

Sound-Booster

Amplifier for control modules
with sound output

Manual



Item number
72-08017

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Printing the manual

The formatting is optimised for double-sided printing. The standard page size is DIN A5. If you prefer a larger display, printing on DIN A4 is recommended.

1. Getting started

The instructions will help you step by step with the safe and proper installation and use of your sound-booster. Before you start to put the sound-booster into operation, read this manual completely, especially the safety instructions and the section on possible errors and their elimination. You will then know what you have to pay attention to and thus avoid errors that sometimes can only be rectified with a lot of effort.

Keep the instructions in a safe place so that you can restore functionality later in the event of any malfunctions. If you pass the sound-booster on to another person, also give the instructions with it.

1.1. Contents of the package

- 1 sound-booster (item no. 72-08017-01)
- 1 socket connector with cables (3-pin)

1.2. Intended use

The sound-booster is intended for use in model construction, especially in model railway layouts, according to the specifications in the manual. Any other use is not in accordance with the intended use and will result in the loss of the warranty claim. Intended use also includes reading, understanding and following all parts of the instructions. The sound-booster is not intended to be used by children under the age of 14.

1.3. Safety instructions

Improper use and non-observance of the instructions can lead to incalculable hazards. Prevent these dangers by carrying out the following measures:

- Only use the sound-booster in closed, clean and dry rooms. Avoid moisture and splash water in the environment. After condensation has formed, wait two hours for acclimatisation before use.
- Disconnect the sound-booster from the power supply before carrying out wiring work.
- Supply the sound-booster only with extra-low voltage as specified in the technical data. Use only tested and approved transformers / power supply units.
- Only plug the mains plugs of transformers / power supply units into properly installed and fused earthed sockets.
- When making electrical connections, ensure that the cable cross-section is sufficient.
- Heating of the sound-booster during operation is normal and harmless.
- Do not expose the sound-booster to high ambient temperatures or direct sunlight. Observe the information on the maximum operating temperature in the technical data.
- Regularly check the operational safety of the sound-booster, e.g. for damage to the connection cables.
- If you notice damage or if malfunctions occur, disconnect the connection to the power supply immediately. Send the sound-booster in for inspection.

2. Operation overview

The sound-booster amplifies and filters the acoustic signals that are present at the sound output of a control module. The filter is designed to reduce the distortion of noises such as

- sirens,
- horns or
- ringing when a railway barrier closes.

The signals are reproduced via the built-in loudspeaker. The volume can be adjusted using a trim potentiometer.

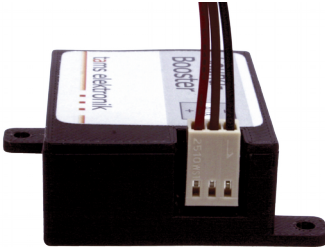
Suitable control modules

The sound-booster is intended for connection to the following control modules:

- LC-NG modules (Light Computer Next Generation) with loudspeaker output:
 - LC-NG-05 "Road traffic" (item no. 53-0405x)
 - LC-NG-06 "Emergency vehicle" (item no. 53-0406x)
 - LC-NG-08 "Fire station" (item no. 53-0408x)
- SD-32 | 2-fold servo control for analogue and digital model railways (Article No. 43-0032x)

3. Connections

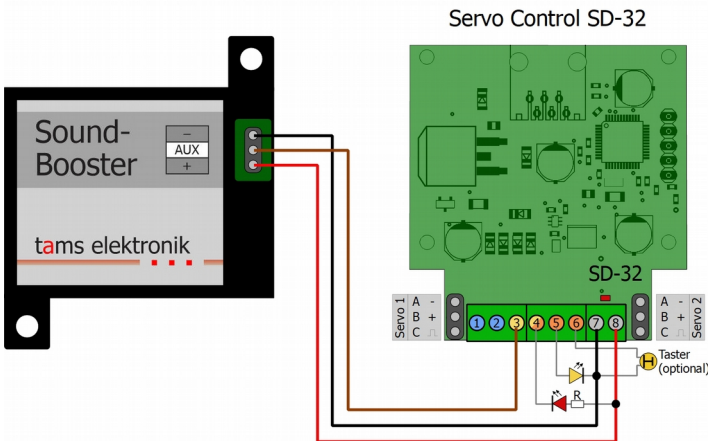
A 3-pin socket strip with cables is included for connecting the sound-booster to the control module. The socket strip is designed so that it can only be plugged into the 3-pin connector strip of the sound-booster in one direction.



