitted to HomeBraceGermany or authorised retailers.

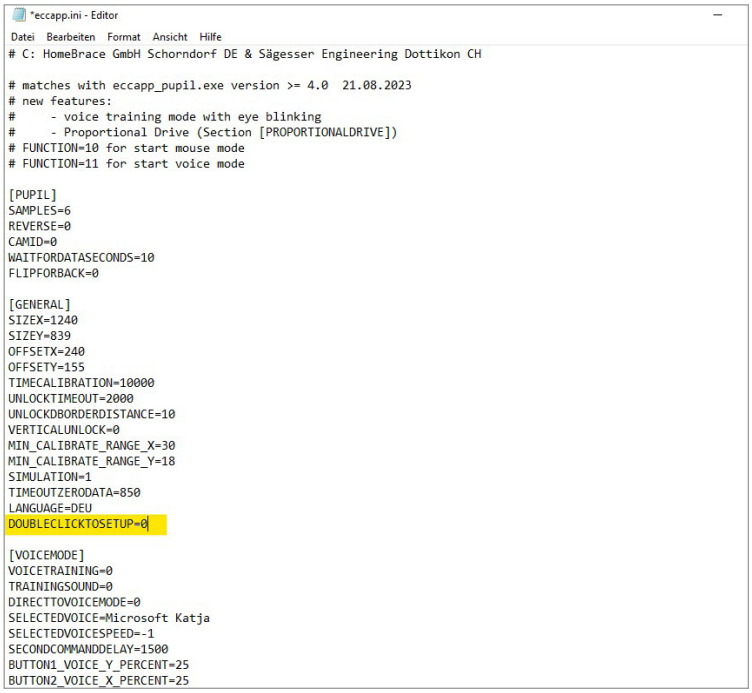
To deny or restrict this access, proceed as follows:

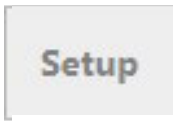
1. Open the file "eccapp" in the folder MyEcc Pupil Prop.



2. Set the value of "DOUBLECLICKTO-SETUP" to 0
(normal value=1).

3. Save the "eccapp" file and
Restart the software.





Alternative: Holding down the Ctrl key, changes the “Settings” button to “Open settings menu”.

To be able to make changes, an external keyboard must be connected.

18 Programme version

SOFTWARE

MyEcc Pupil:
Programme name with switch control

MyEcc Pupil Prop:
Programme name with proportional control



Operating mode:
Display of the current mode

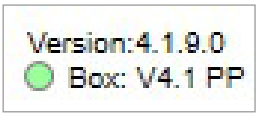
Version XYZ:
Programme and box version

Indicator:
Hardware information

HARDWARE

Version of the connected MyEcc box and version of the copy protection key:

- **“S”** = MyEcc Standard
- **“P”** = MyEcc Pupil
- **“SP”** = MyEcc Standard Proportional
- **“PP”** = MyEcc Pupil Proportional



19 Settings

19-01 Driving mode

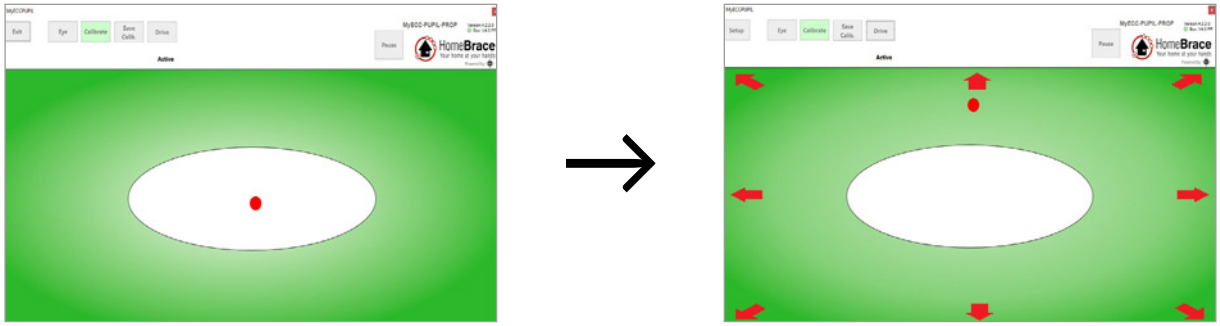
- Unlocking the driving mode:

→ Move eye within the set time left - right - left move (resp. up - down - up).

Unlocking is accompanied by two single ascending tones and confirmed by two higher ascending tones.
The active fields are coloured green.

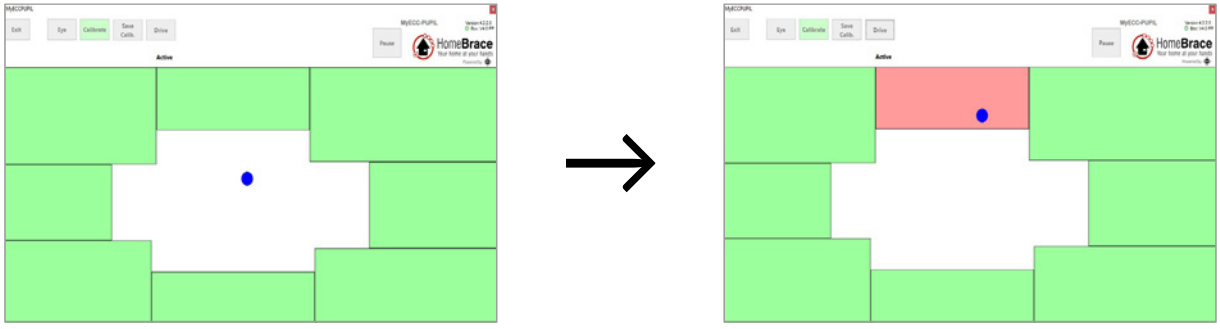
As of software version 4.25, the deactivation of the MyEcc Pupil Prop software is confirmed by a clearly audible shutdown tone.

