
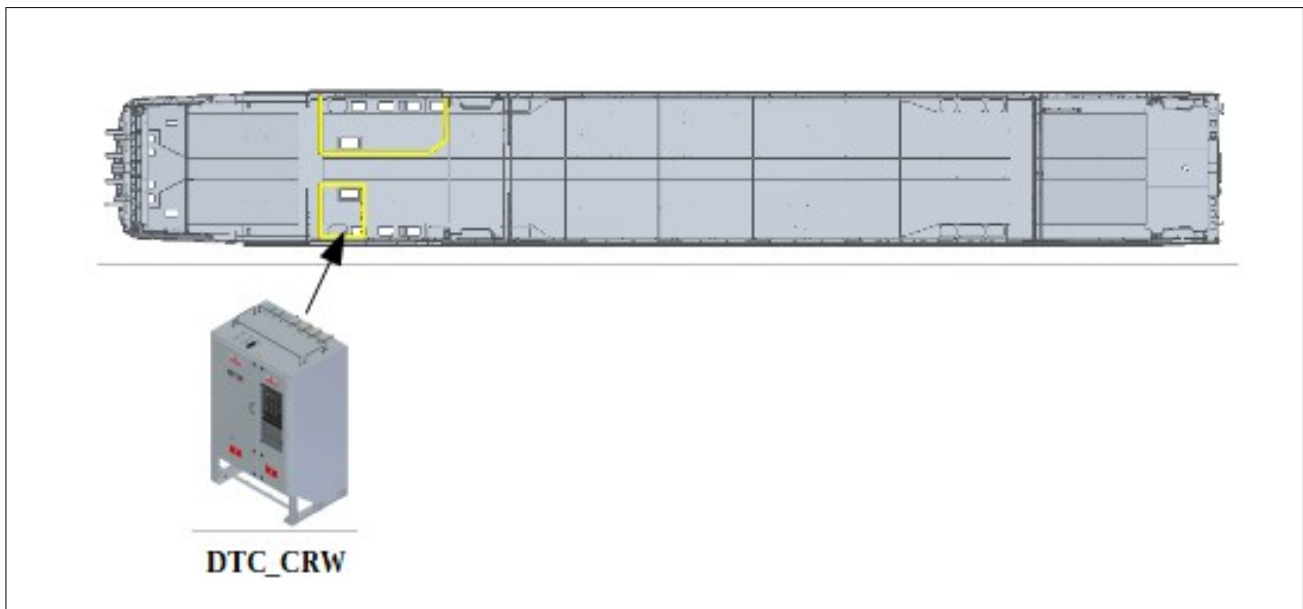


Doc. No.: SD-8621	Rev. No.: 00	Page: 1 of 6	Product Code: MAE675UV2	
Title: Maintenance Procedure of Cab Rear Wall Panel - Electric Train set				
Prepared by	Checked by	Approved by	Initiated date	
Lakshmi Singh	Sushmitha	BOC Reddy	22.08.2022	

Overview of CRW location in the Locomotive:


Every Driving Trailer coach has one Cab Rear Wall Panel. It is located behind the train driver, who operates circuit breakers and accesses the switches of CRW panel. Weight of CRW panel is around 490 Kgs approximately. The below picture shows the layout of CRW in Driving Trailer Coach.



Cab Rear Wall Panel consists of Central Coach Unit , Ethernet Consist Switch, Contactors, Relays, Breakers, Terminal blocks, Harting connectors, Power TBs etc.

Position of Electronics inside CRW:

Equipment layouts are shown in below section.

Doc. No.: SD-8621	Rev. No.: 00	Page: 2 of 6	Product Code: MAE675UV2	
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GBPS ETHERNET SWITCH(ECN+ETB)

FIRE EXTINGUISHER

GBPS ETHERNET SWITCH(ECN)

