



Translation of Original Operating Instructions

Variable Message Sign

SpeedSign SMD 750

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1 General information

1.1 Information about these operating instructions

These operating instructions provide important information on handling the equipment. All technical data in these instructions have been developed or compiled with the greatest of care. Errors cannot however be excluded. We therefore feel obliged to point out that neither guarantee nor any legal responsibility nor any sort of liability can be accepted for consequences as a result of incorrect data. We are always glad to be informed of any errors.

Adherence to the specified safety instructions and handling instructions is a precondition for safe work. In addition, it is mandatory to observe the local accident prevention regulations and general safety requirements applicable at the location where the equipment is used.

Carefully read through the operating instructions before beginning any work!

It is a constituent component of the product and must be kept carefully available in the immediate vicinity of the equipment at all times for the personnel. If you sell or subcontract this product, it is essential to hand over these instructions as well. The figures in this manual are not necessarily true to scale in order to show details better and can vary slightly from the actual configuration.

1.2 Explanation of symbols

1.2.1 Symbols used in these operating instructions

Warning instructions Warning instructions are identified by symbols. They are also prefaced with signal words that indicate the extent of the hazard.

- It is essential to follow all instructions!
- Always act cautiously during all work in order to avoid accidents, injury to personnel and material damage!

DANGER!



... indicates imminent danger that can lead to death or to serious injury if it is not avoided.

CAUTION!



... indicates a possible dangerous situation that can lead to minor or slight injury if it is not avoided.

ATTENTION!



... indicates a possible dangerous situation that can lead to material damage if it is not avoided.

Tips and recommendations

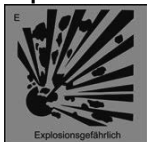
NOTE!



... highlights useful tips and recommendations as well as information for more efficient and troublefree operation.

1.2.2 Symbols on the equipment

Explosive substances



... indicates containers that hold substances at risk of explosion.

Keep away from all sources of ignition (e.g. naked flames, sources of heat, electrical equipment that is not explosion-proof)

Do not smoke!

Do not carry out any activities that generate sparks such as welding, cutting, or grinding!

Fire, naked light and smoking forbidden



... indicates areas with high risk of burns and explosions.

Keep all sources of ignition away from these areas (e.g. naked flames, sources of heat, electrical equipment that is not explosion-proof)!

Do not smoke!

Do not carry out any activities that generate sparks such as welding, cutting, or grinding!

1.3 Limitation of liability

All data and instructions in this manual were compiled in accordance with the applicable standards and regulations, the state-of-the-art and our many years of know-how and experience.

The manufacturer accepts no liability for damages due to:

- non-compliance with the manual
- non-designated use
- deployment of untrained personnel
- unauthorized alterations
- technical modifications
- use of non-approved spare parts

The actual scope of delivery can vary from the explanations and illustrations described here for special versions, the purchase of additional order options, or due to latest technical changes.

In addition, the obligations agreed in the procurement contract, the General Terms & Conditions and the delivery conditions of the manufacturer and the legal regulations in force at the time of the contract conclusion apply.

Warranty

The manufacturer guarantees the functionality of the applied technology and the declared performance parameters. The warranty period begins from the point in time of the free-of-defects acceptance.

Wearing parts

Wearing parts are all components that come into immediate contact with the material to be worked on or processed. These components are excluded from the guarantee and claims for defects if this involves damage due to wear.

1.4 Warranty conditions

The warranty conditions are included in the sales documentation as a separate document.

Generally valid:

Alterations and technical modifications which have not been certified by Adolf Nissen Elektrobau void all warranty claims.

1.5 Spare parts

WARNING!

Risk of injury due to incorrect spare parts!



Incorrect or defective spare parts can lead to damage, malfunction or complete failure and can greatly compromise safety. For this reason:

- Only use original spare parts!
- Original spare parts can be purchased directly from the manufacturer (for the address, see last page).

1.6 Customer Service

For technical information, please contact our Customer Service. Instructions on the regionally responsible contact partner can be obtained at any time per telephone, fax, e-mail or via the Internet (for the address, see last page). In addition, our employees are constantly interested in any new information and experience that result from the application and that may be valuable for improving our products.

1.7 Copyright protection

This manual is only intended for personnel who are engaged with the equipment. The manual must not be handed over to third parties without the written approval of the manufacturer.

NOTE!



The contents, data, texts, drawings, photographs and other illustrations are copyright-protected and are subject to industrial property protection. Any improper use will be liable to prosecution. Reproduction in of any shape or form - in whole or in part - and the utilisation and/or disclosure of its contents are not allowed without a written declaration of consent from the manufacturer. Violation will lead to claims for damages. All other rights are reserved.

2 Safety

This section provides an overview of all important safety aspects for optimum protection of personnel and for safe and troublefree operation. Non-compliance with the handling instructions and safety instructions listed in this manual can lead to significant danger.

2.1 Responsibility of the operator

The equipment is designed for use in the industrial sector. Consequently, the operator of the equipment is liable for the legal obligations of safety at work. Apart from the safety at work instructions in these operating instructions, the safety, accident prevention and environmental protection regulations in force for the field of application of the equipment must be observed.

In particular, the operator must:

- inform himself of the applicable industrial safety regulations.
- carry out a risk assessment to determine any additional dangers that result from the special working conditions at the place of use of the equipment.
- convert the necessary conduct requirements for operation of the equipment at the place of use into operating instructions.
- regularly check that the operating instructions created by him are up to date with the current state of the regulations during the entire period of use of the equipment.
- update the operating instructions - as necessary - to new regulations, standards and operating conditions.
- clearly delegate the responsibilities for installation, operation, maintenance and cleaning of the equipment.
- ensure that all employees who are involved on or with the equipment have read and understood the operating instructions. In addition, he must train the personnel at regular intervals in how to deal with the equipment and inform them of the possible dangers.
- provide the prescribed and recommended protective gear to the personnel charged with carrying out the work.

The operator is also responsible for ensuring that the equipment

- is always in a technically perfect condition.
- is maintained according to the specified maintenance intervals.
- and that all safety installations are checked regularly for completeness and functionality.

2.2 Personnel requirements

2.2.1 Qualifications

WARNING!

Risk of injury due to insufficient qualification!



Improper handling can lead to considerable injury to personnel and damage to material.

For this reason:

- Only allow activities to be carried out by suitably qualified personnel.