Driving in proportional mode:



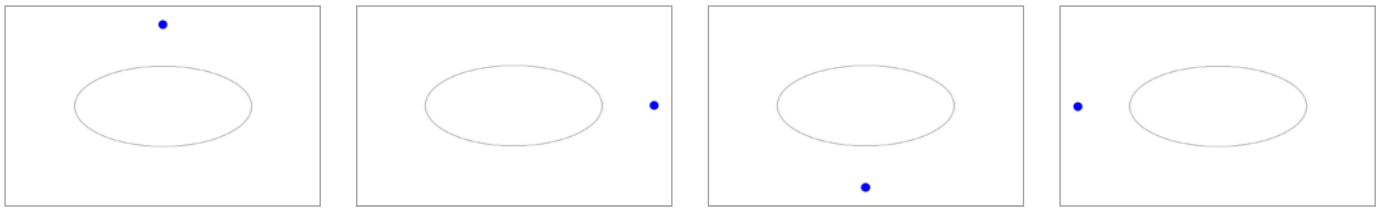
As soon as the eye focus moves outside the neutral ellipse, the wheelchair switches to driving mode.
The driving speed increases the further the eye focus moves outwards from the neutral centre.
Within the ellipse is neutral position (standstill).

Driving in switch mode:



The travelling relays are switched as soon as the eye focus moves to the corresponding fields.
The centre field is in neutral position (standstill).

19-02 Triggering switching functions



The switching functions can be triggered in driving mode when inactive.

Depending on the wheelchair configuration, various functions may be assigned. By default, the upper area is set to "Mode". This means that the user can operate all the functions of the wheelchair using the dedicated control display.

For example: The driving mode is deactivated, trigger the shift function accordingly. Driving mode is activated with looking left - right - left. The respective function of the wheelchair can be selected by looking up or down from the centre using the special control display, and this function is selected by looking to the left or right.

To return to Driving mode, the control function is deactivated by closing the eyes for 1 second. Triggering the top switch function again switches the wheelchair for example, from seat adjustment to driving mode.

The switches are triggered at the edge of the active area:
Switch 1: top, switch 2: right, switch 3: bottom, switch 4: left

Depending on the setting, it is triggered with:
- Close eye ... wait (setting 1)
- Close eye ... open (setting 2)
- Close eye ... open ... close (setting 3)

Triggering is confirmed by sounds:
- A low tone and a number of higher tones corresponding to the switch number.

Activation of the seat adjustment is assigned to one of the four switches ("Seat settings" dialogue). Switching to seat adjustment is confirmed by the voice output "Seat adjustment".

19-03 Settings menu



Exit Edit

Closes programme.

Calibrate

Starts glasses calibration. The eye focus must be moved several times to the left and right as well as up and down over the physically largest possible area. As soon as the control tone becomes higher and the dot changes to green, a valid area has been detected. However, the calibration should be continued for a few more seconds. As soon as only valid position values are recorded during the specified time, the calibration is automatically completed and the programme switches to driving mode (inactive).

Note: When calibrating, it is helpful to keep the eye window open in parallel to check that the sensor is capturing the pupil correctly. Make sure that the small and large red circles always maintain contact with the pupil when looking left, right, up and down.

Save Calib.

The last calibration performed is saved (indicated by green colouring of the button). When the programme is started, the saved calibration is applied and the software switches directly to driving mode (inactive). This procedure is only recommended if the position of the glasses has not changed.

Drive

Manual activation of driving mode instead of arming left - right - left. Clicking again switches back to inactive driving mode.

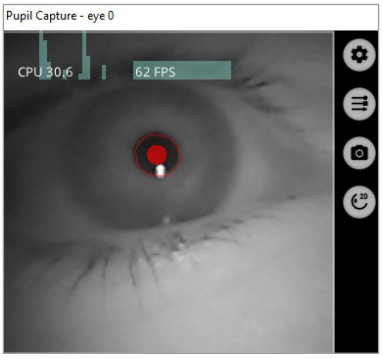
Pause

Pauses driving mode (driving fields coloured light red). Click again to return to driving mode.

Buttons for help windows

Eye

Shows or hides the window of the eye camera. Used to check whether the whole eye is visible and whether the pupil movements are correctly detected (red circle).

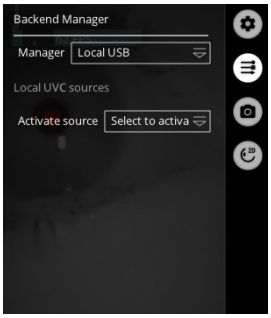


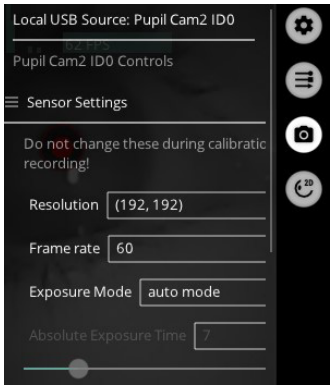
- Pupil settings in the eye window:

