

Operating Instructions

SECUREPLUS SYSTEM



www.amf-bruns.de

Foreword

Dear Reader,

these Operating Instructions provide all of the information necessary to operate the optional SecurePlus System safely.

The SecurePlus System is designed and constructed in accordance with state-of-the-art technology and recognised safety standards. Persons and material assets can however still be at risk, as not all danger areas can be eliminated if the functional capability is to be maintained. Accidents caused by these risks can however be prevented by strictly observing these Operating Instructions. Over and above this, the operational efficiency of your SecurePlus System can be used to the full and unnecessary faults can be prevented.

These Operating instructions only apply to the SecurePlus System in combination with suitable seats.

After reading these Operating Instructions for the first time, keep them in a safe place for future reference over the entire lifetime of the SecurePlus System. If you sell SecurePlus System, hand these Operating Instructions over to the new owner.

Keep these Operating Instructions in the vehicle so that they can be referred to at any time when problems or questions arise.

All details, figures and dimensions given in these Operating Instructions are non-binding. They cannot be used as the basis for any claims whatsoever.

This document must not be reproduced or duplicated, in full or in part, without the prior, written permission of the manufacturer.

The SecurePlus System must never be converted or modified in any way, without seeking the prior, written permission of the manufacturer. Unauthorised modifications will render the manufacturer's liability and guarantee null and void.

Use only original spare parts or spare parts which have been approved of by the manufacturer. If spare parts other than these are used, this can have a negative effect on the specified characteristics, the functionality and safety of the SecurePlus System. If other spare parts are used, liability for consequential damage will be rendered null and void.

Contact the AMF-Brunns GmbH & Co. KG customer service department or your local dealer to order spare parts or accessories (see Chapter 10, page 29).



NOTE

The SecurePlus System fulfils the requirements of the EU Directive ECE R16.



NOTE

The current version of these Operating Instructions as well as the current versions of supplementary documents (e.g. The Installation Instructions and the instructions for optional equipment) can be found under:

www.amf-bruns-behindertenfahrzeuge.de/service/download-portal/

Explanation of symbols and signs

To improve understanding, the following conventions should be met for these Operating Instructions:

1.

The following conventions are used to highlight important information:



DANGER

...warns of a situation of immediate danger, which can cause severe or fatal injuries if not avoided.



WARNING

...warns of a potentially dangerous situation, which can cause severe or fatal injuries if not avoided.



CAUTION

...warns of a potentially dangerous situation, which can cause slight injuries, if not avoided.



ATTENTION

...warns of a potentially dangerous situation, which can cause material damage, if not avoided.



...contains general notes and useful information.



...gives a reference to important information contained in other sections and documents.

2.

Some text passages serve a special purpose. These are identified as follows:

- Lists.

⇒ Instructional text, e.g. a sequence of activities.

3.

Meaning of directions:

If directions are given in the text (in front of, front, behind, rear, right, left), these directions relate to the normal direction of travel of the vehicle.

4.

Meaning of the term “Adult Person”:

The term “adult person” is used in the text that follows. This term means that a person is tall and heavy enough to reliably trigger the sensors that form part of the SecurePlus System. A clear limit in terms of body weight, height or age of a person cannot be given here.

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1 The SecurePlus System in Brief

The SecurePlus System informs the driver of the vehicle, whether the seats from the 2nd row back are occupied and whether the occupants are wearing their seat belts.

When the ignition is switched ON, the SecurePlus System display unit shows the status of the seats using different coloured icons. If the occupants are not wearing their seat belts, the driver of the vehicle will also receive an acoustic alarm.

Suitable seats are equipped with a wireless transmitter and are connected to the SecurePlus System via a Bluetooth connection.



Figure 1: Display Unit in Operation

The display unit is available in two versions, one for vehicles with up to nine seats and one for vehicles with up to twenty seats. Thanks to its modular design, the system is flexible and can be extended by users themselves. The SecurePlus System does not provide information about the original seats (driver and co-driver seats in particular), wheelchair spaces or other additional seats without the appropriate equipment.

2 Safety



WARNING

There are a number of risks of suffering personal injury and material damage involved in the operation of the SecurePlus System.