The following qualifications for different fields of activity are named in the operating instructions:

Instructed personnel

- have been instructed by the operator on the tasks assigned to them and on the potential dangers of improper conduct.

Specialist personnel

- are in a position to carry out the work assigned to them as a result of their technical training, know-how and experience as well as knowledge of the current regulations and are able to independently recognise and avoid possible dangers.

Electricians

- are in a position to carry out the work on electrical systems as a result of their technical training, know-how and experience as well as knowledge of the current standards and regulations and to independently recognise and avoid possible dangers. Electricians are trained for the specific place of use in which they are active, are trained and are familiar with the relevant standards and regulations.

Only persons who can be expected to reliably carry out their work are sanctioned as personnel. Personnel whose ability to react is affected, for example, by drugs, alcohol or medications will not be tolerated.

When selecting personnel, observe the regulations regarding age and vocation-specific regulations applicable at the place of use.

2.2.2 Unauthorized persons

WARNING!

Danger to unauthorized persons!



Unauthorized persons who do not fulfil the requirements described here are not aware of the dangers in the working area.

For this reason:

- Keep unauthorized persons away from the working area.
- In case of doubt, speak to these persons and expel them from the working area.
- Interrupt the work as long as unauthorized persons are present in the working area.

2.3 Personal protective gear

When dealing with SpeedSign SMD 750, especially in public road traffic, personal protective gear must be worn in order to minimise health hazards.



For this reason:

- Before all work, properly put on the respective protective gear as described and wear it during the work.
- It is also essential to follow all signs affixed in the working area regarding personal protective gear.

Recommended protective gear

In addition to the prescribed personal protective gear, it is recommended to wear the following protective gear:

Reflective warning vest



or wear reflective warning clothing in order to be more clearly visible for others. In particular, wear reflective warning clothing:

- while working in the vicinity of railway tracks,
- during maintenance and when securing vehicles on public roads,
- during roadwork: all personnel who are in the vicinity of public road traffic,
- when marshalling construction traffic. Dispose the reflective warning clothing after use or have it professionally cleaned to maintain visibility.

2.4 Designated use

The equipment is designed and constructed exclusively for the intended purpose described here. The variable message sign SpeedSign SMD 750 is intended for the protection of persons and material and for displaying advance direction signs and hazard warnings ahead of approved construction sites in public road traffic.

WARNING!

Danger through non-designated use!



Any use that goes beyond the designated use and/or different use of the equipment can lead to dangerous situations.

For this reason:

- Only use the equipment as intended
- Strictly observe all data in these operating instructions.
- In particular, refrain from the following uses. They are considered as non-designated use:
- Alteration, conversion or changes to the construction or individual accessory parts with the aim of changing the application or use of the equipment.

Claims of any type as a result of damage from non-designated use are excluded.

All damage from non-designated use is the sole liability of the operator.

2.5 Special risks

Residual risks that were determined based on a risk analysis are listed in the following section.

It is essential to follow the instructions listed here and the safety instructions in the further chapters of these instructions for use in order to reduce possible health hazards and to avoid dangerous situations.

Electric current:

DANGER!

Danger to life from electric current!



Contact with live parts can cause imminent danger to life.

Damage to the insulation or individual components can have life threatening consequences.

For this reason:

- If the insulation is damaged, immediately switch off the power supply and arrange for repair.
- Only allow work on the electrical system to be carried out by electricians.
- Before all work, isolate the electrical system from the mains. Check that it is free of voltage!
- Before regular servicing, cleaning and repair work, switch off the power supply and secure against being switched on again.
- Never bridge fuses or render them inoperative.
- When replacing fuses, check that the value of the amperage is correct.
- Protect live parts against moisture and conductive dust as these can lead to short circuit.

Electrical cables and power supply lines:

Danger!

Danger to life from defective lines!



Line defects can cause electric shocks and can lead to mortal injury.

For this reason:

- All connections and connections must be firmly attached and free from corrosion.
- Lines must be secured at their connection points by a strain relief.
- Only use cables for the approved intended purpose according to their quality.
- Always select the cable cross-section with sufficient thickness for the power consumption.
- Make sure the earth conductor is correctly connected.
- Protect cables and power lines against heat, oil, dust and aggressive media.
- Lay cables and lines so there is no danger of tripping. Do not route them along sharp edges or around pointed corners. Avoid chafing, kinks and crushing.
- When using cables, do not leave them wound on rolls, drums or in loops.
- Never use cables for carrying equipment or tools!
- Do not pull out power connectors from the mains socket by their cables.
- Check cables and power connectors for their condition before use. Do not use if damaged! Have them immediately repaired or renewed by specialists.
- Always secure cables and power lines under voltage in such a way that they cannot cause any danger or injury and cannot be damaged.

Rechargeable batteries

WARNING!

Risk of injury due to incorrect handling of batteries!



If improperly handled, installed batteries can release hazardous substances or explode.

For this reason:

- Do not throw batteries into the fire or expose them to high temperatures. There is a risk of explosion.
- Do not touch any escaping liquid. If this liquid comes into contact with the skin, immediately rinse copiously with water.
- If liquid gets into the eyes, immediately rinse the eyes with water for at least 10 min and immediately contact a doctor.
- Carefully remove any escaping liquid with a suitable absorbent cloth and dispose of it in an environmentally compatible way. Wear protective gloves!

Debris and scattered objects

CAUTION!

Danger of tripping on debris and scattered objects!



Debris and scattered objects constitute slip and trip hazards and can result in significant injury.

For this reason:

- Always keep the work area clean.
- Remove objects that are no longer required.
- Indicate trip hazards with yellow and black marking tape.

Sharp edges and pointed corners

CAUTION!

Risk of injury on edges and corners!



Sharp edges and pointed corners can cause grazes and cuts to the skin. For this reason:

- When working in the vicinity of sharp edges and pointed corners, proceed with care.
- In case of doubt, wear protective gloves.

Signs

WARNING!

Risk of injury through unreadable symbols!



Stickers and signs can become soiled or unrecognizable as time passes. For this reason:

- Always keep safety, warning and operating instructions in a clearly legible condition.
- Immediately renew any signs or stickers that are damaged or unrecognisable.

2.6 Securing against being switched on again

DANGER!

Risk of injury through unauthorised switch-on!