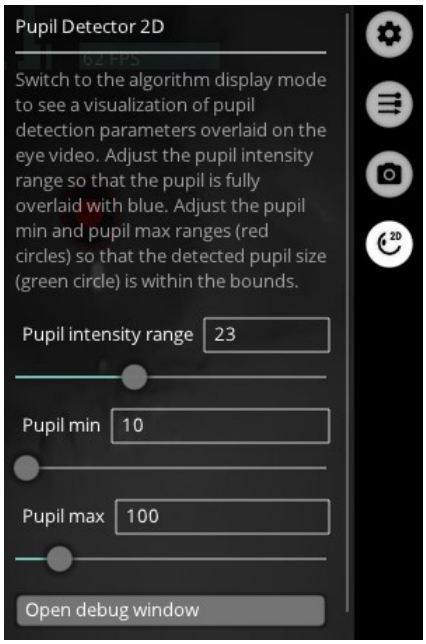
→ The settings should correspond to the images and should not be changed.

Important:
These settings must be made in the "Pupil-Service.exe", otherwise they will not be saved. After making changes, close the window by clicking the 'X' in the taskbar, otherwise the settings will cannot be saved.

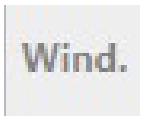








- General → Please retain the settings.
- Backend Manager → Please retain the settings.
- Local USB Source → Please retain the settings. The correct settings are 60 HZ and Auto Mode.
- Pupil Detector 2D → Use the "Pupil intensity range" slider to change the intensity of pupil detection.



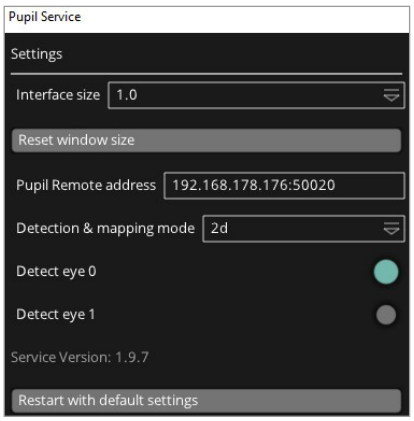
Shows/hides the following windows: "gazereceiver.exe" and "Pupil-Service".

Optional for the control unit:

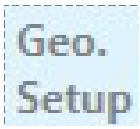
- Detect eye 0 - right eye
- Detect eye 1 - left eye

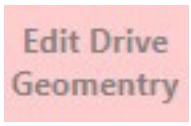
Settings in the pupil service window:

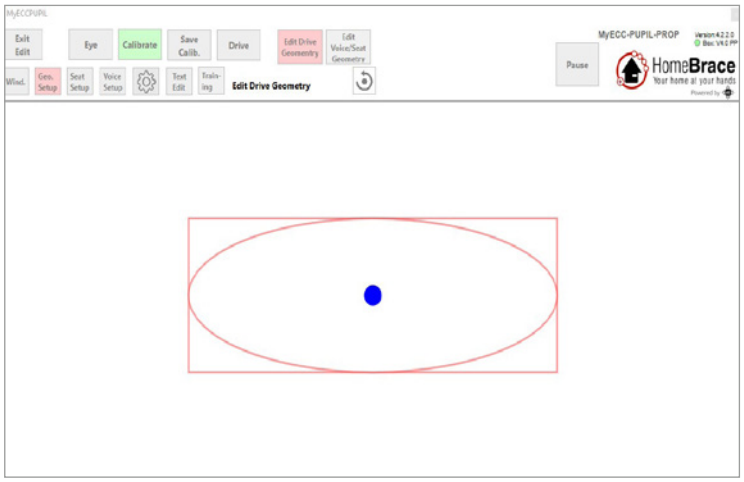
The settings should match the image and not be changed.



19-04 Driving geometry setting for proportional mode







The ellipse can be changed and moved by dragging the red rectangle.
This changes the inactive area in driving mode (standstill area).

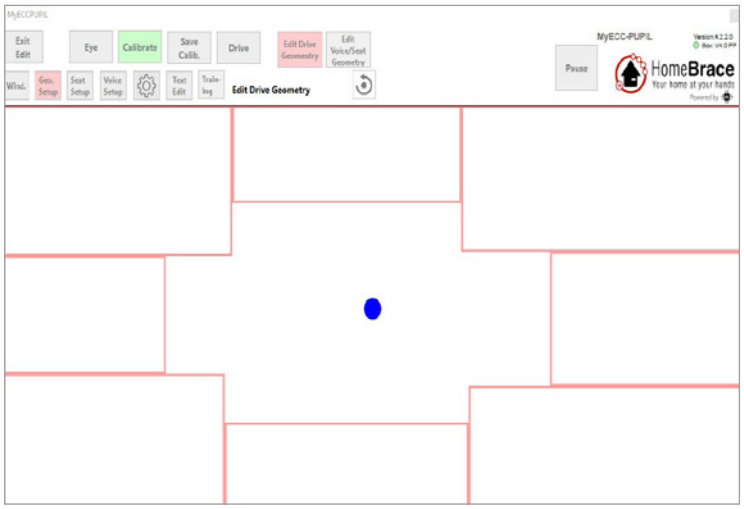


Reset the ellipse to factory settings.

19-05 Driving geometry setting for switch mode







The size and position of the fields can be changed by dragging the red borders with the mouse.



Reset the fields to factory settings.