Therefore:

- It is imperative, that these Operating Instructions are read thoroughly before operating your SecurePlus System. Always observe the notes and information contained herein, in particular the Safety Instructions.
 - If these Operating Instructions or parts thereof are lost or become illegible, please request a new copy from the manufacturer.
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For further safety instructions, read the operating instructions provided for the basic vehicle and its optional equipment.

Prerequisite to the safe handling and trouble-free operation of the SecurePlus System is a thorough knowledge of the applicable safety information and the safety regulations.

It is therefore imperative that this chapter is read thoroughly before operating the SecurePlus System and that the instructions and warnings given herein are strictly observed. The safety instructions and warnings, given at the appropriate places in the following Chapters, must also be strictly observed. The manufacturer will not be held responsible if safety information and warnings are not strictly adhered to.

In addition to the information given in these Operating Instructions, local legislative regulations must be taken into consideration, in particular those regarding safety and accident prevention.

2.1 Proper Use

The AMF-Brunns SecurePlus System informs the driver on the status of the vehicle's seats from the 2nd row back. It gives information as to whether the relevant seats are being monitored and whether or not the persons occupying those seats are wearing their seat belts. Seats in the first row are not monitored by the SecurePlus System.

The SecurePlus System only monitors vehicle seats that are fitted with the appropriate equipment, are connected to the SecurePlus System and are recognised when the ignition is switched ON. Proper use also includes a pre-journey check to make sure that the number of seats displayed corresponds to the number of seats fitted to the vehicle.

The SecurePlus System only serves as a reminder and support for the driver of the vehicle. The driver of the vehicle must ensure that all passengers are properly secured at all times by the safety systems provided (seat belts, correctly adjusted headrests, safety systems for passengers in wheelchairs or unoccupied wheelchairs).

Proper use also includes strictly adhering to the information given in these Operating Instructions.



WARNING

If the SecurePlus System is used for any other purpose than that described above, this may result in dangerous situations for persons or material damage being caused.

Therefore:

- Only use the SecurePlus System for the purpose for which it was intended.
- Make sure that all passengers are properly secured at all times by the personal safety systems provided for this purpose.
- Always adhere to information given in these Operating Instructions.
- Do not use the SecurePlus System for any other purposes, particularly those given in Section 2.2, page 10. These are deemed to be improper use.

2.2 Improper Use

Any use other than that described in Section 2.1, page 9, is deemed to be improper use.

Improper use is when for example:

- The driver of the vehicle relies solely upon the information provided by the SecurePlus System without checking personally,
- if the SecurePlus System is covered up or the transmission of information is otherwise impaired,
- the level of noise in the vehicle is so high that it renders the acoustic warning given by the SecurePlus System inaudible,
- the SecurePlus System is operated by persons who do not fulfil the necessary requirements (see Section 2.3) and if
- the SecurePlus System is operated when in a faulty condition or when safety relevant faults exist.

2.3 Operator Requirements

The SecurePlus System must only be used and operated by the following persons:

- Persons over the age of 18.
- The person in charge of the vehicle who has read these Operating Instructions.
- Other persons who have read these Operating Instructions and have been familiarised with the SecurePlus System and its functions by the driver of the vehicle.
- Persons who are both physically and mentally capable of doing so.
- Persons who are not under the influence of alcohol, narcotics, medicines, drugs or other substances.

Installation, commissioning, maintenance, repair, troubleshooting and disposal of the SecurePlus System must only be carried out by persons with the appropriate technical training and experience.

2.4 Product Monitoring

Please contact AMF-Bruns GmbH & Co. KG immediately if faults or problems are encountered when operating your SecurePlus System or if accidents or "near-misses" occur.

AMF-Bruns will effect a solution to the problem with your help and the knowledge gained will flow into future projects.



NOTE

Guarantee work on the SecurePlus System must only be carried out with the prior agreement of AMF-Bruns GmbH & Co. KG.

The costs of such work will not be accepted by AMF-Bruns without prior agreement.

2.5 Safety and Accident Prevention Regulations

Adhere to the following notes in order to prevent personal injuries and material damage. For commercial use, also adhere also to the relevant safety and accident prevention regulations laid down by the trade associations.