While working on the equipment, there is a danger from unauthorised switch-on of the power supply. This presents a significant risk of injury for the persons in the danger zone. For this reason:

- As a basic principle, disconnect the battery before all cleaning, servicing and maintenance work.

2.7 Environmental protection

CAUTION!

Danger to the environment through incorrect handling!



Improper handling or improper disposal of environmentally hazardous substances can result in significant damages to the environment. For this reason:

- Attention must be paid to the following instructions:
- If hazardous substances permeate into the environment, immediately initiate suitable countermeasures.
- Immediately inform local environmental and/or local authorities.

The following environmentally hazardous substances are used:

Batteries or rechargeable batteries

Batteries and rechargeable batteries contain toxic heavy metals. They are subject to treatment as hazardous waste and must be handed over to communal collection points or disposed of by a specialist company.

2.8 Conduct in case of danger and accidents

When using the variable message sign SpeedSign SMD 750 always observe the regulations applicable to public road traffic. When using the variable message sign SpeedSign SMD 750 always adhere to the general and specific regulations applicable to construction sites as well as local regulations for construction site protection, accident prevention and the performance of rescue measures.

In addition, the following apply as a basic principle:

Preventive measures

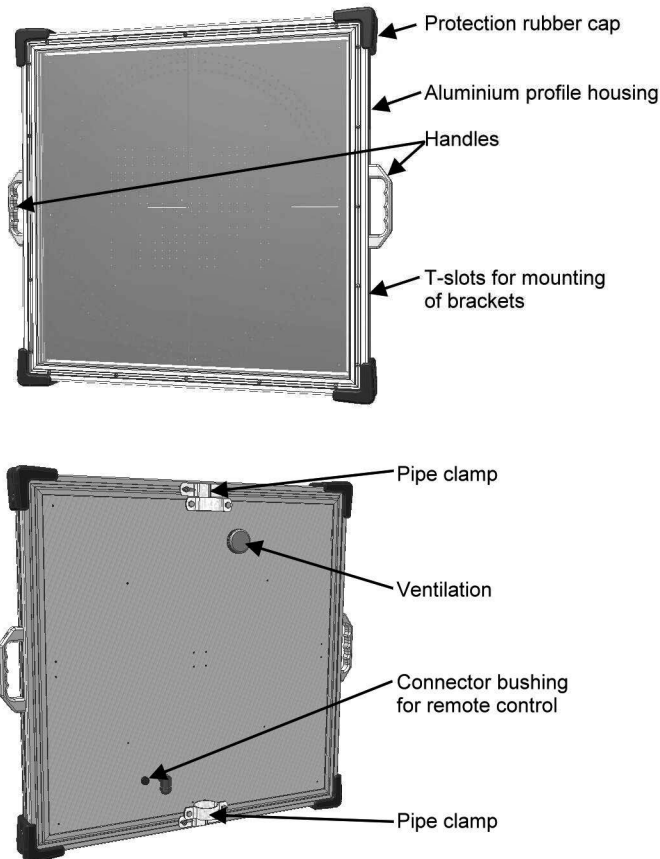
- Always be prepared for accidents or fire.
- Keep first aid equipment (first-aid kit, blankets, etc.) and fire extinguishers freely accessible at all times.
- Make personnel familiar with accident notification, first aid and rescue facilities.
- Keep access routes free for rescue vehicles.

If worst comes to worst: take appropriate action

- Cordon off the accident site.
- Commence first-aid measures.
- Rescue persons from the danger zone.
- Inform those responsible at the place of use.
- Alarm doctor and/or fire brigade.
- Keep access routes free for rescue vehicles.

3 Construction and function

SpeedSign SMD 750 consists of a steady aluminium profile housing which contains the LED tiles and the control unit. The present T-slots in the aluminium profile enable a direct mounting of bracket and handles on the housing.



To start SpeedSign SMD 750 connect it to a battery. Take care of the right voltage (12/24V) and assignment of the battery poles.

Connect the remote control at the rear panel of the housing for switching on/off SpeedSign SMD 750 or changing the display (Eco-Remote II / Standard-/Pro-Remote II).

Always switch SpeedSign SMD 750 off by using the remote control. Avoid switching off by disconnecting the battery.

SpeedSign SMD 750 can display different speed limits.

CAUTION!

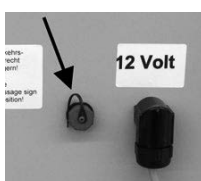


When connecting to the vehicle power supply or other electrical systems secure SpeedSign SMD 750 against short circuit!

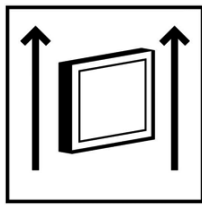
WARNING!



When SpeedSign SMD 750 is connected to a battery a previously set symbol can be displayed. To avoid incorrect information always control which symbol is indicated.



Rear connection for remote control.



ATTENTION!



The variable message sign SpeedSign SMD 750 must be installed and stored vertically!

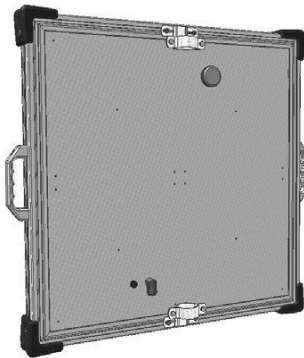
3.1 Bracket

SpeedSign SMD 750 offers the possibility to fasten the mounting slip-on type directly at the profile frame. Therefore T-slots are included at the rear panel. By using thread T-nuts optional accessories can be fastened variably and safely.

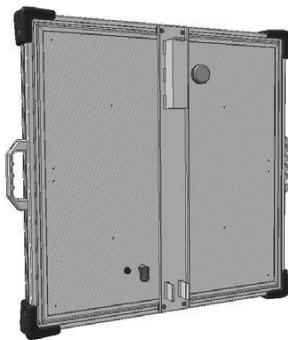
ATTENTION!



Take care of the right screw length regarding the T-slots when mounting the accessories!



SpeedSign 750 SMD with clamps for tubes with d= 60 mm (standard).



SpeedSign 750 SMD with mounting slip-on type for square tubes 40x40 mm (optional).