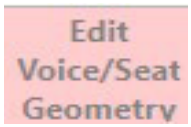
19-06 Geometry setting for voice output and seat adjustment

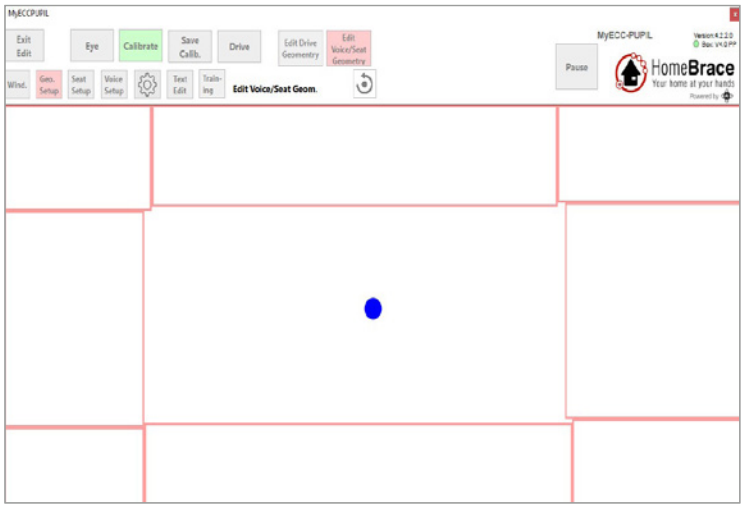
The voice output and seat adjustment options are customised according to the user's needs and are carried out by the responsible technicians.

No voice output/seat adjustment possible, skip this chapter (Geometry setting for voice output and seat adjustment)

19-06-01 Voice output







Important:
The voice output is deactivated on delivery and is only installed on request; after installation you will receive separate operating instructions for use.

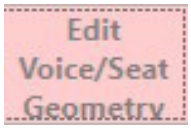
The size and position of the fields can be changed by dragging the red borders with the mouse.

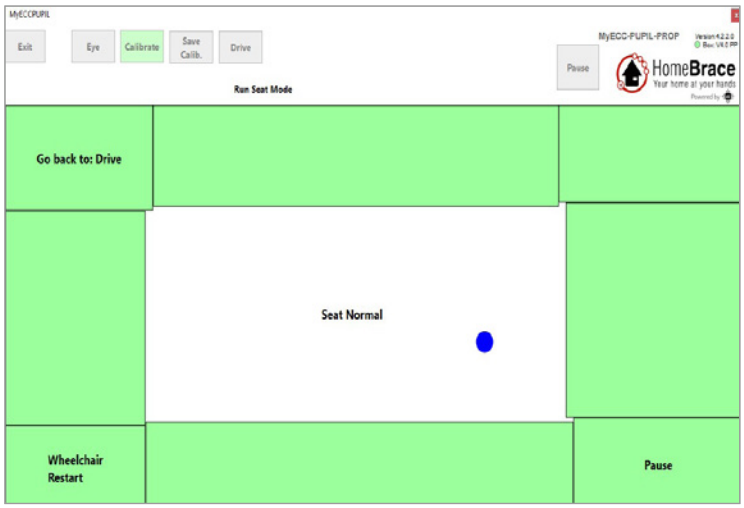


Reset the fields to factory settings.

19-06-02 Seat adjustment







Important:
The seat adjustment is changed using one of the four switching functions (programmable).

Left/right buttons:
Switching the seat adjustment steps (according to wheelchair programming).

Centre button | Seat height:
Display of the current seat adjustment step. This text is played back with voice output.

Buttons below/above:
Adjust the seat.

Button top left | Back to Drive:
Back to driving mode.

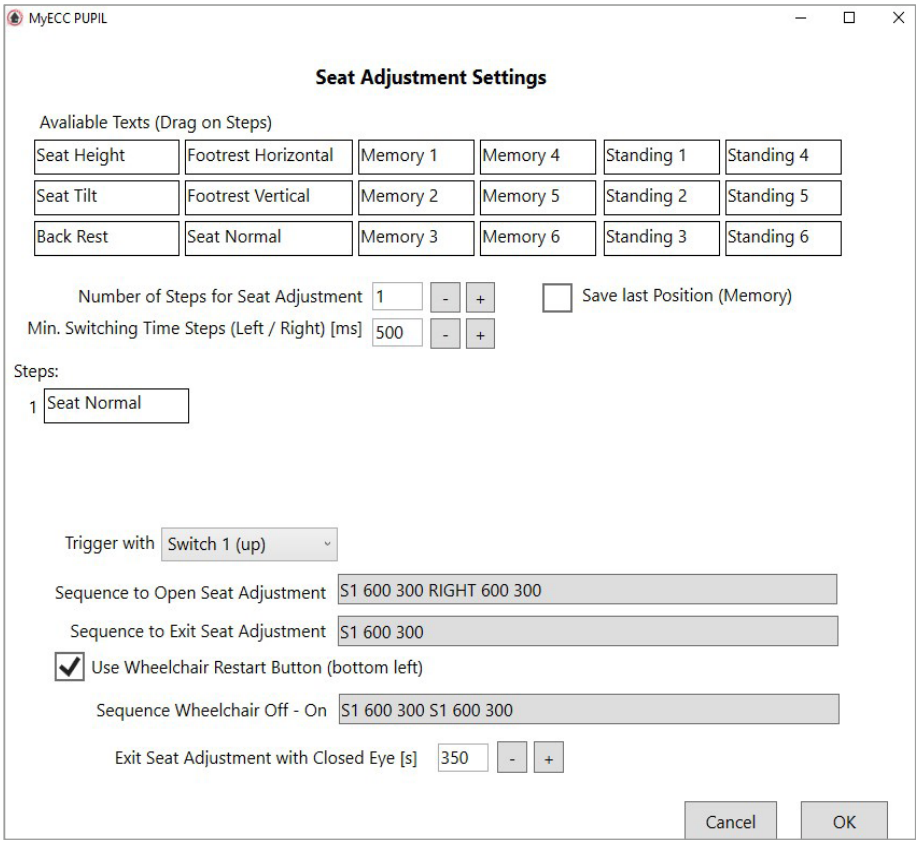
Button bottom left | Restart wheelchair:
Switching the wheelchair off and on again (optional function). This function is used, among other things, to synchronise the seat adjustment between the wheelchair control unit and MyEcc Pupil Prop if the two control units display different adjustments.