- The SecurePlus System must only be used for the purpose for which it is intended, otherwise dangerous situations, with resultant injuries, may occur (Proper Use: see Section 2.1, page 9).
- Components of the SecurePlus System that are fitted to the seats contain button cell batteries to provide the electrical power supply. These can become accessible if the seats are turned, folded or removed from the vehicle. There is a risk of fatal injury if button cell batteries are swallowed. Therefore, make certain that button cell batteries cannot be swallowed by children or people with mental disabilities.
- The owner is responsible for ensuring that proper use is adhered to, in particular that the SecurePlus System is only operated by authorised persons.

- If the SecurePlus System is used commercially, the owner must ensure that operating personnel are familiar with the operation of the system under all operating conditions by giving training and familiarisation courses.
- The SecurePlus System must be inspected by a technical expert after installation and before being used for the first time. If the SecurePlus System is used commercially or communally, have it inspected by a technical expert at intervals of not more than one year after commissioning. During inspection, faults affecting the safety should be systematically identified and remedial action taken (for further information, refer to the Installation Instructions).
- The SecurePlus System must not be operated in a faulty condition, as severe injuries can be caused by this. If faults occur, initiate repair.
- Deactivate the SecurePlus System and switch the vehicle engine OFF before carrying out maintenance and repair or cleaning work. Secure the vehicle, to prevent it from rolling away. Make certain that no other person can inadvertently start the vehicle or switch the SecurePlus System ON (e.g. by removing the ignition key or disconnecting the starter battery). If this is not done, there is a risk of injury.
- Use only original spare parts and accessories that have been approved of by the manufacturer. If non-original or non-approved spare parts are used, liability for the consequences will be rendered null and void.
- Do not repair of bridge defective fuses but replace them with fuses of the same Ampere rating.

3 Description

The SecurePlus System assists the driver of the vehicle to check whether the adult passengers sitting on the rear seats are wearing their seat belts correctly. The SecurePlus System operates independently of other systems with a similar function, e.g. a status indicator for the original seats in the basic vehicle.



NOTE

The seats in the first row (driver and co-driver as a rule) are never monitored by the SecurePlus System.

Detecting whether a seat is occupied refers to adult persons. The function of the SecurePlus System can be restricted if the seats are occupied by children or if child seats or seat cushions are used.



NOTE

The allocation of a seat to a position on the display unit is determined by you when setting up the connection.

If a connected seat is repositioned within the vehicle, the position in the display will not be automatically updated.

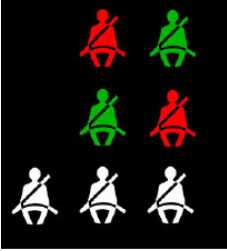



Use the connection reset options if you want to keep the allocation of the seats to the display positions up to date.


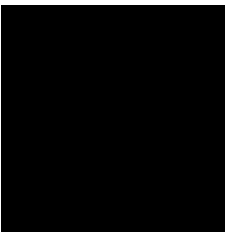

If a “Low Battery” warning is given and it is not clear as to which seat the blinking symbol belongs to: Sit on each unoccupied seat in sequence. When you sit on the seat with the weak battery, its symbol will blink red.



For information regarding the basic functions of the basic vehicle and its seat belt status indicator, refer to the vehicle user manual.

3.1 Display Unit and Acoustic Signal

Display unit	Meaning / acoustic signal
	<p>Status display for a display unit for nine seats</p> <p>The connected seats are displayed as seat icons in three rows and three columns. Each connected seat is assigned to a fixed display position. The seat status displayed can thus be checked directly at the respective seat.</p> <p>The distribution and status of the seats shown in the adjacent Figure are merely an example.</p>
	<p>Status display for a display unit for twenty seats</p> <p>The connected seats are displayed as seat icons in five rows and four columns. Each connected seat is assigned to a fixed display position. The seat status displayed can thus be checked directly at the respective seat.</p> <p>The distribution and status of the seats shown in the adjacent Figure are merely an example.</p>
	<p>White seat icon for a connected seat:</p> <p>Seat status:</p> <ul style="list-style-type: none"> the seat is connected. The seat is not occupied by an adult person. Whereby the seat belt can be buckled or unbuckled.
	<p>Green seat icon for a connected seat:</p> <p>Seat status:</p> <ul style="list-style-type: none"> the seat is connected. The seat is occupied by an adult person. The person is wearing a safety belt.