3.2 Accessories

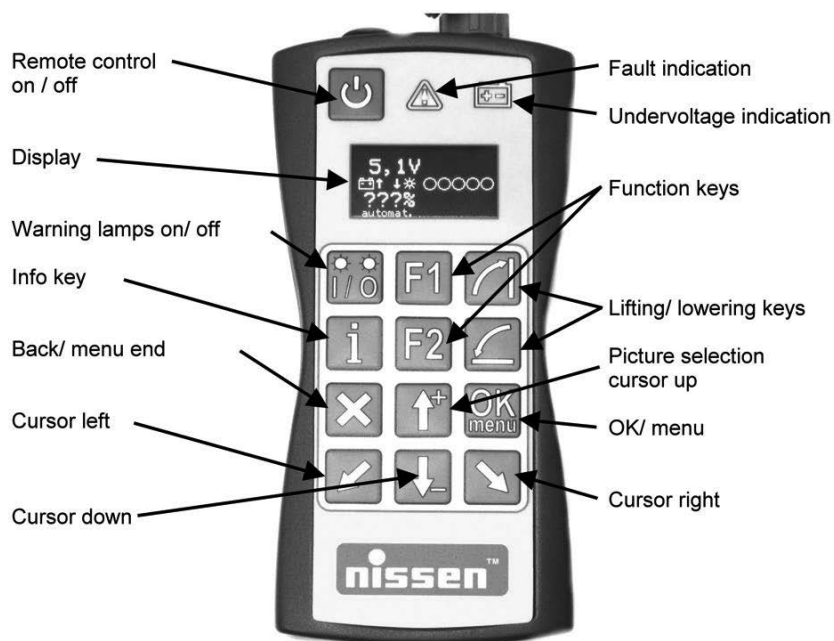


Remote control with connecting cable
(Eco-Remote II, Standard-/ Pro-Remote II).














Mounting slip-on type for posts 40x40 mm
including spacer.

3.3 Remote control Eco-Remote II

The remote control is equipped with a graphical self-luminous LCD display and a membrane keyboard. The display shows the status of the system, battery voltage and brightness.



Assignments of keys:

	On/Off	Pressing this key (approx. 1 sec.) switches the remote control on/off.
 	Function keys F1/F2	This key can be assigned with a picture speed selection (see menu - setting - speed selection). Press these keys until the symbolic clock has run down (approx. 1 sec.).
 	Lifting/lowering keys	Pressing one of these keys lifts/lowers the upper warning board (if available). Press these keys until the symbolic clock has run down (approx. 1 sec.).
	Warning lamps on/off	Pressing this key switches the warning lamps on/off (if available). Press this key until the symbolic clock has run down (approx. 1 sec.).
	Picture selection/ Cursor up	Pressing this key starts the picture selection. This key is also used for selecting different menus.
	Info	Pressing this key opens the information menu. Pressing this key approx. 1 second switches to the display mode.
	Cursor down	This key can be assigned with a picture speed selection (see menu - setting - speed selection). Press this key until the symbolic clock has run down (approx. 1 sec.).
	Cursor left	This key can be assigned with a picture speed selection (see menu - setting - speed selection). Press this key until the symbolic clock has run down (approx. 1 sec.).
	Cursor right	This key can be assigned with a picture speed selection (see menu - setting - speed selection). Press this key until the symbolic clock has run down (approx. 1 sec.).
	Back/ menu end	Pressing this key ends an open menu item. This key can also be used for a picture speed selection (see menu - setting - speed selection). Press this key until the symbolic clock has run down (approx. 1 sec.).
	OK/ menu	Pressing this key opens the menu of the remote control. Selected menu items or programs are confirmed by this key.

Picture selection:

To load a picture:

1. Press [**↑**].
2. Select the requested picture from the display by using the cursor keys [**↑**], [**↓**].
3. Confirm with [**OK**].
4. The picture is loaded.

ATTENTION!





The remote control has an operating temperature of -25° to +85°C.

Menu:

Pressing the key **[OK]** opens the setting menu of the remote control. Several submenus can be selected and confirmed here with the cursor keys.

Information	Shows the actual status of the software and fault reports.
Language	The following languages are available for selection: German; English; French; Spanish. Select the language with the cursor keys [↑] , [↓] and confirm with [OK] .
Display	<p>Brightness Adjust the brightness of the display with the cursor keys [↶], [↷] resp. [↑], [↓] and confirm with [OK].</p> <p>Lighting The keyboard lighting can be switched on/off or its brightness can be changed.</p> <p>Mode The display mode can be switched from simple to extended.</p>
Settings	<p>Function (pin: 9999)</p> <ul style="list-style-type: none"> • Rampe Direct • LED-Matrix/ MultiSign • Light Arrow • Triangle • Sign 615 • Prism Sign <p>Dimmer Automatic: The brightness of the lamps is regulated automatically. Manual: The brightness of the lamps can be regulated manually (10-100%).</p> <p>Speed selection (only possible at function: LED-Matrix/ MultiSign) The keys [F1], [F2], [↶], [↓], [↷], [X] can be assigned with a speed selection function. Therefore mark the requested key with cursor [↑], [↓] and confirm with [OK]. Select with cursor key [↑], [↓] the requested picture from the display and confirm with [OK]. The picture number of the speed selection key appears next to the corresponding key. The corresponding picture number appears behind the key. Select picture 0 to deactivate the speed selection. For speed selection press the key until the symbolic clock has run down (approx. 1 sec). At function Rampe Direct, Light Arrow, Triangle, Sign 615 and Prism Sign the speed selection keys are preset automatically!</p> <p>Restore parameter (PIN1111) Parameters are reset to factory settings.</p> <p>Radio ID not necessary.</p>
Parameter	Factory setting (PIN-number requested).
End	Confirm with [OK] to quit the menu.

Fault indication:

	Low voltage indication	The LED of the undervoltage indication blinks when the power supply sinks below a special value. In addition the default report is shown in the menu "Information".
	Fault display	The LED of the fault indication blinks when the power supply is low (lamps are switched off) or one of the lamps fails. In addition the default report is shown in the menu "Information".

Automatic parameter adjustment:

Eco-Remote II supports an automatic parameter adjustment with the operated system from firmware version 3.00 and higher. Is a different configuration detected when starting Eco-Remote II, select where the configuration shall be transmitted.

[F1]: Remote control • stores all data from the system to the remote control.

[F2]: Master circuit/lamp 1 • stores all data from the remote control to the system.

The system is ready for operation now.

NOTE!



Upon delivery the system is configured correctly but the remote control can contain different settings. Is a different configuration detected when starting a new system for the first time, choose „F1: remote control new" for the transmission of the right adjustments to the remote control.

