


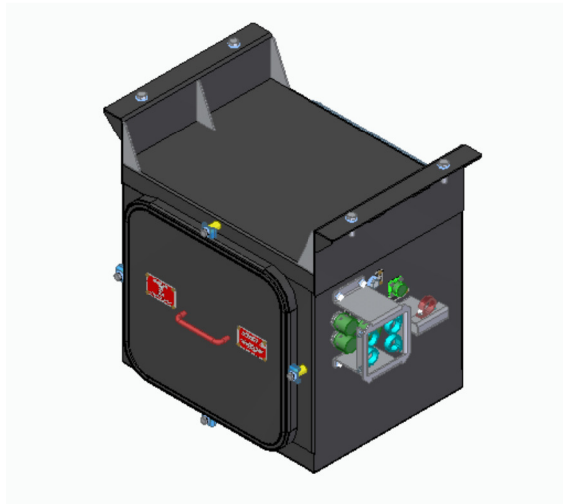
Doc No.: SD-8628	Rev. No.: 00	Page 1 of 4	Product Code: MAE675UV2	
Title: MAINTENANCE PROCEDURE OF DC LINK EARTHING SWITCH- MAE675UV2				
Prd By: DURGA RAO	Chkd By: DEVENDER.S	Appd By: KJSRK	Date	
Sign: DURGA RAO	Sign: DEVENDER.S	Sign: KJSRK	25.08.2022	

## 1. Introduction


During maintenance of Line and Traction Converter (LTC) unit or DC link earthing switch, entire rake OHE power is switched OFF and power circuit in the Basic Unit (BU) is safely connected to earth from the pantograph to traction. Transformer and then to LTC unit. To properly ensure all these things, a safety interlock system with lock and key is provided in the system.



**Fig 1.1 Front View**



**Fig 1.2 Rear View**

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## 2. Steps involved in maintenance:

- For any maintenance activities related to LTC unit and DC link earthing switch user need to be ensured and also secured that the DC link voltage shall be zero volts.
- To avoid charging of DC link capacitor from stray charging, it is recommended to short the DC link positive and negative terminals of LTC unit.
- This can be done by operating the DC link earthing switch, Each motor coach consists one DC link earthing switch box, which has one 4-pole DC link earthing switch.
- Both the LTC unit positive and negative terminals in the same MC are connected to 4- poles of DC link earthing switch.
- To operate DC link earthing switch, down the pantograph of BU and release the pantograph blue colour key.
- After removing the blue colour key, pneumatic pressure does not build up, even if command comes from the system, due to any reason and pantograph will not raise.
- Insert blue key in 25 kV roof earthing switch and operate its handle to earth position.
- Two Yellow colour keys gets released and blue key will be locked in the panel.
- Remove any one of the yellow colour key and insert it into the DC link earthing switch box in the underframe and operate it.
- With this, all the positive and negative terminals of two LTC units in the same MC shall be shorted and are connected to earth and provides safe condition for maintenance activities.
- Yellow colour key will be locked in the DC link earthing switch panel.
- Release green colour key from the DC link earthing switch panel.
- To know the status of the DC link earthing switch, NO/ NC feed back signals are connected to MCC unit.
- But the MCC reads the signal feedback when its control supply is in ON state only.

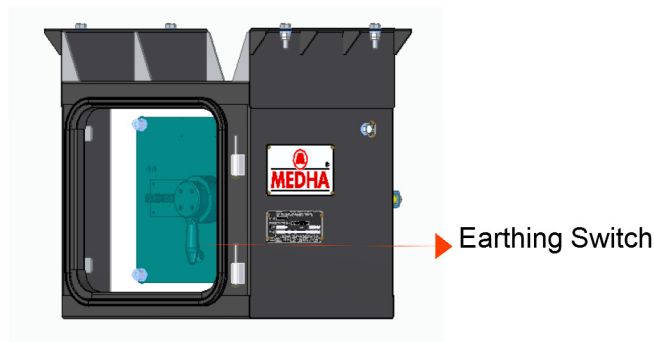


Fig 1.3

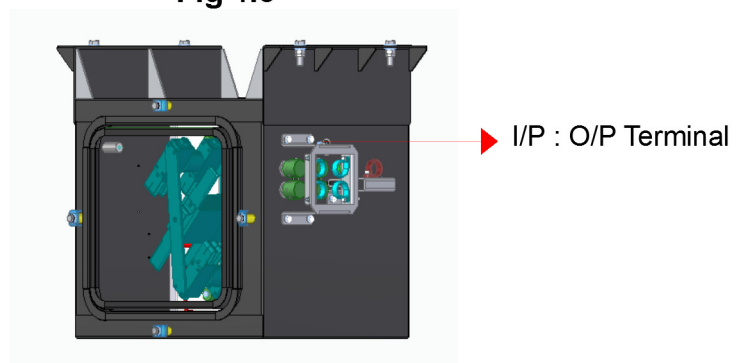



Fig 1.4



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- Use key and spanners provided with unit to open the doors.

**Spanner sizes:**

**For M6 - 10-11mm**

**For M8 - 12-13mm**

**For M10 - 16-17mm**

#### 4.1 Cleaning the UN-Ventilated sections:

- Do not use water, solvents, or compressed air.
- Dust and dirt deposits must be vacuumed up.
- Remove all unventilated doors.
- Vacuum or brush out the equipment sections and components, lint free cloth may be used if required.

#### 4.2 Cleaning the Ventilated Section:

- Do not use steam or water jets.
- Do not use aggressive solvents.
- Use oil free or acid free compressed air only.

### 5. Removing Earth Switch

- Ensure that the rake is disconnected from OHE supply and follow the safety procedure given in the section 1.2.
  - Wear ESD shoes apron and ESD wrist band with other end grounded.
  - Open the earthing switch unit door with key.
  - Remove the IP/ OP connections.
  - By using 18-19 spanner, remove M12 bolts (4nos).
  - Remove DC earthing switch form the enclosure.

#### 5.1 Maintenance of Doors and Gaskets:

- Due to moist and hot ambient exposure, traction converter door mountings and gaskets get deteriorate. Periodically all the door mountings shall be checked for total presence/ availability and in good condition
- On identifying any missed hardware, it is strictly to be added and maintained further.
- On identifying any jammed hardware, it shall be properly removed and to is to be replaced by new hardware with anti seize compound, applied by using screw extractor.
- Periodically all door gaskets shall be checked for total presence/ availability and in good condition.
- On identifying any missed gasket, it is strictly to be added and maintained further, On identifying any damaged gasket, it is strictly to be replaced with new one and maintained further.