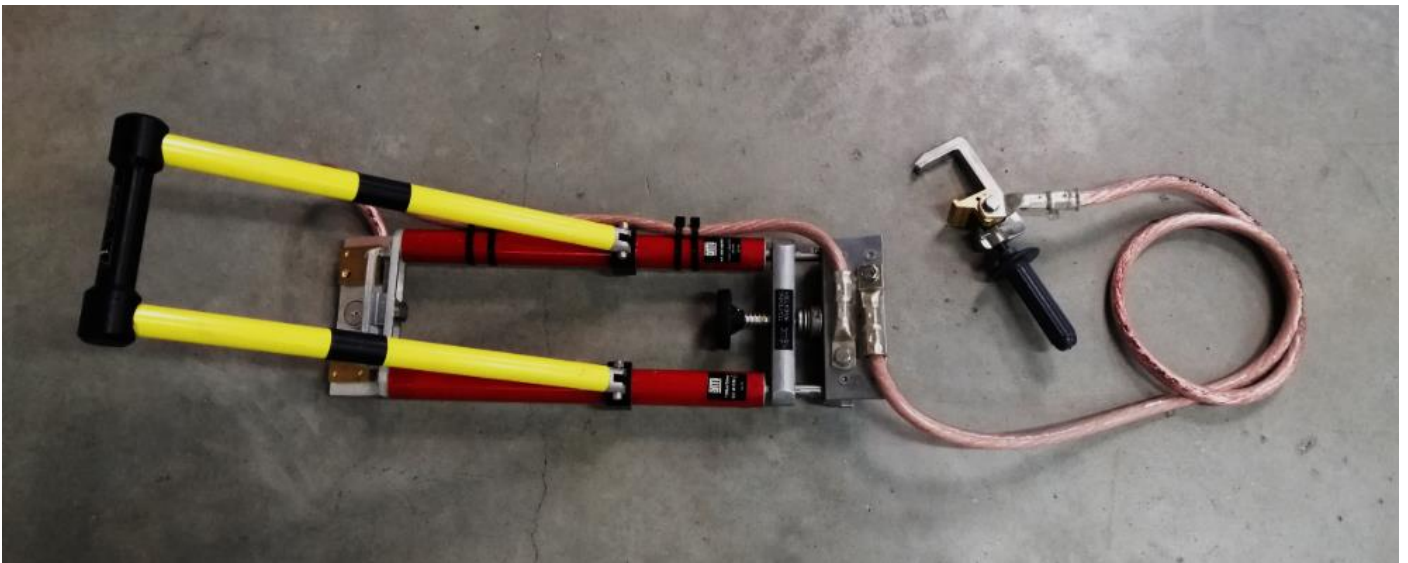




# Earthing rail equipment Third rail configuration

## MT-300/50



## Earthing rail equipment

### INTRODUCTION

---

This equipment is designed to permit safe earthing and short-circuiting between the running rail and the railway lateral current rail.

#### • Materials

- Aluminum contact block for current rail with guiding magnet and brass plate designed to permit safe earthing and short-circuiting between the running rail and the railway lateral current rail.
- Aluminum contact block for current rail with guiding magnet and brass plate
- Flexible copper braid according to IEC-61230 – 120mm<sup>2</sup> 34kA-1s with transparent resistant to temperature variations (-40°C to +60°C)
- Knob for frame adjustment and running rail tightening
- Tubes according to live working IEC 61235 standard hollow tube
- Earth clamp rail (P/N: MT-100/4) to permit the shunt from MT-300/50 onto the furthest running rail.
- Top magnet: 40 mm of diameter, M5 screw type; Force: 550 N



## **OPERATING IN NORMAL CONDITION**

---

Consider the worker is with PPE'S protection.

This equipment is designed to permit safe earthing and short-circuiting of railway systems with lateral current rail.

**BEFORE EACH USE, IT IS CRUCIAL TO CHECK THE ABSENCE OF VOLTAGE\***

\*To do this operation, it is recommended to use a DC voltage detector with the adequate level of voltage.

After verifying the absence of voltage and when the earthing and short-circuiting equipment has been installed, upstream and downstream from the work point and in accordance with the operating instructions, the equipment allows to evacuate a short circuit current of 100 kA for 35 ms equipped with 120mm<sup>2</sup> cable to protect and ensure safety to the operators in case of reconnection.

The complete device has been tested at 106 kA – 39 ms (test report 2019 on request) in accordance with the international standard IEC 61230 equipped with cable 120mm<sup>2</sup>.