Attention:

In most cases option **[F1]** is chosen. **[F2]** is only needed when a circuit board was replaced. Choosing the wrong option can cause the loss of all settings and the function of the system!

NOTE!

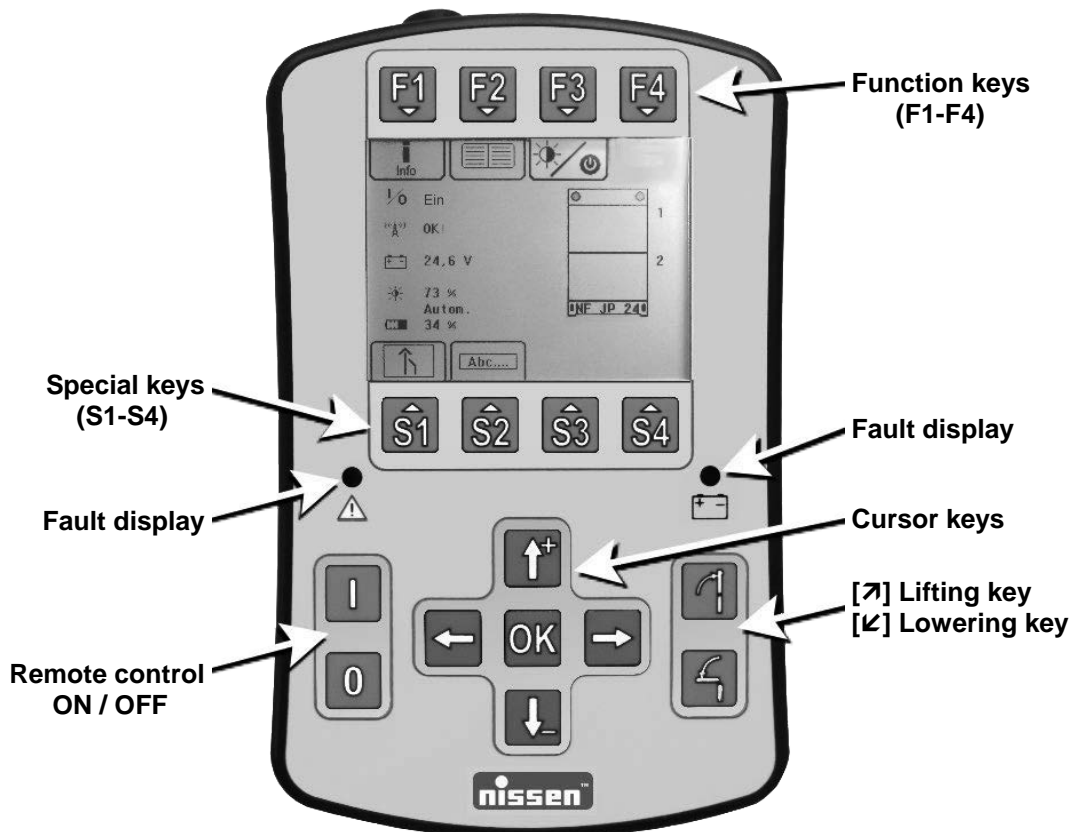


If the query is repeated at every start of the system although no settings were changed, choose **master circuit/lamp 1** new once.

3.4 Remote control Standard-/Pro-Remote II (optional)

The remote control is equipped with a graphical LCD display with LED backlighting, touchscreen display and an illuminated membrane keyboard. The remote control is optionally available with cable/ radio connection (Pro-Remote II). The current status of the variable message sign, for example, is indicated on the right side of the display. Information indicated on the left shows the status of the battery voltage, brightness, data connection and whether the device is switched on or off.

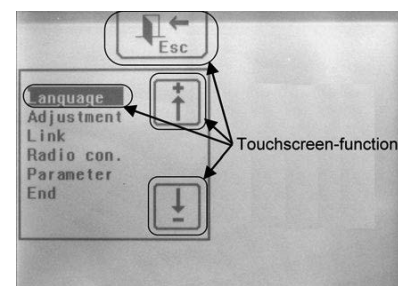
Key functions:



Touchscreen display:

The touchscreen display enables many inputs to be made directly on the display in parallel to the membrane keypad. The functions of the membrane keypad are not affected!






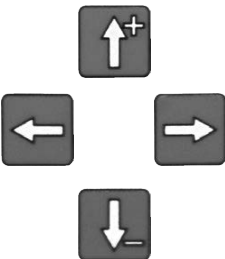

Example of touchscreen area (varies according to the graphic displayed):



CAUTION!



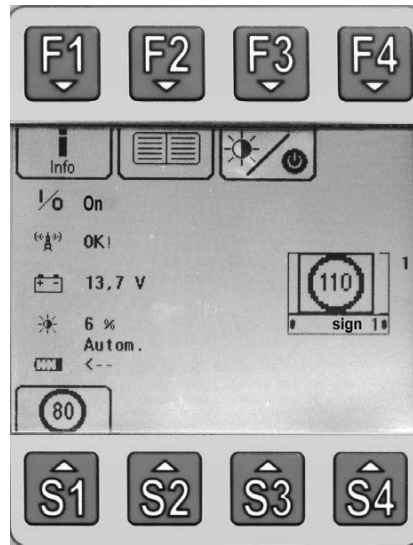
Never operate the touchscreen display with hard, sharp or pointed objects!

	Function keys The function of these keys can change depending on the type of operation and is indicated by a symbol on the display under each of the keys.
	Special keys The main function of these keys is to select the system to be displayed. Other functions of the keys are indicated by a symbol on the display above each of the keys.
	On key Pressing this key switches the remote control on.
	Off key Pressing this key (approx. 2 seconds) switches the remote control off. Keeping the key pressed for longer = Reset.
	Lifting/Lowering keys These keys are only used for lifting or lowering the warning board.
	Control keys for selecting different functions.
	Input key This key is used to complete and confirm the input.







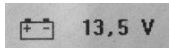
The remote control has an operating temperature of -25° to +85°C.

3.4.1 Main menu

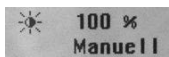


The symbol displayed on a warning panel or an LED panel can vary depending on the version!

 OK! or  ??? indicates the status of the data connection between the remote control and SpeedSign SMD 750. If OK is displayed, the data connection has been established. If ??? is displayed, the data connection is faulty. In the case of radio remote controls, the  symbol is replaced by .