ECN 1

ECN 2

IFTCU

TCMS CONTROL UNIT

NVR

CAR CONTROL UNIT

TCMS CONTROL UNIT

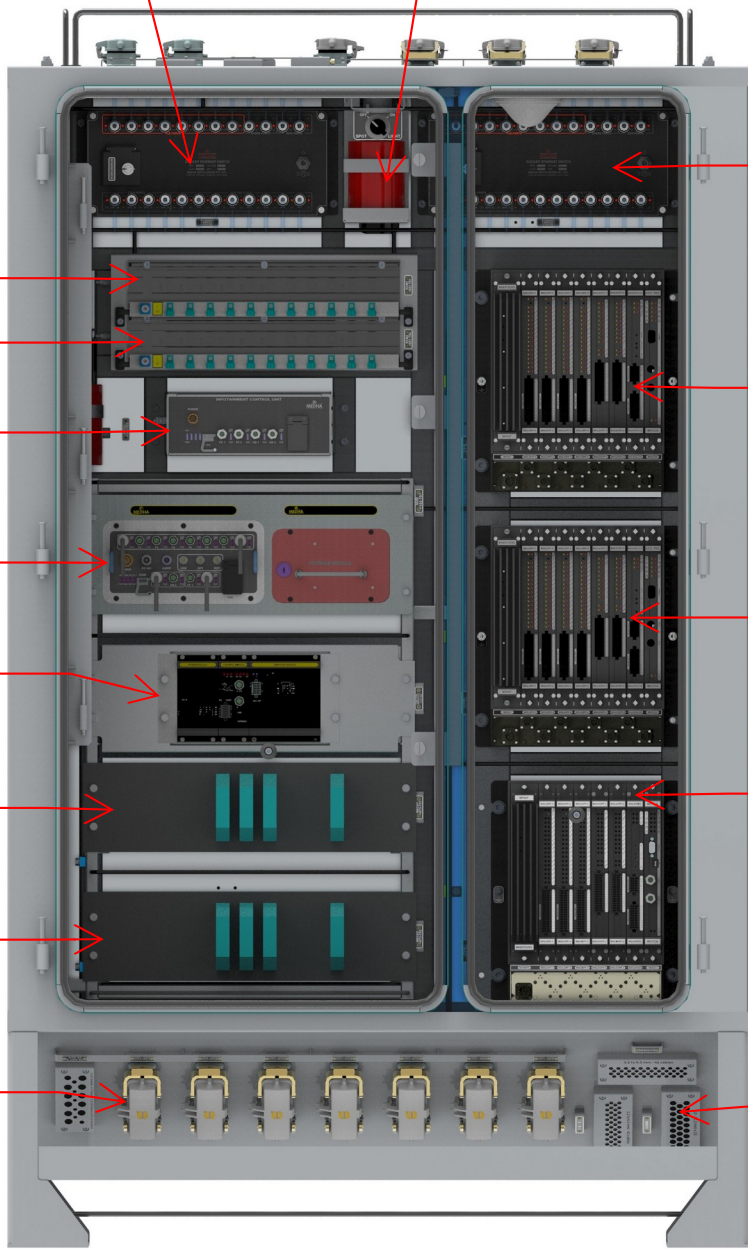
BECU 1

BECU 2


PCU

HARTING CONNECTORS

CABLE ENTRY SYSTEMS



CRW WITHOUT FRONT DOOR

Doc. No.: SD-8621	Rev. No.: 00	Page: 3 of 6	Product Code: MAE675UV2	
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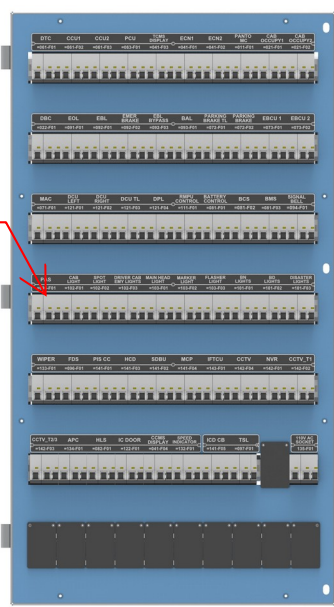