## **LIVE SUPPLY SITUATION ON THIRD RAIL DURING INSTALLATION**

---

Consider the worker is with PPE'S protection and trained to manipulate the earthing and short circuiting equipment.

If the power is live on the third rail when the worker install the earthing and short-circuiting equipment ( for example if the worker forget to do the absence of voltage before to install the equipment), the handle permit to the worker to be placed behind the running rail to keep a safety distance between him and the third rail.

When the contact of the equipment will be very close, or will touch the third rail in supply, the worker will create a franc short-circuit coupled with a "dynamic effect" which will repulse the device.

In this situation, the short-circuit will trigger the opening of the protection that will cut off the power of the third rail.

The worker will not be energized or burned because of the safety distance due to the conception of the equipment and due to the fully insulated part of the equipment (tubes are conform to the live working standard of insulation and crunching test IEC 61235)



Note:

To install or uninstall our equipment, the worker is always behind the running rail to respect safety distance.

No need to touch, by hand or by foot, parts of the equipment which would be between the running rail and the third rail. Just touch the handle which is fully insulated.

## **DIMENSIONS / WEIGHT**

---

- Total dimensions in flat position : 900mm – 300mm – 125mm
- Weight of the device ( approx. ) : 12 kg

## **STANDARD REFERENCE**

---

Tested according

IEC 61230 - Live working – Portable equipment for earthing or earthing and short-circuiting: 120mm<sup>2</sup> (34kA -1s)

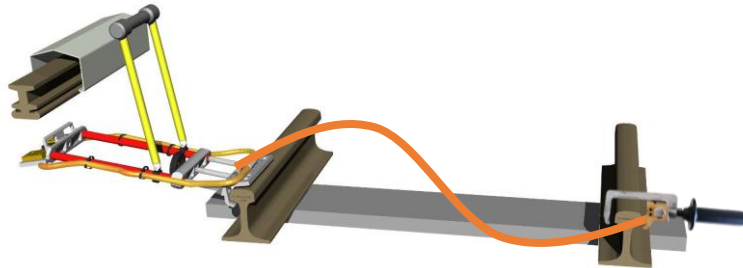
Dielectric test to the complete device equipped with 120mm<sup>2</sup> (106kA-39ms)

IEC 61235 - Live working - Insulating hollow tubes for insulating purposes – IEC 61235 chapter 10.3 –



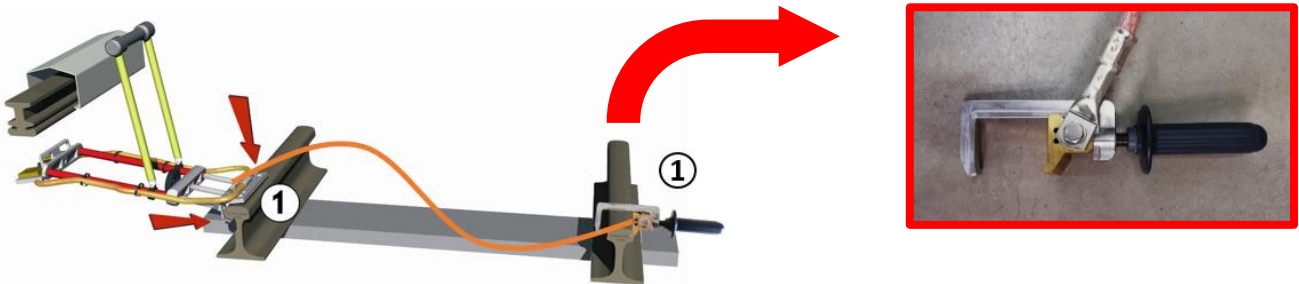
## INSTRUCTION FOR USE

In case of maintenance and repair work on railway network, the MT300/50 will earth the current rail by short-circuiting to the running rail.

