

# INSTRUCTION FOR USE

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GA65GB-12.08



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Short Circuiter for Underground Railways with  
Lateral Current Rail



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Valid are the "General Conditions for the supply of Products and Services of the Electrical and Electronics Industry".

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This instruction for use, specially its safety information, is to be read and to be observed by everyone working with this product !

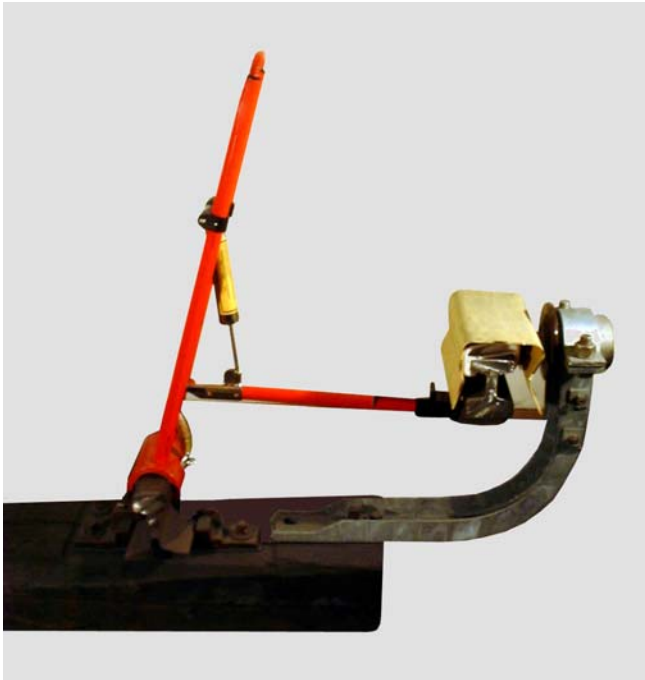
## FIELD OF APPLICATION AND USAGE

This type of short circuiter for underground railways is designed for earthing and short circuiting of running rails with lateral current rail.

In case of maintenance and repair work at the underground railway network the short circuiter prevents an unintended energisation of the current rail.

In case of breakdown of service the short circuiter will earth the current rail by compulsory short circuiting the running rail.

The short circuiter is designed exclusively for the specific requirements of underground railways !



**Short circuiter for underground railway in use**

## SAFETY INFORMATION



### Warning !

All warnings are marked with this symbol. Do not ignore any warning. Failure in observance may lead to injuries or death.



### Attention !

All safety hints are marked with this symbol. Do not ignore any safety hint. Failure in observance may lead to damage of devices or longterm health damages.



### Information !

All information is marked with this symbol. Do not ignore any information. It contains important details to facilitate working and improve apprehension.



### Recommendation !

All recommendations are marked with this symbol. They will contain details for optimum usage of the device.

## Required qualification of operating personnel

Operation and maintenance of this short circuiter is to be carried out only by electricians or specially trained personnel following EN 50110-1 or the standardised safety rules of the respective country.

Further it needs to be secured that before start of work the operating personnel was trained for this operation.

## Prevention of dangers



### Warning !

For prevention of dangers observe EN 50110-1 when using the short circuiter !

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**Observe before use**

The short circuiter is to be used only on railway systems of low voltage electric underground railways and on rail distances according to table page 14.



Before each use the short circuiter is to be examined for faultless condition.



Usage is recommended on bare rail sections, otherwise extensive burning marks on the rail and sparking are to be expected.



Under bad environmental and weather conditions work must not be begun or continued. If necessary work is to be restricted (also see EN 50110-1/ 6.1).

**Observe during usage**

As protection against eventual sparking turn body and face away from short circuiter and, if necessary, wear protective clothing !