Button bottom right | Pause → End pause:
Pause/Play for seat adjustment.

19-07 Seat adjustment settings



Important:
Deactivated on delivery - triggering with ... (no triggering).



Available texts (drag to steps):
Predefined texts for the voice output in the seat adjustment. The texts can be dragged and dropped onto the steps.

Number of seat adjustment steps:
The number of seat adjustment options that match the wheelchair programming.
Enter a number or adjust with "+" or "-". Values from 1 to 16 possible.

Save last position: The selection depends on the behaviour of the wheelchair control.

Case 1 (not checked): The wheelchair control always goes to an initial, fixed setting when the seat adjustment is selected (e.g. seat height). Then the last position does not need to be saved.

Case 2 (checked): The wheelchair control always goes to the last setting used when the seat adjustment is selected. In this case, the programme must save the last position. **Note:** If the wheelchair control unit and MyEcc Pupil Prop display different seat adjustments, the synchronisation between the two is out of sync.

This can be rectified and synchronised by switching the wheelchair off and on again.
This is achieved by using the optional seat adjusting setting.

Minimum switching time steps (left/right) [ms]:
The wheelchair control requires a minimum time so that the changeover of the adjustment steps functions properly. Value in milliseconds.

Steps:
Display of the programmed steps. The desired texts can either be written directly into the fields or moved from “available texts” to “steps” using “drag and drop” with the mouse or finger on a touch tablet.

After changing a text in a step, the text output is activated for checking purposes.

Trigger with:

Selection:

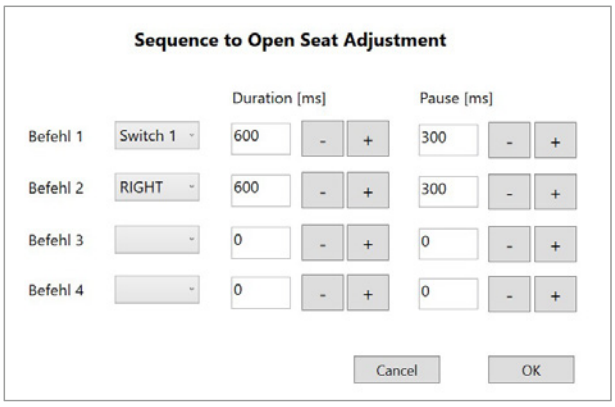


The switch for switching from driving mode to seat adjustment is set here. If the seat adjustment is not being used, switch it to “No trigger”.

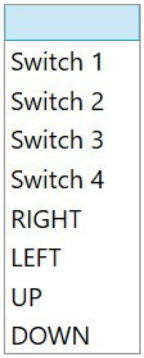
The following text appears: **Seat adjustment not active.**

Open seat adjustment sequence:
Determine the command sequence required to switch the wheelchair to seat adjustment. This depends on the programming of the wheelchair.

Click on the value field to open the input dialogue:



Selection:



Up to 4 commands in succession can be defined:

1. Selection of the switching function (Switch 1 - 4 or functions left - right - top - bottom)
2. Duration [ms]: Switch-on time of the selected function
3. Pause [ms]: Subsequent pause time

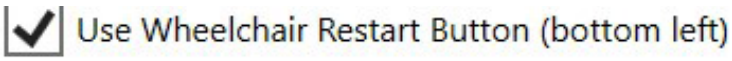
Example: S2 620 280 RIGHT 602 300

S2 620 280:
- Switch 2 is triggered for 620 milliseconds.
- Pause of 280 milliseconds.

RIGHT 602 300:
- “Right” command is triggered for 602 milliseconds.
- Then pause for 300 milliseconds.

Confirm entry with “OK”.

Exit seat adjustment sequence:
Determine the command sequence required to switch the wheelchair from seat adjustment back to driving mode.
Click on the value field to open the input dialogue (as above).



Determines whether the wheelchair off/on function is used and activated.

Wheelchair Off - On sequence:
Determine the command sequence for switching the wheelchair on and off.
Click on the value field to open the input dialogue (as above).

Exit seat adjustment by eye close [s]:
As an alternative to the "Back to driving" button, the seat adjustment can be exited by closing the eye for a longer period of time. Minimum time in seconds.

Alternatively, you can call up the seat settings through the special control display as follows:

- Look upwards. Close your eyes. Wait until the warning tone sounds. Open your eyes.
- Observe the displays in the special control display: Focus up, down, right and left to navigate to navigate in the special control display.
- Find seat settings: Navigate to the seat settings and select them.

To return to driving mode, look at upwards close your eyes until you hear the tone, open your eyes and you are in driving mode.

20 Safety instructions

If the MyEcc Pupil Prop control unit fails, the wheelchair can still be moved using the original wheelchair control unit. To do this, switch the entire wheelchair off and on again using the wheelchair's own controls. HomeBraceGermany must be informed of the failure immediately and the MyEcc Pupil Prop control unit may only be operated again after the repair has been completed.