TERMINAL
BLOCKS

CAB AC
CONTROL UNIT

CONTACTORS

CRW WITHOUT REAR DOOR




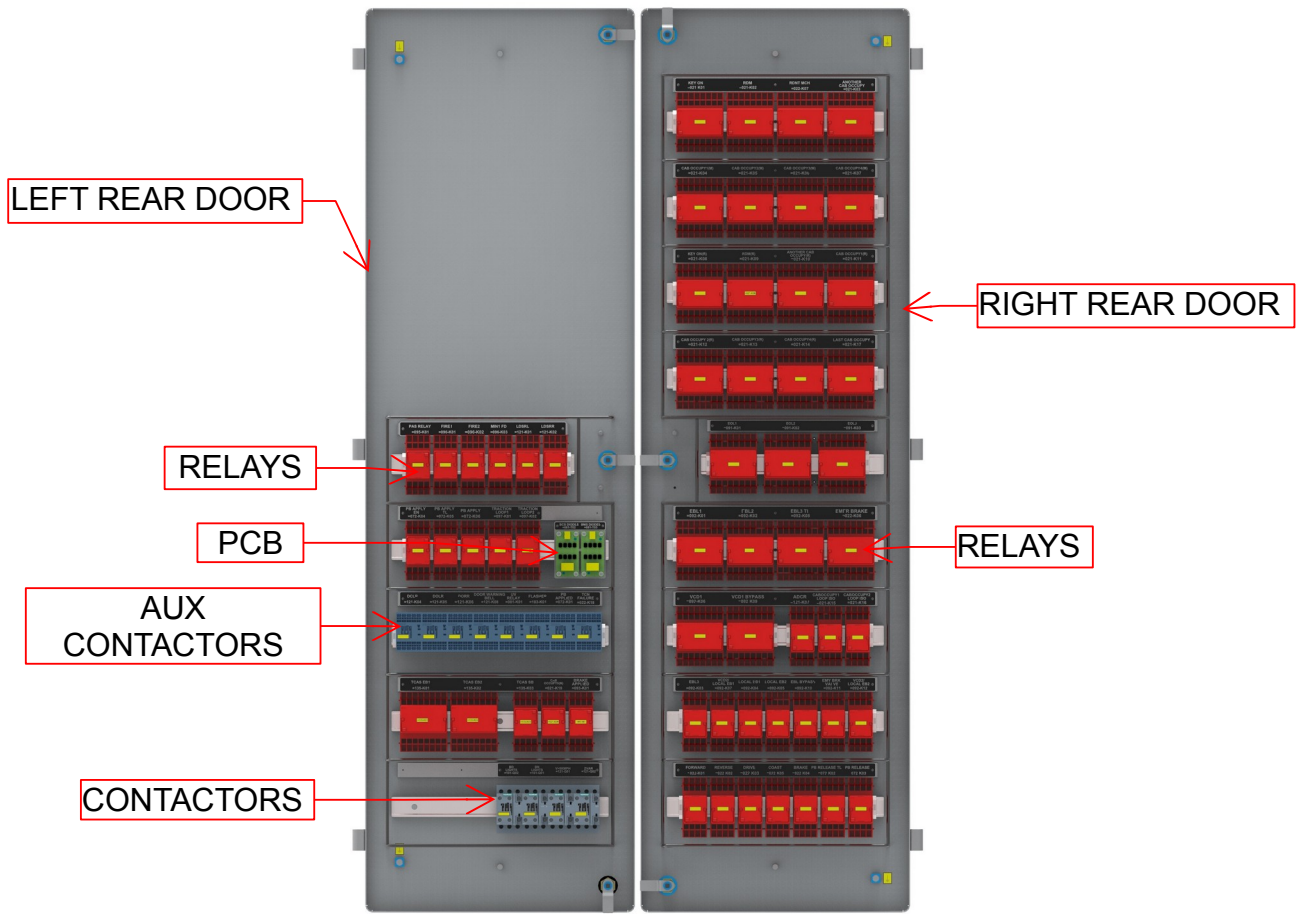
CIRCUIT
BREAKERS



SWITCHES

CAB AC
SWITCH BOX


Doc. No.: SD-8621	Rev. No.: 00	Page: 4 of 6	Product Code: MAE675UV2	
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CRW REAR DOORS

Mounting Hardware of CRW :