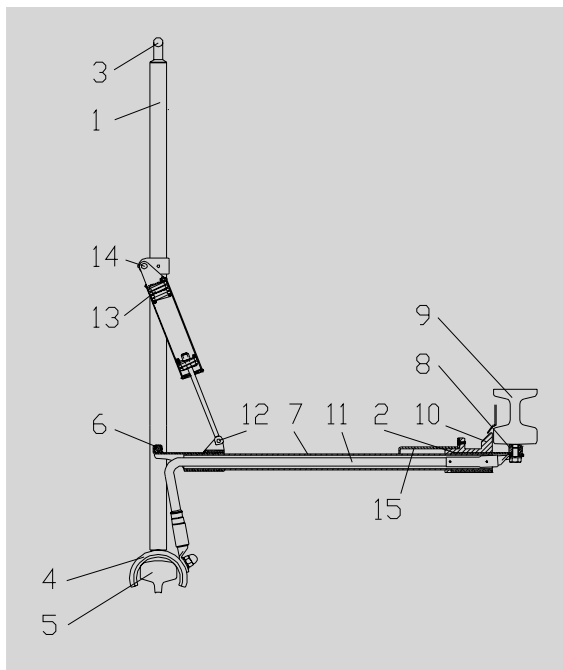


Exclude short circuiter from re-usage after it was charged by a short circuit.

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## Short circuiter in general

The short circuiter is used for earthing and short circuiting of underground railway systems with lateral current rail.



1. Frame of glassfibre-reinforced insulating tube
2. Contact guidance
3. plastic handle
4. Aluminium contact foot
5. Running rail
6. Joint for contact arm
7. Contact arm of glassfibre-reinforced polyester tube
8. E-Cu contact block
9. Current rail
10. Stopper
11. Earthing cable of highly flexible copper lead with transparent PVC-insulation
12. Joint for tension spring
13. Tension spring
14. Joint for tension spring
15. step plate

It is possible that the short circuiter may deviate in a few details from picture above!



## Unpacking and examination

### Unpacking and examination

The short circuiter is packed to protect it against normal impact and transport stress.

Unpack and examine short circuiter as follows:

- Unpack short circuiter and examine if all parts on the despatch note have been received.
- Examine short circuiter for transport damage.  
In case packing has been damaged during transport so that possibly supplied parts are damaged or missing, make a note on the receipt documents.  
Otherwise insurance will not carry the cost for replacement !  
If package is undamaged but supplied parts are damaged or missing, please contact Arcus Schiffmann immediately.

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#### **Recommendation !**



Store packing material for use in case the short circuiter is to be returned to Arcus Schiffmann.

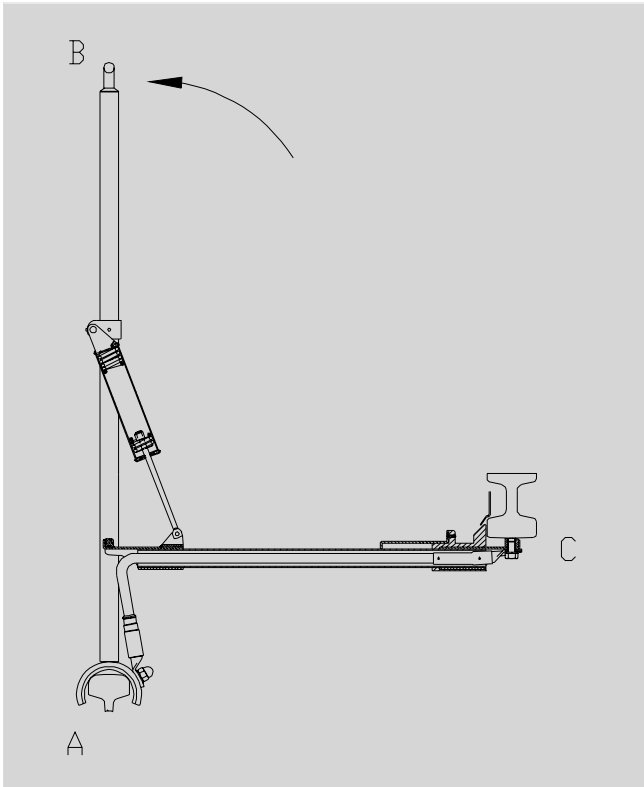
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### Storage

The short circuiter is to be stored clean, dry and in folded condition.