Plug the socket strip onto the pin header of the sound-booster and make the connections to the control module (SD-32 servo controller or LC-NG module) according to the connection diagram and the table.

The sound-booster does not require a separate power supply. It is supplied via the connected control module (SD-32 servo controller or LC-NG module).

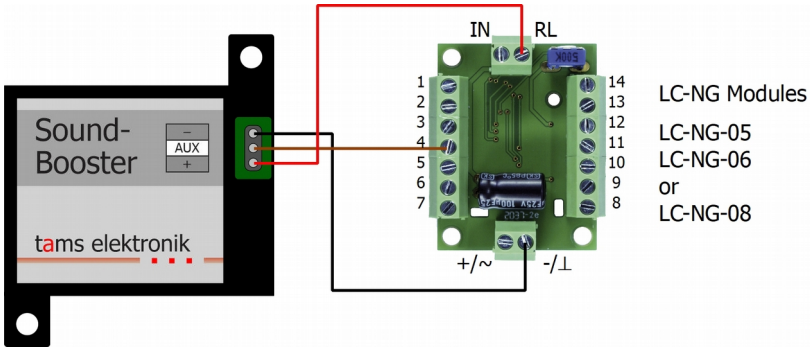
3.1. Connection to the SD-32 servo control module



Note: The connection diagram shows all the connections required for using the SD-32 servo control module in barrier mode (incl. LEDs and optional button).

	sound-booster	SD-32	<p>⚠ Please note:</p> <p>If the "-" (black) and "+" (red) connections of the sound-booster are connected to the SD-32 servo control module the wrong way round, both modules may be damaged when put into operation or, in the worst case, irreparably destroyed.</p>
	-	7	
	AUX	3	
	+	8	

3.2. Connection to a LC-NG module



	sound-booster	LC-NG module	⚠ Please note:
	-	-/⊥	If the "-" (black) and "+" (red) connections of the sound-booster are connected to the LC-NG module the wrong way round, both modules may be damaged when put into operation or, in the worst case, irreparably destroyed.
	AUX	4 (loudspeaker)	
	+	RL	

3.3. Adjusting the volume



The housing of the sound-booster has a hole on the back behind which the trim pot for adjusting the volume is located. Use a small screwdriver to adjust the volume.

4. Checklist for troubleshooting and error correction



Warning:

If you notice a strong heat development, immediately disconnect the connection to the supply voltage. **Fire hazard!**

Possible causes:

- One or more connections are faulty. → Check the connections.
- The sound-booster and/or the control module is/are defective. → Send in the sound-booster and the control module for inspection/repair.

No sound playback:

- The lowest possible volume is set on the trim potentiometer. → Check the volume setting.
- The "AUX" connection of the sound-booster is not connected to the sound output of the control module, but to another output. → Check the connection and correct it if necessary.
- The output of the control module is defective. → Send in the control module and the sound-booster for testing.
- The "+" and "-" connections of the sound-booster are connected the wrong way round to the connections of the control module. → Check the connections and correct them if necessary. If no sound can be heard after the connections have been corrected, the sound-booster and/or the control module have been damaged due to the incorrect assignment of the connections when put into operation. → Send the sound-booster and the control module in for inspection/repair.

4.1. Technical Hotline

If you have any questions about the use of the sound-booster, our technical hotline will help you (telephone number and e-mail address on the last page).

4.2. Repairs

You can send us a defective sound-booster for inspection / repair (address on the last page). Please do not send us your return freight collect. In the event of a warranty or guarantee claim, we will reimburse you for the regular shipping costs.

Please enclose the following with your shipment

- proof of purchase as evidence of any warranty or guarantee claim
- a brief description of the defect
- the address to which we should return the product(s)
- your email address and/or a telephone number where we can reach you in case of queries

Costs

The inspection of returned products is free of charge for you. In the event of a warranty or guarantee claim, the repair and return are also free of charge for you.

If there is no warranty or guarantee case, we will charge you the costs of the repair and the costs of the return. We charge a maximum of 50% of the new price for the repair according to our valid price list.