Any action being performed can be stopped **IMMEDIATELY** by closing the eyes (driving functions, seat adjustments, accessory controls). Switching off the wheelchair also leads to an immediate **STOP** of the action being performed.



It is essential to check the safety functions of the MyEcc Pupil Prop carefully before use.

The following monitoring mechanisms are active and are continuously monitored. Malfunctions with the following will result in an immediate **STOP** of the wheelchair:

- Camera contact with the eye
- Operability of the eye control unit
- Monitoring the Windows operating system
- Connection from the eye control unit to the MyEcc Pupil Prop
- Cable/plug connection from the eye control unit to the MyEcc Pupil Prop

Appropriate measures must be taken to prevent or avoid crushing, impact, shearing andtrapping. The following points in particular must be checked and monitored:

- STOP function of the software when closing the eyes (the software must deactivate itself)
- Speeds
- Setting parameters for possible seating positions

21 Safety functions

If the eye-camera software stops sending new eye-mouse coordinates for a certain period of time (FOCUSTIMEOUT) (eye focus lost or other eye-camera problems, tablet PC overload), all driving commands or adjustment functions are stopped **IMMEDIATELY**.

If, for any reason (Windows problems, programme crash, etc.), the application fails to send activation impulses to the relays in the control box, all the relays are **IMMEDIATELY** switched off, stopping the movement or active adjustment.

As of software version 4.22, the software can automatically deactivate after a specified period of time when the user looks into the ellipse.

Enable automatic deactivation via the ellipse:

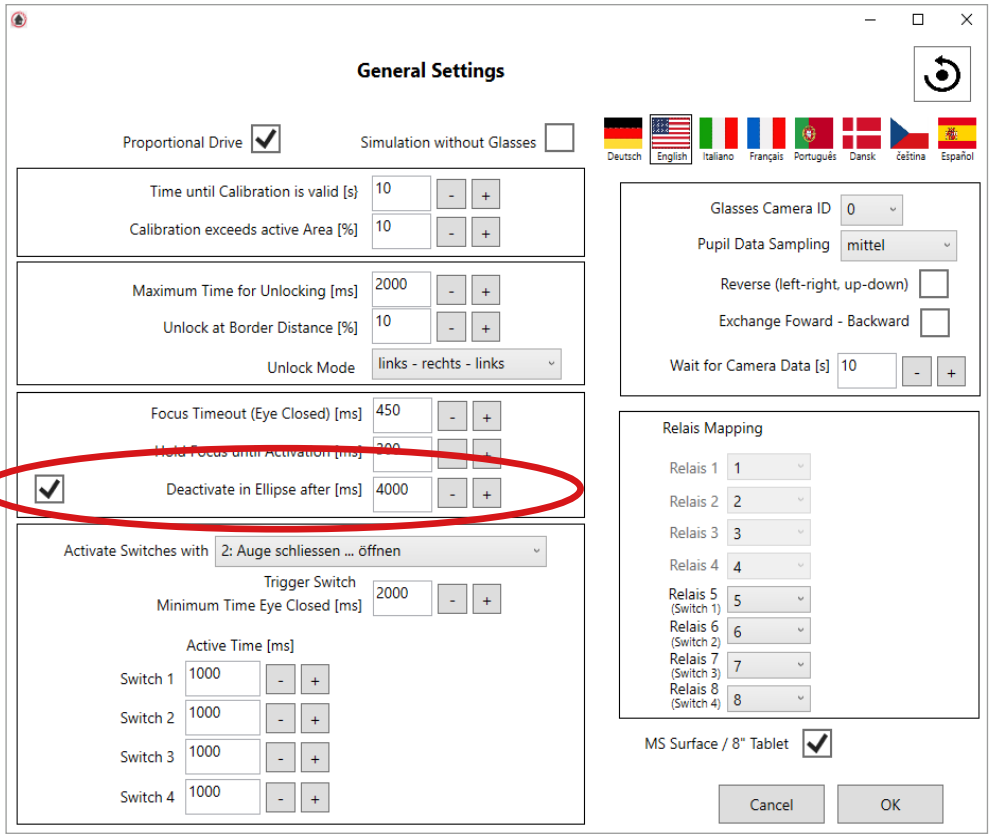


- To change the settings, double-click the “Exit” button.

→ (This function must first be enabled in the “INI file”; see the note on page 23.)



- Click the gear icon (Settings) to adjust the desired parameters.



- To adjust the desired parameters, enable the checkbox “Deactivate in ellipse after [ms]”.

→ The software reacts to the user’s gaze into the ellipse and uses the specified time (e.g. 4000 ms > 4 seconds) to trigger the deactivation.

22 Combination with third-party products

HomeBraceGermany accepts no liability or warranty for possible damage or malfunctions in combinations with third-party products. Only original HomeBraceGermany parts are to be used for all repairs or extensions in order to guarantee the proper function and safety of the products.

HomeBraceGermany GmbH accepts no liability or warranty for combinations with third-party products.

23 Artificial intelligence (AI)

Our artificial intelligence module is fully functional from software version 4.19 and hardware version 4.1.
If one of the modules is not available, the AI is automatically switched off.

The integration of AI-based technology provides precise control of the electric wheelchair, creating a new dimension of mobility and independence.

AI-supported detection of the pupil:
It is not necessary to move to a “zero position” in order to start reliable detection. The software searches for its destination independently, recognises it and uses it.