## Operational principle

The short circuiter is set onto the running rail next to the current rail (A). By pulling the handle a spring store which is integrated in the device is prestressed and releases its energy in a sudden (B). This way the contact element which is positioned underneath the current rail hits the current rail in high speed (C). The earth connection between running and current rail closes within few milliseconds. Earth connection within the device is made by highly flexible PVC-coated copper lead.



## Installation



Carry short circuiter to place of operation and unfold it.



Set short circuiter onto running rail as shown in the picture. The contact foot is to contact the rail properly.



Secure distance between current rail and contact block or other conductive parts as large as possible !





Pull handle backwards. This way the contact block will snap to the current rail for full contact.

Let handle go after audible contacting.



If handle is pulled further on there is the danger that contact comes loose again !

### Removal of short circuiter



Hold short circuiter on handle. Press contact arm downwards with your foot on the step plate and unfold the short circuiter. Be sure to stand firmly on the ground ! Afterwards remove short circuiter from running and current rail and fold again.



## Maintenance



For safety reasons the short circuiter is to be handled with care. It is to be examined in detail before each usage. Any damage of the cable insulation, any bare lead exposed or any damage of contact surfaces (burrs, edges or burning marks) is to be considered as heavy damage and reusage is to be excluded.

Generally the short circuiter is maintenance-free. If the short circuiter is stored permanently on a train it will be strained by vibration, acceleration forces and changing climatic influences. For this reason it is recommended to carry out the following examination every two years:

- ◆ visual inspection for loose, faulty or missing parts
- ◆ examination of folding mechanism
- ◆ examination of contact mechanism for perfect function

## Exclusion from reusage



### Warning !

Do not reuse a short circuiter after it was charged with a short circuit !

## Waste disposal

Dispose of short circuiter and packing following the local regulations. Arcus Schiffmann is not liable for improper waste disposal. If uncertain about the materials used, Arcus Schiffmann will be pleased to answer your query.

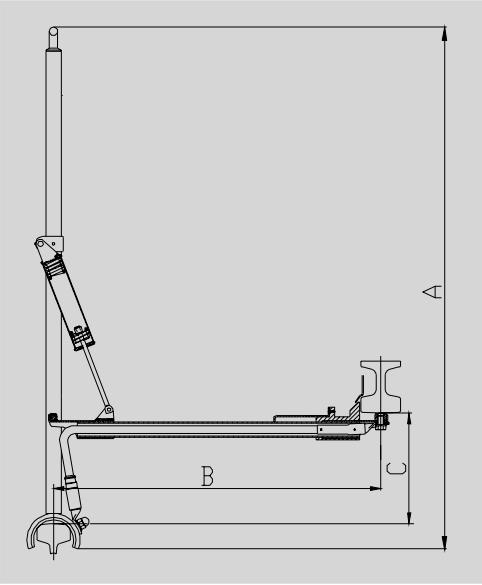
Technical data

Field of usage:

Railway systems with lateral current rail (underground railways)

Application:

Rail systems of electric underground railways with the following distances:



Type No.	A	B	C
515 105	908	594	192
597 114	935	660	150
597 155	975	655	160
597 209	792	452	230
597 450	1200	782	240
597 584	908	594	192
598 365	908	449	200
598 532	994	655	222
598 565	960	652	192
598 651	1133	818	135
598 698	954	512	170
598 739	974	664	169
598 760	904	550	195

## Annexure

### Product liability and guarantee

This instruction for use was written with greatest care and examined before publishing.

Basis for guarantee is the proven observation of this instruction for use for storage, assembly, operation and maintenance.

Valid are the “General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry”.

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