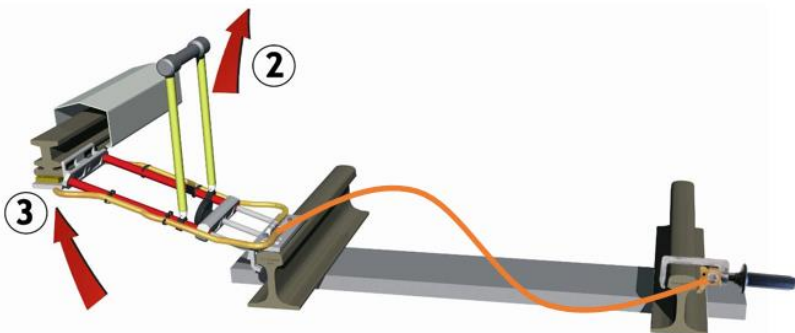


### Operating Instructions

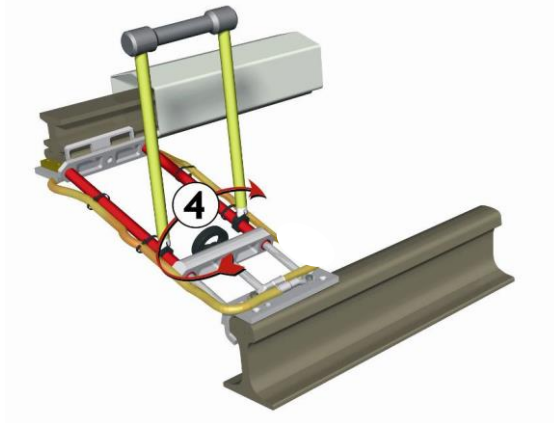
1. The operator should stand in between the running rails. Place the earth rail clamp MT-100/4 on the furthest running rail (on top), place the MT-300/50 device on the other running rail (rail closest to the 3rd rail). The magnet will block the device on the rail (1).



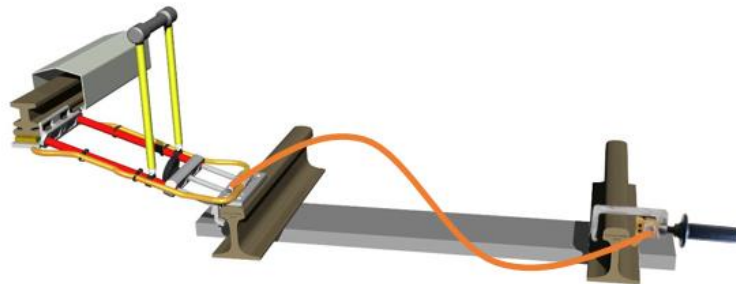
2. Pull up the MT-300/50 device by the handle (2) until the magnet contact blocks and fixes on the current rail (3).



3. Turn the knob in order to firmly fix and hold the earthing system (4).



4. The earthing system is in place and work on railway can start under safe condition.



## **MAINTENANCE & SPARE PARTS**

---

According to IEC 61230 informative annex C:

Verification before use (chapter C.3.2.1 of the standard)

"For safety reasons the equipment should be handled with great care. It should be thoroughly checked before each use.

Any visible damage to contact parts, connections, cable insulation or the presence of a stripped conductor should be considered important and the equipment removed from the service.

Before use, the contact surface should be inspected and cleaned by brushing all residual deposits in order to obtain good electrical contact for both the transit current and the short-circuit current. "



## Storage

It is crucial to keep the TRED MT-300/50 inside its transport bag and out of reach from non-authorized personnel. Keep out from direct heat sources, and away from direct UV exposition (sun light for instance). Keep the equipment in closed and clean environment (dust free, dry). The TRED may be stored in vehicles as long as a dedicated space is provided, where it doesn't block any access / way.

## Handling

We recommend before each use to inspect the equipment visually and mechanically (threads, screws, cables...) to seek possible irregularities. The main purpose is to make sure the equipment is fit to be used. If any abnormal is detected (for instance cable sheath harmed, broken elements on the device, loosen bolts...) the equipment must be put aside / out of service for further inspection and possible repair if possible, and/or to be replaced immediately. Please follow the instruction of use, chapter above, for its handling on site.

## Lifespan

No specific lifespan for this product; Follow periodic inspection and tests as per IEC 61230 standard (chapter C.3.2.2 of the standard) for cable.

"Users should develop their own guide to prove the integrity of the device and define the time required between two periodic inspections which may include an in-service test of the equipment."

## Spare parts

The cable equipped with its lugs as well as the copper alloy contacts, Handle and knob are wear elements that can be replaced.

The exchange of cables and contacts must be carried out by an operator trained for this purpose. The cable, knob, handle and contacts must be disassembled and reassembled according to their initial positions.

Maintenance videos are available.

### **The complete handle MT300**

**CW- 11618 Kit of two magnets and screws MT300**

**CW-11619 Knob kit MT300**

**Set of two contact pieces in brass with screws**

**Set of two cables equipped with end fittings and screws**

The torque of screwing shall be: M8 : 20N.m / M12 : 69N.m