S. no.	Code	Description	Qty / panel	Torque
1	69001201801	Plain washer M12 HTS,Geo-silver	6	---
2	69001211001	Spring washer M12 HTS,Geo-silver	6	---
3	65056084006	Bolt M12 Hex head 40LG HTS,Geo-silver	6	102 N-m
4	69001204082	Plain washer M12,SS	4	---
5	69001214076	Spring washer M12,SS	4	---
6	65124254001	Bolt M12 Hex head 25 LG SS	2	62 N-m
7	56550210001	M12 bolt with rail nut	2	---
8	68012214089	Hex nut M12 SS	2	62 N-m
9	513522520001	Top anchoring mtg. Bkt.-A675UV2	2	---
10	62060000001	CRW panel floor cable EPDM plate	1	---

Doc. No.: SD-8621	Rev. No.: 00	Page: 5 of 6	Product Code: MAE675UV2	
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11	69000804035	Plain washer M8 SS	6	---
12	69000814029	Spring washer M8 SS	6	---
13	65084304074	Bolt M8 Hex head 30 LG SS	6	20 N-m
14	69001004010	Plain washer M10 SS	4	---
15	69001014004	Spring washer M10 SS	4	---
16	65104204074	Bolt M10 Hex head 20 LG SS	4	50 N-m

Safety instructions:

- CRW contains electrical equipments which use / carry high voltage. This can be highly dangerous .
- Any maintenance/ installation work is to be carried out by trained staff with appropriate precaution only.
- Always use protective clothing and protective equipment.
- Set the placard “Work in progress” or follow the employer instructions.
- Before commencing work on the vehicle, ensure that all voltage is disconnected.
- Lock the switches, isolators, fuses etc. where possible.

Visual Inspection & Cleaning:


- Open the doors of the unit by unlocking with a square key.
- Clean the entire internal housing and the equipment with the vacuum cleaner.
- Visually inspect the entire box, enclosure walls, covers & welds for any damage or cracks.
- Visually inspect all internal and external cable connections for damage.
- Ensure that all Cable entry frames ,glands and connectors are in good condition.
- Visually inspect the bolts used for mounting the unit to bottom and top mounting frames Ensure that all bolts are present and tightened.
- Ensure that the door gasket is in good condition without holes, cracks. If the gasket is damaged, replace it with new gasket.
- Check the condition of hinges
- Close the doors of the unit after compressing the gasket properly.
- Lock the doors with the square key.
- Ensure all the doors of the unit are tightly closed during cleaning/water wash of coach.

Maintenance of electronics inside the unit:

No specific maintenance is required for electronics in the unit. If there is any faulty component , then there are to be replaced by taking proper precautions.

Replacement of Contactors :

- Refer circuit diagram to understand wiring before disconnecting the wires.
- Untie the cables of the contactor from the adjacent tie rod.

Doc. No.: SD-8621	Rev. No.: 00	Page: 6 of 6	Product Code: MAE675UV2	
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- Remove the screws of the contactor and remove the cables.
- Remove the contactor from dinrail & replace the contactor.
- Refit the cables and tighten the screws.
- Tie the hanging cables to the adjacent tie rod.

Replacement of Relays :

- Refer circuit diagram to understand wiring before disconnecting the wires.
- Untie the cables of the relay from the adjacent tie rod.
- Remove the relay from dinrail & replace the relay.
- Refit the cables to the relay.
- Tie the hanging cables to the adjacent tie rod.

Replacement of Circuit Breakers :

- Refer circuit diagram to understand wiring before disconnecting the wires.
- Untie the cables of the circuit breaker from the adjacent tie rod.
- Remove the screws of the circuit breaker and remove the cables.
- Untie the Auxiliary contact block if fixed
- Remove the circuit breaker from dinrail & replace the circuit breaker.
- Refit the Auxiliary contact block
- Refit the cables and tighten the screws.
- Tie the hanging cables to the adjacent tie rod.

Replacement of Terminal Blocks :

- Refer circuit diagram to understand wiring before disconnecting the wires.
- Untie the cables of the terminal block from the adjacent tie rod.
- Remove the cables and replace the terminal block on the dinrail.
- For weidmuller TBs with bus bars, untighten the screws of the bus bars first.
- After the replacement of TB, refit the busbar and tighten the screws.
- Refit the cables of the TB.
- Tie the hanging cables to the adjacent tie rod.

REV. NO.	DATE	ECR NO.	DESCRIPTION OF REVISION