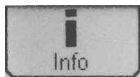
Indicates the battery voltage of the LED panel.



Indicates the brightness of the SpeedSign SMD 750 in %. In systems with a tunnel dimmer, reference is also made to the status of the light-sensitive switch (automatic or manual).



Battery symbol for remote controls with radio. This symbol indicates the status of the battery integrated in the remote control, each line that appears on the symbol represents approx. 20% battery capacity. This value is also displayed directly behind the symbol. An incremental symbol indicates that the battery is charging. If the battery is indicated as a full symbol with 100% level, the charging process is complete.



The **[F1]** key can be used to display information, e.g. program and version number of the remote control and the SpeedSign SMD 750. In the case of faults, information on the type of fault is displayed here. In this case, the symbol flashes (see also "Fault display").



The **[F2]** key is used to go to the Settings menu where the contrast, language, etc. can be set (see also "Settings menu").



The **[F3]** key is used to switch the following functions on or off:
Dimmer function automatically/manually (optional), light arrow/variable message sign on/off, warning lamps on/off, switching function (optional).



Cancel function. This key can be used to cancel a selected function at any time without any changes being made.

The right side of the image contains a schematic illustration of a variable message sign, for example, and indicates the chosen symbol.

The figures beside the scheme refer to the special keys which can be selected. These are used for selecting e.g. warning signs, lane regulation or additional texts.



Special key **[S1]** leads to the submenu in which the requested symbol can be selected.

Special keys **[S2] [S3] + [S4]** are not assigned in this example.

The indication fields show the actual function of the corresponding special key below.

After pressing the requested special key the first eight preview images are indicated in the subsequent submenu.

The symbol/text which is needed can be selected via corresponding function key or special key.

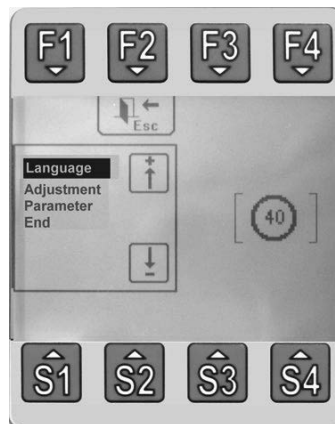
NOTE!



The symbols that are displayed vary according to the type of device and equipment!

3.4.2 Setting menu

Pressing the **[F2]** function key in the main menu opens the **setting menu**.



Select the setting to be changed with the arrow keys **[↑]**, **[↓]** and activate it by pressing **[OK]**.

Language

User language

The following languages are available for selection: German, English, French, Italian, Danish, Dutch, Czech, Swedish, Spanish, Polish and Russian.
Select the language with the arrow keys and confirm with **[OK]**.

Settings

Display and key settings

Selection options for:

- **Contrast**
- **BL display** (brightness of display lighting)
- **BL keys** (brightness and switch off-function)
- **Touch** (adjustment of display)
- **Touch I/O**
- **Selection** (Pro-Remote II only)
- **Automatic switch-off**
- **Escape**

Select the required item with **[↑]**, **[↓]** and confirm by pressing **[OK]**. Adjust the brightness or contrast with **[↑]**, **[↓]** and confirm by pressing **[OK]**. Use the **[OK]** key to adopt the changed values. Then complete the setting and leave the menu item with **"Esc"**.

"BL display"

Select the brightness of the display lighting with the arrow keys and confirm with **[OK]**.

Setting of switch off function of display lighting:

- | | |
|------------------------|--|
| [S1] = active | • lighting switches off after 1 minute, when no key is pressed |
| [S1] = inactive | • lighting stays switched on permanently |

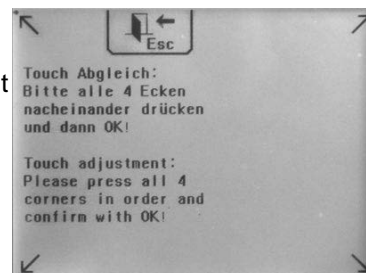
"BL keys"

Select the brightness of the display lighting with the arrow keys and confirm with **[OK]**.

Setting of switch off function of key lighting:

- | | |
|------------------------|---|
| [S1] = active | • lighting switches off after 1 minute, when no key is pressed |
| [S1] = inactive | • lighting stays switched on permanently |
| [S2] = active | • lighting switches off when controller measures a brightness of 100%, under 100% switches lighting automatically on. |
| [S2] = inactive | • lighting is not affected by the measured brightness of the controller |

In the **"Touch"** setting press all four corners of the touchscreen consecutively after the other in order to readjust the touchscreen display. Usually this is only necessary the first time it is put into service! The yellow low voltage indicator lamp flashes briefly to indicate that the individual corners have been correctly pressed. Then press the **[OK]** key to confirm.



In the **"Touch I/O"** setting the function of the touchscreen can be switched on/off. The selected function is displayed in the info menu **[F1]**.

In the **"Selection"** setting the function of key **[F4]** can be blocked so that only one system can be operated with the remote control.

Multiple: Several systems can be operated with one remote control. Selection of the system with key **[F4]**

Single: Only **one** system can be operated with the remote control. Key **[F4]** for selection of the system is blocked.

"Automatic switch-off" of the remote control means that the remote control is switched off to save energy as soon as the light arrow has been folded down, for example, the battery in the radio remote control does not charge, or no key has been pressed.

The **"Autom. off"** function and the **[←], [→]** keys can be used to select a runtime of between 15 and 240 minutes (the factory setting is 120 minutes).

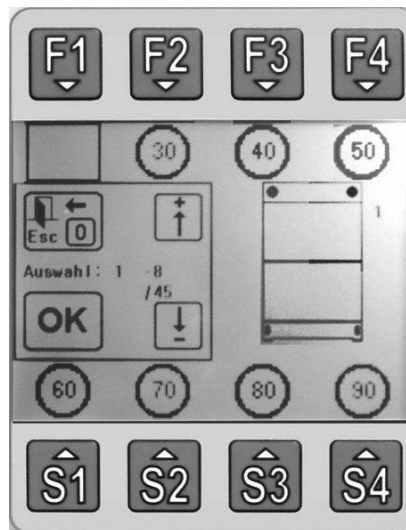
Radio link In this setting a search is made for a Bluetooth connection that is then selected (Pro-Remote only).