Safety shutdown:
The software learns to capture and analyse the correctly calibrated field of view based on the user’s movements. This rules out any possible misinterpretations. Cramps, spasms, coughing or other potential disturbances are safely masked by the normal movement pattern.

Machine learning:
Through continuous learning and regular updates, the MyEcc Pupil Prop can constantly improve and adapt to new needs and challenges.

Accessibility:
Technology opens up new opportunities for people with different types of impairments and contributes to inclusion.

Wide range of applications:
In addition to controlling the wheelchair, AI-based eye control can be used to control other devices such as computers, communication systems, robotic arms and even household appliances.

Integration with other technologies:
The AI-based MyEcc Pupil Prop can be easily integrated into smart home systems and other assistive technologies. This enables more comprehensive support and control to be offered.

Faster response time:
The AI-based MyEcc Pupil Prop can respond very quickly to commands, which can be particularly useful in emergency situations.

Increased independence:
Users who are dependent on assistance due to their limitations can use the AI-based eye control to achieve greater independence and autonomy.

Adaptability and personalisation:
The AI-based MyEcc Pupil Prop can learn and adapt to an individual user's eye movement behaviour. Over time, this learning process allows the control system to become more and more attuned to the user's needs.

User friendliness:
Intuitive eye movement controls allow even people with severe physical disabilities to operate the wheelchair easily and safely, without the need to physically operate buttons or switches.

24 Care and maintenance

Before each use, check the cable routing and the condition of the cables (tight fit, no kinks, no defects). If defects or similar are detected, the system must not be put into operation. HomeBraceGermany must be informed of the defect immediately.

The components have no serviceable parts.
The hardware must not be opened.

All components should be checked annually to ensure that they are intact:
- Check screw connections for tightness.
- Check concealed cables for possible damage or protect them from damage.

We recommend regular cleaning and disinfection with a disinfectant and cleaning agent intended for household use (www.rki.de). Cleaning should only be carried out with a wipe. Wipe down all exterior surfaces and allow them to dry by themselves.

Only genuine HomeBraceGermany parts should be used for repairs and upgrades.

25 Software update

The software does not require any updates, as the latest final version is always available on the system at the time of delivery, so no additional updates are required.

If there are any complications within the software, the user and the specialised retailer will be informed automatically by HomeBraceGermany. An update will then only be carried out by HomeBraceGermany.

Any unauthorised intervention, such as tampering with the hardware or software, will invalidate the warranty.

26 Disposal

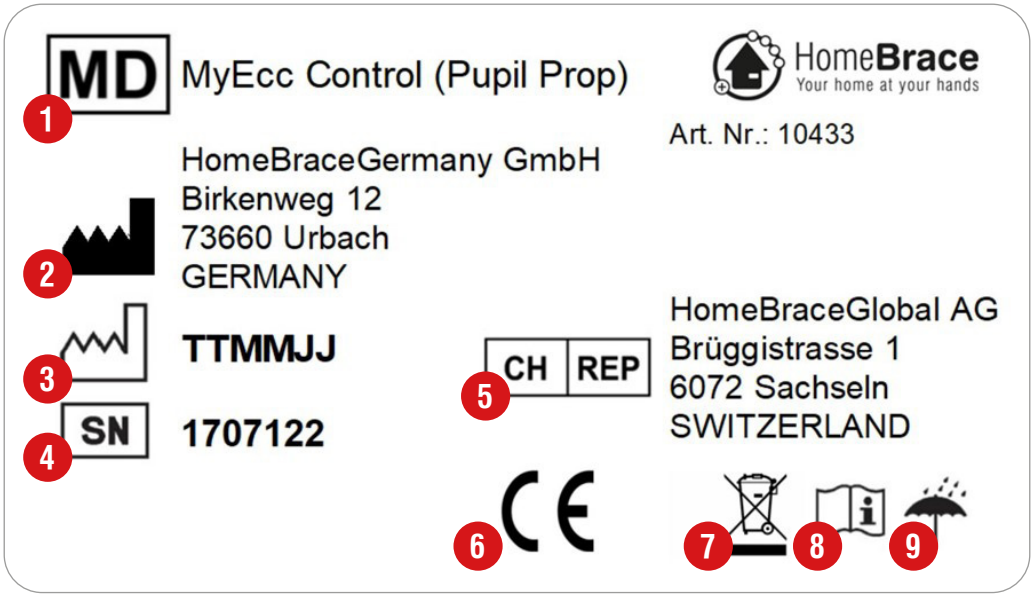
Disposal of the MyEcc Pupil Prop:
The MyEcc Pupil Prop consists of recyclable materials that do not belong in household waste and should be recycled. For this reason, the German Electrical and Electronic Equipment Act (Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten) requires consumers to ensure that electrical and electronic equipment is disposed of properly and separately from household waste. Please return the MyEcc Pupil Prop to a recycling centre or similar collection point and help protect the climate and the environment.



27 Expected service life

The components and construction of the MyEcc Pupil Prop are designed to provide a service life of 5 to 8 years when used as intended.