Display unit	Meaning / acoustic signal
	<p>Red seat icon for a connected seat: Seat status:</p> <ul style="list-style-type: none"> the seat is connected. The seat is occupied by an adult person. The person is not wearing a safety belt. <p>Accompanying acoustic signal:</p> <ul style="list-style-type: none"> A person is not wearing a safety belt when beginning a journey: 60 seconds after switching the ignition ON, a warning signal sounds for 30 seconds, it then changes to an alarm signal which sounds for 30 seconds. A person who was already wearing a safety belt has unbuckled it: The alarm signal sounds for 30 seconds. If several persons unbuckle their safety belts, the alarm signals can overlap and sound for longer than 30 seconds.
	<p>No seat icon at a display position:</p> <ul style="list-style-type: none"> No seat is connected to this display position.
	<p>Text “LOW BATTERY” and a blinking seat icon (independent of status, as an example, the green symbol in the centre is blinking in the left-hand Figure).</p> <p>The battery in the seat, whose symbol is blinking, is weak and must be replaced.</p> <p>Take note that the positions of the seat icons on the display unit are determined when setting up the connection of the seats (see Installation Instructions). The positions of the seat icons only correspond to the positions of the seats in the vehicle if this was taken into consideration when setting the system up.</p>

3.2 Markings on the Components

The SecurePlus System does not have a rating plate of its own.

Display unit identification markings, like device type and hardware version, etc., can be found on the rear of the unit (see Figure 2). The traceability of a specific display unit is provided by way of the serial number. This is also contained in the barcode. The serial number of a display unit for nine seats starts with “0595”, followed by a four-digit number. The serial number of a display unit for twenty seats starts with “0595A”, followed by a three-digit number.

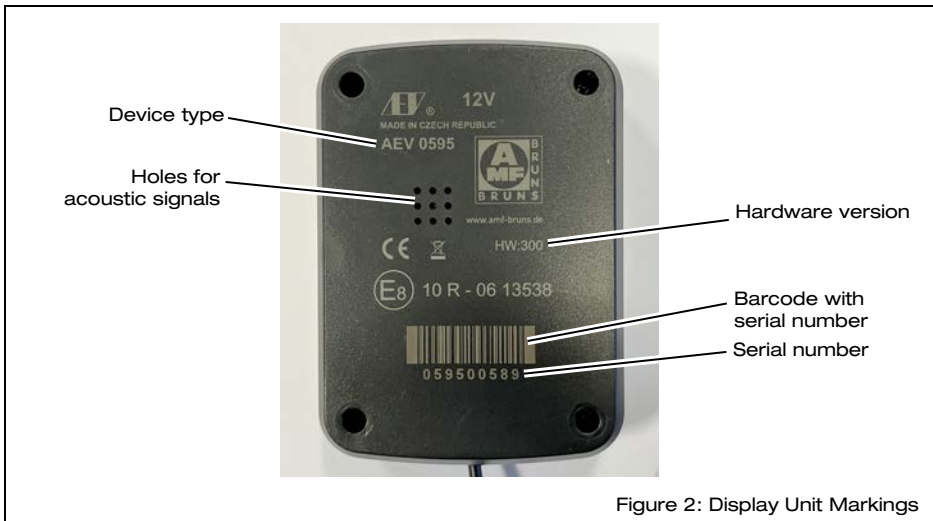
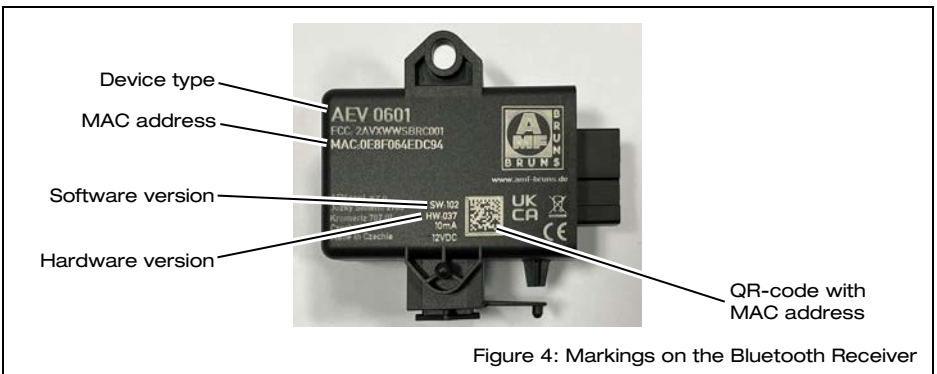
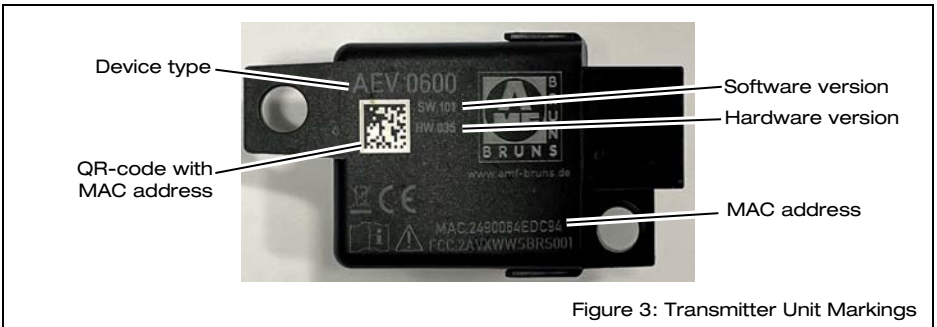