Parameters **Matching the remote control and system to be operated.** These parameters are preset in the factory. The settings menu can only be accessed by authorised service personnel who enter a PIN.

Restore parameter **Restore parameter (from Standard-Remote version 7.50)** Reset all parameters of the system to factory settings. Only select this point when the parameters of the system have been changed by mistake. Choose the setting point and confirm with **[OK]**. Enter the **PIN 1111** with the keys **[S1] - [S4]** and confirm with **[OK]**. The factory set parameters are now reloaded and transferred to the system and the remote control. If this process has been successful the display shows "successful" if not the message "error" appears. A possible error could be that the version (V 5.10) used in the control does not support this function or the factory setting has not been made.

End **Ending the settings menu** The settings menu must always be left via this menu item. The "F2" key must only be used for cancelling the setting process.

3.4.3 Selection of the symbols




(Sample display, symbols may vary)

In the middle of the left side the numbers of the symbols shown in the next submenu are indicated, as well as the complete number of available symbols. For example, 1 - 8/45 means symbols 1 to 8 of totally 45 symbols.

By pressing an **[F]** or **[S]** key the corresponding symbol in the middle of the display is indicated enlarged. This symbol can be transferred to e.g. the variable message sign / light arrow by pressing **[OK]**.

The arrow keys **[↑]**, **[↓]** are used to scroll in the submenus. Arrow key **[←]** is used for jumping to the beginning, arrow key **[→]** is used for jumping forward by 40 symbols.

When a symbol is selected and confirmed by **[OK]** it appears immediately e.g. on the variable message sign or light arrow. The remote control returns to the main menu.

By pressing **[0]** or  the symbol selection can be cancelled without making any changes.


A "+" is indicated in the preview image when a link is established. It is possible to select whether the complete link or only the indicated single symbol shall be loaded.

3.4.4 Light sensitive switch

Pressing the **[F3]** function key in the main menu selects the light-sensitive switch (in the "Pro-Remote II" then select the "Dimmer" menu and confirm with **[OK]**).

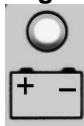
Select between **"Automatic"** or **"Manual"** with the **[↑]** **[↓]** arrow keys and then confirm with **[OK]**. In the **"Automatic"** position, the brightness of the SpeedSign SMD 750 is automatically adjusted by the system. In the adjustment range the brightness of the SpeedSign SMD 750 is regulated between 8% at an ambient brightness less than 10 Lux and 100% at a brightness greater than 5000 Lux.

In the **"Manual"** position the brightness of the SpeedSign SMD 750 can be manually adjusted in a range between 5% and 100% with the **[↑]** **[↓]** arrow keys and completed with **[OK]**.

Press the **[F2]**  key to cancel the process without changing the previous setting.

3.4.5 Fault displays

Low voltage battery



The yellow LED on the right above the battery symbol signals that the batteries of the light arrow are 80% depleted. When using new GEL batteries with 210 Ah operating times* up to 2 hours can be reached after signalisation. The LED also lights when the battery integrated in the radio remote control Pro-Remote is depleted. The remaining time can be significantly reduced for used and not properly maintained batteries.
* operating time at 20°C

Fault on the device



In the case of all other malfunctions not related with a low voltage supply, the red LED on the left above the Attention sign lights.

Calling up fault information

Information on all faults can be called up with the **[F1]** function key. The first display after pressing **[F1]** indicates the component on which the fault has occurred (e.g. "Remote control" or "Sign 1"). Further detailed information on the type of fault can be requested by selecting with **[↑]** , **[↓]** and confirming with **[OK]**.

3.4.6 Maintenance

The battery of the remote control must be charged at regular intervals (see the battery symbol on the display). The operating time during radio operation with the integrated battery is 12 hours. As soon as the remote control is placed on the charging station, it is charged by an automatic battery charger. If there is a cable connection, the remote control is charged via the cable connection. The charge status is indicated by an incremental battery symbol on the display. If the symbol is static at 100%, the battery is fully charged.

3.4.7 Error Messages

Occurring errors are transmitted directly to the remote control and displayed there on the LCD display.



WARNING! An error in the SpeedSign SMD 750 can substantially affect public road safety and must therefore be remedied immediately!

A current error is indicated by the red LED of the error display and the flashing information symbol **[F1]**. In order to receive more detailed information regarding the respective error the **[F1]** key must be pressed.

Error Message Undervoltage:

When the voltage falls below 11,6 V the error indicator (red LED) lights in addition to the undervoltage warning (yellow LED). Also the information symbol **[F1]** flashes on the display.

When key **[F1]** is pushed the error "undervoltage" is displayed.

When the voltage falls below 11,2 V the LED signs are deactivated in order to avoid switching errors.

4 Transport and storage

4.1 Transfer / delivery

Upon arrival immediately check the delivery for completeness and transport damages.
If you register visible transport damages, proceed as described below:

- Do not accept delivery or only accept it with reservation.
- Record the scope of damages on the transport documents or on the carrier's note of delivery.
- Initiate a complaint.

NOTE!

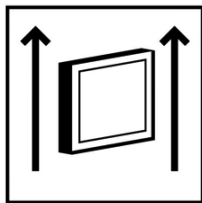


Make a claim for every defect as soon as it is recognised. Claims of damages can only be made within the applicable warranty period.

4.2 Storage

When not in use store the variable message sign SpeedSign SMD 750 under the following conditions:

- Do not store outdoors, protect against permanent humidity and condensate.
- Store dirt and dust free.
- Do not expose to aggressive media.
- Protect against intense sun radiation.
- Avoid long lasting mechanical vibrations.
- Storage temperature: 15 to 35 °C
- Relative humidity: maximum 60%
- For storage longer than 3 months:
 - check the general condition of all parts regularly.
 - If necessary apply, refresh or renew suitable preservation.
 - Regularly charge or remove batteries.
 - Store NiNa Guard always vertically.



ATTENTION!



The variable message sign SpeedSign SMD 750 must be installed and stored vertically!

5 Maintenance

5.1 Safety

Basics:

WARNING!

Risk of injury through improperly carried out maintenance work



Improper maintenance can lead to severe injury to personnel or material damage.
For this reason:

- Before beginning work, make sure there is sufficient space for installation.
- Ensure orderliness and cleanliness at the installation location! Loose components and tools that are lying on top of one another or scattered about are sources of accidents.
- If components were removed, make sure the new components are correctly installed, install all attachment elements again and follow the tightening torque specification for screws.