28 Nameplate



1. Medical device
2. Manufacturer
3. Production date (DDMMYY)
4. Serial number
5. Swiss authorised representative
6. CE labelling
7. Disposal of the MyEcc Pupil Prop
8. Follow the instructions for use
9. Protect from moisture

29 Technical data

Operating/storage environment:
- Maximum ambient temperature during operation: 0°C (32°F) to 55°C (131°F)
- Maximum humidity during operation: 0% - 85% relative humidity
- Maximum ambient temperature during storage: -20°C (-4°F) to 75°C (167°F)
- Maximum humidity during storage: 5% - 85% relative humidity
- MyEcc Pupil Prop is splash-proof (IP 22)

Power requirement:
USB 3.0 plug connection 5VDC (100mA)

Weight/dimensions:
MyEcc V5
0.325 kg
120 × 95 × 50 mm (length × width × depth)

Operating system:
(without processor) ATMEL ARM software version V2.0
Operating system:
(without processor) ATMEL ARM software version V4.04

Required operating system on the display:
Min. Windows 10 or newer, from software version V3.2 (ECCAPP-PUPIL.exe) or higher

30 Network security

The MyEcc Pupil Prop has no external access to change the system. Information on the system safety of the other components can be found in the manufacturer's manuals (camera system, display, wheelchair).

No external data carriers may be connected to the system.

31 State of the art

HomeBraceGermany products are designed and realised according to the latest state of the art. Safety and compliance with standards are confirmed by the affixing of the CE mark.

The declaration of conformity can be requested free of charge from HomeBraceGermany.

32 Residual risks

The following residual risks must be taken into account when operating the MyEcc Pupil Prop. These are recognised as part of the risk analysis and are accepted by HomeBraceGermany. It is not possible for HomeBraceGermany to completely prevent these risks.

Risk: Driving forwards/backwards over critical points (steps, ramps, slopes, edges).
Cause: User may not be able to see the route.
Consequence: Accident with the wheelchair (serious injuries, death).
Control measure: User or accompanying person aware of the route/environment.
Recommended action: Emergency stop on the wheelchair (can be remote-controlled if necessary).

Risk: Collision with other persons.
Cause: User cannot recognise the obstacle.
Consequence: Personal injury.
Control measure: User or accompanying person aware of the route/environment.
Recommended action: Emergency stop on the wheelchair (can be remote-controlled if necessary).

Risk: A plug comes loose when driving/adjusting the seat.
Cause: The cabling was not checked before driving off.
Consequence: Wheelchair remains stationary, seat adjustment via MyEcc Pupil Prop is no longer possible (wheelchair is in danger zone, unfavourable sitting position, user has breathing difficulties).
Control measure: check all cable connections according to the instructions before use.
Recommended action: Move the wheelchair with the control unit out of the danger zone and improve the seating position using the wheelchair controls.

Risk: The power supply for the MyEcc Pupil Prop drops below 5V.
Cause: Cable fault, batteries not charged.
Consequence: Wheelchair remains stationary, seat adjustment via MyEcc Pupil Prop is no longer possible (wheelchair is in danger zone, unfavourable sitting position, user has breathing difficulties).
Control measure: Before travelling, check the current charge status of the wheelchair and charge it first if necessary.
Recommended action: Wheelchair can still be driven with the original controls and moved out of the danger zone. The seating position can be improved with the original controls.

33 FAQ / frequently asked questions

The display does not respond or is black. What should be done?

- Ensure that all cable connections between the display and the control unit are firmly and correctly plugged in.
- Restart the display by switching it off for a few seconds and then switching it on again.
- Check whether the battery is charged.
- If the problem persists, contact the manufacturer of your display device.

Eye control does not work or is imprecise. What is the problem?

- Changing the seating position. Recalibrate the eye control.
- Make sure that the pupil movements are detected correctly and that the sensor recognises the eye correctly.
- Check the surroundings for possible light sources or reflections.
- If the problem persists, please contact the manufacturer of your eye control unit.

The wheelchair suddenly stops moving in the sunlight. What needs to be considered?

- Make sure that the following settings have been made in the Pupil Service:
  Frame Rate 60 | Auto Mode

The MyEcc Pupil Prop software responds, but the wheelchair does not drive. Why?

- Check the cabling.
- Use the original cables.
- Check whether the control box is connected correctly and the LED (A) is lit.
  (In prop mode: A and B light up).
- When connecting the MyEcc Pupil Prop, select the appropriate port on the control box.
- The appropriate driving profile has been selected on the wheelchair.
- Software set to Prop, but hardware (V1/V2/V3) only switch control.
- Software restarts automatically and adapts to the hardware.
- **Error message: OMNI input module error 09D0.**
  First start the MyEcc Pupil Prop software and then switch on the wheelchair via the OMNI display.

If the problem persists, please contact our technical support.

34 Error messages

- **File "eccapp.ini" faulty or not found.**

→ The ini file cannot be read when the programme is started.

- **No MyEcc box was recognised. MyEcc Pupil or MyEcc Pupil Prop control box must be present.**

→ No box detected when starting the programme. Software configured in switch mode. Check with USBDeview.

- **No MyEcc box was recognised. MyEcc Pupil Prop control box must be present.**

→ No box detected when starting the programme. Software configured in proportional mode. Check with USBDeview.

- **MyEcc Pupil Prop control box must be present. The existing control box is MyEcc Pupil.**

→ When starting the programme in proportional mode with a box without "Prop" (e.g. box version 2).

- **"gazereceiver.exe" cannot be started.**

→ The "gazereceiver.exe" utility programme could not be started. Check installation.

- **MyEcc: USB GPIO device not found.**

→ Message appears if the interface to the switch control box version 2.0 is not found.
Presumably defective box.

- **MyEcc: Serial interface of the control box not found.**

→ Message appears if a box is present but the interface for control is not found .
Box version 4.x. Presumably defective box.

- **Error reading the "Textdata.xml" file.**

→ The file with the language translations is not available.

- **Languages file "myecc.xliff" not found.**
  Error loading languages file "myecc.xliff" not found.

→ The file with the language translations is incorrect or does not exist.

35 Contact

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