Figure 2: Display Unit Markings

Markings indicating the device type, software version and hardware version are printed on every Bluetooth receiver and every transmitter unit fitted to a seat (see Figure 3 and Figure 4).

MAC addresses and serial numbers are unique and are assigned to a component to provide traceability. The printed QR codes also show the MAC address.



3.3 Technical Data

Designation	SecurePlus System
Possible number of connected seats	1-9 or 1-20 depending upon the display unit version
Number of Bluetooth receivers	In standard cases 1, in special cases a maximum of 3
Button cell batteries for the transmitter units in the seats	CR2477X
Connection standard	Bluetooth Low Energy



Read the operating instructions provided with the system components for further technical information.

4 Shipping

The SecurePlus System is transported by the manufacturer or by trained, experienced personnel.

5 Fitting, Setting the System Up



NOTE

Installing and setting up the SecurePlus System are described in the separate Installation Instructions. These also include a spare parts list. The latest version of the Installation Instructions can be found under:

www.amf-bruns-behindertenfahrzeuge.de/service/download-portal/

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6 Operation

6.1 Safety Regulations for Operation



The safety information given in the Safety chapter must have been read prior to operation (see Chapter 2, page 8).



DANGER

Risk of fatal injury by using the SecurePlus System incorrectly.

If passengers are not properly secured in the vehicle, there is a risk of fatal injury for the occupants in the event of an accident or in the event of abrupt driving manoeuvres.

Therefore, before starting a journey:

- Check that the number of seats shown on the display unit matches the number of compatible seats installed in the vehicle.
 - Make certain that all passengers are properly secured at all times by the personal safety systems provided for this purpose.
 - Remember that children, child seats and persons sitting on seat cushions will not be detected reliably.
 - Make certain that unoccupied child seats are secured correctly (Iso-Fix and/or seat belt).
 - Make certain that the original seats, wheelchair spaces and additional, incompatible seats are not detected by the SecurePlus System.
-



DANGER

Risk of fatal injury through swallowing button cell batteries.

The button cell batteries can become accessible when seats are rotated, folded or removed from the vehicle. There is a risk of poisoning or fatal injury if button cell batteries are swallowed.

Therefore:

- Make certain that button cell batteries cannot be swallowed by children or people with mental disabilities.
-



WARNING

Risk of mixing seats up.

The assignment of the position of a seat icon in the display unit to the corresponding seat in the vehicle is determined when setting up the SecurePlus System (see Installation Instructions). If the display positions are not assigned sensibly during installation or if seats in the vehicle are repositioned after installation without adjusting the SecurePlus System, there is a risk of the seats being confused. This will increase the risk of injury in the event of an accident.

Therefore:

- Assign the positions of the seat icons in the display unit to reflect the actual positions of the seats in the vehicle as closely as possible.
- Re-assign the positions of seat positions in the display unit if seats in the vehicle are rearranged.
- Avoid setting up a seat at multiple display positions at the same time.
- If in doubt, check the seat belt status of all occupied seats if a red seat symbol cannot be clearly assigned to a seat in the vehicle.