Carrying out the repair(s)

By sending in the product(s), you give us the order to inspect and repair it. We reserve the right to refuse the repair if it is technically impossible or uneconomical. In the event of a warranty or guarantee claim, you will then receive a replacement free of charge.

Cost estimates

Repairs for which we charge less than € 25.00 per item plus shipping costs will be carried out without further consultation with you. If the repair costs are higher, we will contact you and carry out the repair only after you have confirmed the repair order.

5. Technical data

Inputs

Number of inputs	1 (for connection to the sound output of a control module)
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Electrical properties

Power supply	12 – 20 V direct voltage (provided by the control module)
Current consumption	approx. 20 mA

Protection

Protection class	IP 20 Meaning: Protected against solid foreign bodies with diameter ≥ 12.5 mm and access with a finger. No protection against water.
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Environment



For use in closed rooms

Ambient temperature during operation	0 ~ + 30 °C
Permissible relative humidity during operation	10 ~ 85% (non-condensing)
Ambient temperature during storage	- 10 ~ + 40 °C
Permissible relative humidity during storage	10 ~ 85% (non-condensing)

Other features

Dimensions incl. housing	approx. 48 x 37 x 18 mm
Weight	sound-booster incl. housing: approx. 23.5 g 3-pin socket strip with cable: approx. 4.5 g

6. Warranty, EU conformity & WEEE

6.1. Guarantee bond

For this product we issue voluntarily a guarantee of 2 years from the date of purchase by the first customer, but in maximum 3 years after the end of series production. The first customer is the consumer first purchasing the product from us, a dealer or another natural or juristic person reselling or mounting the product on the basis of self-employment. The guarantee exists supplementary to the legal warranty of merchantability due to the consumer by the seller.


The warranty includes the free correction of faults which can be proved to be due to material failure or factory flaw. With kits we guarantee the completeness and quality of the components as well as the function of the parts according to the parameters in not mounted state. We guarantee the adherence to the technical specifications when the kit has been assembled and the ready-built circuit connected according to the manual and when start and mode of operation follow the instructions.

We retain the right to repair, make improvements, to deliver spares or to return the purchase price. Other claims are excluded. Claims for secondary damages or product liability consist only according to legal requirements.

Condition for this guarantee to be valid, is the adherence to the manual. In addition, the guarantee claim is excluded in the following cases:

- if arbitrary changes in the circuit are made,
- if repair attempts have failed with a ready-made module or device,
- if damaged by other persons,
- if damaged by faulty operation or by careless use or abuse.

6.2. EU Declaration of Conformity

 This product fulfils the requirements of the following EU directives and therefore bears the CE marking.

2001/95/EU Product Safety Directive

2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

2014/30/EU on electromagnetic compatibility (EMC Directive). Underlying standards:

DIN-EN 55014-1 and 55014-2: Electromagnetic compatibility - Requirements for household appliances, electric tools and similar electrical appliances. Part 1: Emitted interference, Part 2: Immunity to interference

To maintain electromagnetic compatibility during operation, observe the following measures:
Only connect the supply transformer to a professionally installed and fused earthed socket.
Do not make any changes to the original components and follow the instructions, connection and assembly diagrams in this manual exactly.
Only use original spare parts for repair work.

6.3. Declarations on the WEEE Directive

This product is subject to the requirements of the EU Directive 2012/19/EC on Waste Electrical and Electronic Equipment (WEEE), i.e. the manufacturer, distributor or seller of the product must contribute to the proper disposal and treatment of waste equipment in accordance with EU and national law. This obligation includes

- registration with the registering authorities ("registers") in the country where WEEE is distributed or sold
- the regular reporting of the amount of EEE sold
- the organisation or financing of collection, treatment, recycling and recovery of the products
- for distributors, the establishment of a take-back service where customers can return WEEE free of charge
- for producers, compliance with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive.



The "crossed-out wheeled bin" symbol means that you are legally obliged to recycle the marked equipment at the end of its life. The appliances must not be disposed of with (unsorted) household waste or packaging waste. Dispose of the appliances at special collection and return points, e.g. at recycling centres or at dealers who offer a corresponding take-back service.

Further Information and Tips:
<http://www.tams-online.de>

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