Personnel:

Unless otherwise specified, maintenance work can be carried out by the operator.
As a basic principle, work on the electrical system must only be carried out by electricians.

Personal protective gear:

For maintenance work at the place of use, the following protective gear is also recommended:

- Reflective warning vest

DANGER!

Mortal danger due to electric current



Contact with live components results in mortal danger. Activated electric components can carry out uncontrolled movements and cause serious injuries.

For this reason:

- Switch off the electricity supply before beginning work and secure against being switched on again.

DANGER!



Mortal danger due to unauthorised switch-on!

During maintenance work there persists danger due to unauthorised switch-on of the power supply.

For this reason:

- Switch off the main switch before starting work.

Environmental Protection:

Observe the following regarding environmental protection during maintenance work:

Batteries:

Batteries contain toxic heavy metals. They are subject to treatment as hazardous waste and must be handed over to communal collection points or disposed of by a specialist company.

5.2 Maintenance work

5.2.1 Cleaning

Regularly check the equipment for soiling.
If there is any soiling on the surface:

1. Switch off the equipment and secure against being switched on again.
2. Properly remove any soiling. While doing so, pay attention to the following:
 - Do not use aggressive cleaning agents or additives. Only sponge down the equipment with clear water.
 - Do not use hard sponges, scouring cloths or brushes. Only wipe the equipment with soft cloths.
 - Dispose of cleaning cloths and processing residues in an environmentally compatible manner and in compliance with applicable local regulations.
 - After cleaning work, check that all previously opened covers and safety installations have been properly closed again and are functioning.

DANGER!



Danger of damage to components!

Rough or careless work methods can lead to damage to components and even complete breakdown of the device.

For this reason:

- Be careful when cleaning the device.
- Do not touch with sharp tools or blow with hard compressed air jet.
- Do not touch with electric and electronic components.

5.2.2 Maintenance of the batteries

NOTE!



*The batteries supplied by Nissen together with the standard equipment are maintenance-free.
When using other batteries it may be necessary to measure the acid level in regular periods and refill water.
In this case observe the instructions supplied by the battery manufacturer!*

WARNING!

Battery acid!



When charging and handling rechargeable batteries, there is a danger of severe chemical burns!
For this reason:

- Do not touch any escaping liquid. If it comes into contact with the skin, immediately rinse with much water.
- If liquid gets into the eyes, immediately rinse the eyes with water for at least 10 min and immediately contact a doctor.
- Carefully remove any escaping liquid with a suitable absorbent cloth and dispose of it in an environmentally compatible way.
- Wear personal protective gear (safety goggles, gloves).

WARNING!

Hydrogen gas!



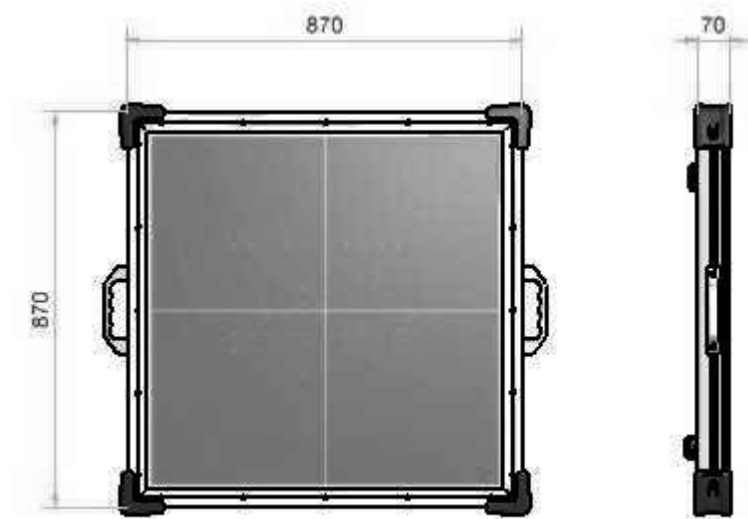
When loading and handling rechargeable batteries, there is a danger of escaping hydrogen gas!
For this reason:

- Keep all sources of ignition away (e.g. naked flames, sources of heat, electrical equipment that is not explosion-proof) !
- Do not smoke!
- Do not carry out any welding, cutting and grinding work!

The battery pole and battery terminals must be regularly cleaned so that the thin oxide layer cannot form any contact resistances that can lead to voltage losses.

6 Technical data

Measurements:



Weight: approx. 18 kg

Operating voltage: 12 V DC

Power consumption: approx. 0,3 - 4 A (depending on the displayed symbol and environment brightness)

7 Disassembly and disposal

7.1 Safety

Basics:

WARNING!

Risk of injury through improper disassembly!



Stored residual energies, components with sharp edges, points and corners of individual components or on the required tools can cause serious injury.

For this reason:

- Before beginning the work, make sure there is sufficient space for installation.
- Be careful with open, sharp-edged components.
- Ensure orderliness and cleanliness at the installation location! Loose components and tools that are lying on top of one another or scattered about are sources of accidents.
- Professionally disassemble components in compliance with applicable local regulations.
- Always secure components in such a way that they cannot fall down or fall over.
- If you are uncertain, please contact the manufacturer.

Personnel:

Disassembly must only be carried out thoroughly trained and experienced specialists.
Work on the electrical system must only be carried out by electricians.

Electrical systems:

DANGER!

Danger to life from electric current!



Contact with live components results in danger to life.

Switched-on electrical drives can cause components to go into uncontrolled motion and cause very serious injuries.

For this reason:

- Before beginning disassembly, switch off the electrical power supply.
- Disconnect all connections from the mains.

7.2 Disassembly

Before beginning the disassembly:

- Switch off the system and secure against being switched on again.
- Physically disconnect the entire power supply from the equipment and discharge stored residual energy.

Then professionally clean modules and components and disassemble in accordance with accepted local safety at work and environment protection regulations.

7.3 Disposal

If no take back or disposal agreement was made, take disassembled component parts to the recycling depot:

- Dispose of metallic residual component parts as scrap metal.
- Take plastic parts to the recycling depot.
- Sort and dispose of other components according to the properties of the material.

CAUTION!

Damage to the environment from improper disposal!



Electronic scrap, electronic components, lubricants and other auxiliary substances are liable to treatment as hazardous waste and must only be disposed by approved specialised companies!

Local authorities and specialist disposal companies can provide information on environmentally compatible disposal.



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