ATTENTION

The sensors in the seats can be damaged if subjected to an excessive punctiform load. The SecurePlus System components in the seats can suffer damage when fitting or removing the seats.

Therefore:

- Never kneel on the seats or place any other form of punctiform loads on them.
- Take great care not to damage the seats when fitting or removing them.



NOTE

If compatible seats have been removed and are still in the vicinity of the vehicle and connected to the Bluetooth receiver when the ignition is switched ON, these can also be shown as a seat icon on the display unit.

This is also possible if the seats have been fitted to another vehicle in the vicinity.

6.2 Switching ON and OFF

The SecurePlus System is automatically switched ON and OFF when the vehicle ignition is switched ON and OFF.

6.3 Operation Prior to Starting a Journey

- ⇒ Wait until all passengers are seated and are secured in their seats.
- ⇒ Switch the vehicle's ignition ON.
- ⇒ Check that the number of seat icons shown on the display unit corresponds with the number of compatible seats installed.
- ⇒ Analyse and remedy the cause (e.g. seat added but not set up, see Chapter 9, page 24), if the numbers do not correspond.
- ⇒ Check the display unit to ensure that all compatible seats that are occupied are shown as occupied by a person wearing a seat belt (green seat symbols).
- ⇒ Make certain that all passengers are properly secured by the personal safety systems provided for this purpose.
- ⇒ Do not start a journey until this has been done.

6.4 Behaviour in the Event of a Warning After Starting a Journey

If a person sitting on a connected seat that has been detected as occupied unfastens their seat belt after starting a journey, the corresponding seat icon on the display unit will turn red and an acoustic alarm signal will sound for a period of 30 seconds.

- ⇒ Check the seat belts of all passengers and make certain that any seat belts that have been unfastened are fastened again.

7 Decommissioning and Conservation

Have the button cell batteries removed from the seats if the seats will not be used for a period of more than six months.

Contact the AMF-Brunns GmbH & Co. KG customer service department or your local dealer if you have any further questions regarding decommissioning (see Chapter 10, page 29).

8 Disposal

Dispose of the SecurePlus System components as electrical waste at an appropriate collection point. Remove the button cell batteries from the seats and dispose of them separately at an appropriate collection point. According to German legislation, electrical waste must not be disposed of as household waste.

For other countries, adhere to the local regulations for the disposal of electrical waste and batteries.

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9 Faults and Troubleshooting

9.1 Troubleshooting Table



WARNING

Risk of severe injury and material damage if repair work is carried out incorrectly.

Therefore:

- Only allow specialist personnel to carry out repair work.

If faults occur when operating the SecurePlus System, proceed as described in the following troubleshooting tables. Contact the AMF-Brunns GmbH & Co. KG customer service department or your local dealer if faults are encountered which cannot be remedied using the information and measures given in the table (see Chapter 10, page 29).

Fault	Possible Cause	Remedial Measures
The display unit shows nothing after the ignition has been switched ON.	The fuse has blown.	Replace the fuse in the vicinity of the battery.
	The cabling is defective.	Have the cabling repaired.
	The display unit is defective.	Have the display unit replaced.
A seat symbol blinks, the text "LOW BATTERY" appears.	The button cell battery on the seat is weak.	Have the button cell battery changed (see Section 9.2, page 26).
More seat icons are shown on the display unit than the number of compatible seats that are fitted to the vehicle.	A connected seat has been removed but is still in the vicinity of the vehicle.	Increase the distance between the vehicle and the seat that has been removed or reset the connection to the seat (see #Installation Instructions).

Fault	Possible Cause	Remedial Measures
Less seat icons are shown on the display unit that the number of compatible seats that are fitted to the vehicle.	A seat fitted to the vehicle has not been connected.	Set up a connection to the seat (see Installation Instructions).
	A seat fitted to the vehicle is out of range of the Bluetooth receiver.	Position the seat closer to the Bluetooth receiver or have additional Bluetooth receivers fitted (Customer Service, see Chapter 10, page 29).
	The button cell battery on the seat is flat.	Have the button cell battery changed (see Section 9.2, page 26).
	After changing the battery, the transmitter unit on the seat is in the deep-sleep mode.	Activate the transmitter unit and set up a connection to the seat (see Installation Instructions).
	The wireless connection is disrupted by screening.	Bypass or remove the source of screening (e.g. a wall between the transmitter unit and the Bluetooth receiver).
An occupied seat is shown on the display unit as unoccupied.	The occupant of the seat is too light.	Ignore the display.
	The function of the seat sensor is impeded by a cushion or a child seat.	Ignore the display.
	The seat sensor is defective.	Have a new seat sensor fitted.



Fault	Possible Cause	Remedial Measures
An unoccupied seat is shown on the display unit as occupied.	An item has been left on the seat and has triggered the indication.	Remove the item from the seat.
	The seat sensor is defective.	Have a new seat sensor fitted.
A person not wearing a seat belt is shown as wearing a seat belt.	The seat belt latch sensor is defective.	Have the seat belt latch replaced.
A person wearing a seat belt is shown as not wearing a seat belt.	The seat belt latch sensor is defective.	Have the seat belt latch replaced.

9.2 Replacing the Button Cell Battery in the Seat



DANGER

Risk of fatal injury through swallowing button cell batteries.

The button cell batteries fitted to the seats can become accessible when seats are rotated, folded or removed from the vehicle. There is a risk of poisoning or fatal injury if button cell batteries are swallowed.

Therefore:

- Make certain that button cell batteries cannot be swallowed by children or people with mental disabilities.



WARNING

Risk of severe injury and material damage if work on the seats is not carried out correctly.

Therefore:

- Only allow specialist personnel to replace the batteries.



NOTE

The service life of the button cell battery is designed to be six years. This is a guide and not a guaranteed life span.

If a seat icon on the display unit blinks, the button cell battery in the transmitter unit in the seat must be replaced for new. Do this as follows:

- ⇒ Unfasten the seat from the floor of the vehicle.
- ⇒ Position the seat, such that the underside is accessible.
- ⇒ Push the transmitter unit to one side, out of its holder on the frame of the seat.
- ⇒ Disconnect the connector on the seat connection cable from the transmitter unit.

Pull out the red locking lug on the connector to enable this (see yellow arrow in Figure 5).



Figure 5: Connector Locking Lug

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- ⇒ Open the transmitter unit housing.

Do this by carefully releasing the lateral retaining lugs and pulling the housing off (see red circles in Figure 6 left-hand image).

- ⇒ Remove the button cell battery from its holder (see Figure 6 centre and right-hand images).

- ⇒ Fit the new button cell battery, type CR2477X.

When doing so, make sure that the battery is inserted the right way round.

- ⇒ Refit the housing, making certain that the latching lugs engage.



Figure 6: Opening the Transmitter Unit and Removing the Battery

- ⇒ Connect the connector on the seat connection cable to the transmitter unit.
- ⇒ Push the red locking lug on the connector back in.
- ⇒ Push the transmitter unit back into its holder.
- ⇒ Fasten the seat to the floor of the vehicle.

10 Electrical Circuit Diagrams

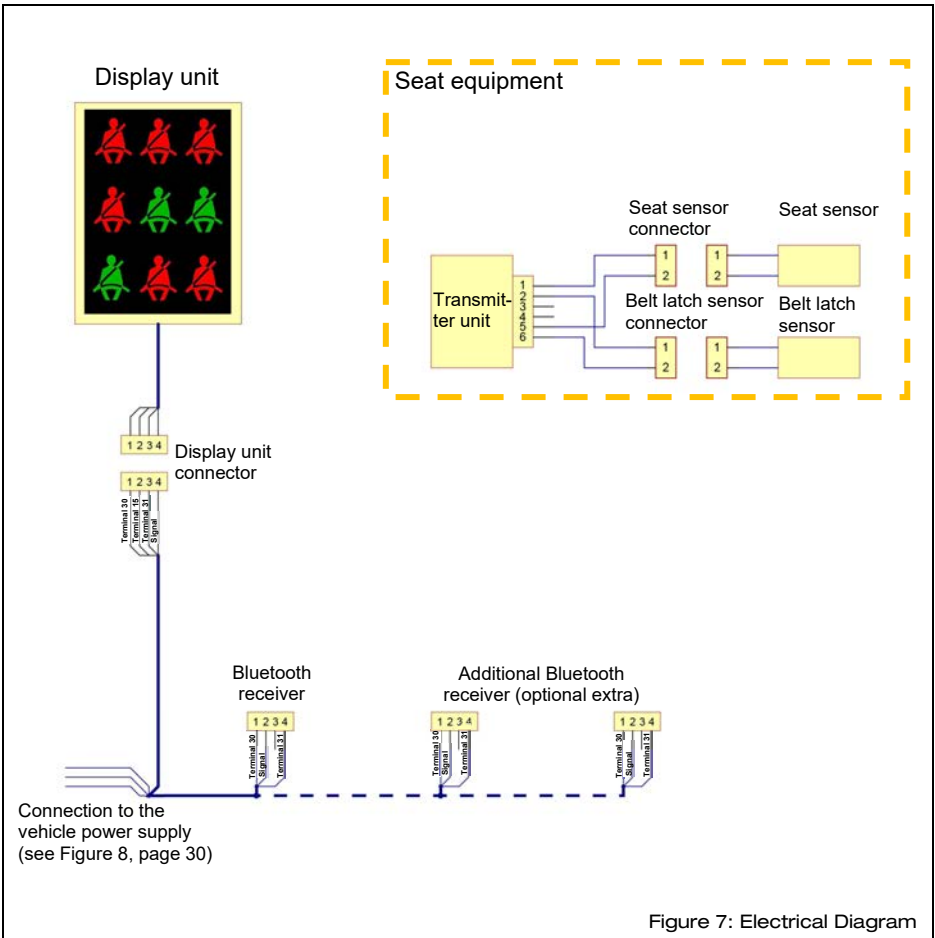


Figure 7: Electrical Diagram

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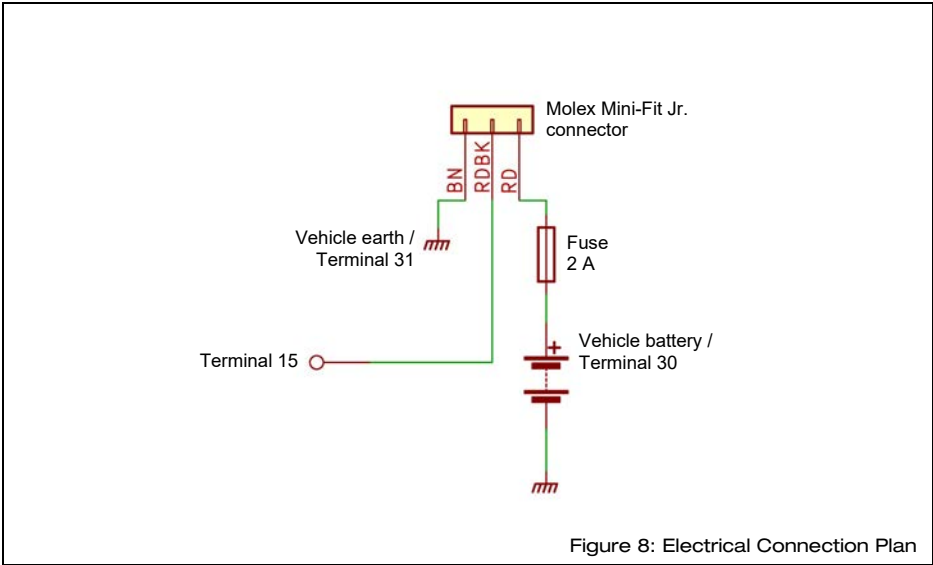


Figure 8: Electrical Connection Plan

Abbreviation (acc. to IEC 60757)	Colour
BN	Brown
RD	Red
RDBK	Red-Black

11 Customer Service

Contact your local dealer to order spare parts, for maintenance and repair work or if you have any problems or queries.

In addition to this, the AMF-Bruns GmbH & Co. KG customer service is also available to you. Enquiries can be made in either the German or English language.

The address of the customer service is:

AMF-Bruns GmbH & Co. KG
Hauptstraße 101
D – 26689 Apen

Tel.: +49 (0) 44 89 / 72 72-22

Fax: +49 (0) 44 89 / 62 45

service.hubmatik@amf-bruns.de

www.amf-bruns.de



NOTE

Guarantee work on the SecurePlus System must only be carried out with the prior agreement of AMF-Bruns GmbH & Co. KG.

The costs of such work will not be accepted by AMF-Bruns without prior agreement.



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