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भारत सरकार - रेल मंत्रालय  
अवसंधान अभिकल्प और मानक संगठन  
संख्या - 226011  
Government of India - Ministry of Railways  
Research, Designs & Standards Organization,  
LUCKNOW - 225011

No. EL/11.5.5/2

Dtd. 30.09.2008

Chief Electrical Engineer,

- Central Railway, 2<sup>nd</sup> floor, Parcel Office Building, Mumbai CST-400 001
- Northern Railway, Baroda House, New Delhi-110 001
- East Central Railway, HQs Office, Hajipur-844 101 (Bihar)
- South Central Railway, Rail Nilayam, Secunderabad-500 071

**Modification Sheet No. RDSO/2008/EL/MS/  
0367/Rev '0' Dated-29.08.08**

1.0 Title:

Modification of Mounting Arrangement of MCB-100 (Circuit Breaker Battery Charger) fitted in Auxiliary Converter (BUR3 / BOX2) of 3-phase electric locos.

2.0 Object:

MCB-100 for battery charger in BUR-3 gets tripped whenever there is a variation or unbalance in the output voltage because of any malfunctioning in auxiliary converter No. 3 resulting in no supply to battery charger. Resetting of MCB is not possible on line with the existing arrangement. Crew on line with modified arrangement can reset MCB-100. ELS Ajni has done this modification of mounting arrangement of MCB-100 in 25 locos from April 2007 to May 2008 and these are running satisfactorily.

3.0 Existing Arrangement:

At present, MCB-100 is fitted inside BUR-3 of auxiliary converter as per ABB's drawing No. 3EHE310190

4.0 Modified Arrangement:

MCB-100 to be shifted from inside BUR-3 to HB-2 panel as shown in circuit drawing no. SKEL-4750, ALT '0' and photographs attached.

5.0 Step of Modification:

Existing MCB-100 inside BUR-3 has main three input and output cables and two pairs of cables for auxiliary contacts. Modifications may be done as per following steps (as shown in enclosed photographs):-

- i) Remove existing 6 sq. mm incoming cables nos. 1131, 1132, 1133 from contactor 52/3 to MCB-100.
- ii) Remove existing outgoing cables nos. 2007, 2008, 2009 from MCB-100 to charger transformer.

- iii) Remove MCB-100 and terminate auxiliary interlock control cables on MCB by providing Wago type 04 Nos. connector.
- iv) Provide MCB-100 in HB2 panel.
- v) Connect new cables from BUR-3 contactor 52/3 (output) to MCB-100 (as incoming) in HB-2 panel.
- vi) Output of MCB-100 to be connected directly to charger transformer from HB-2 panel.
- vii) 4 cables for auxiliary contacts shall also be taken out through same cable gland after providing Wago connectors at BUR-3 and connected to MCB-100 in HB-2 panel.

#### 6.0 Instructions for Driver

*Closing MCB-100* In case tripping of Battery charger MCB, driver has to follow the instruction mentioned for Fault No.F0902P2 in Driver's Manual of 3-phase Electric locomotives.

#### 7.0 Material required:

- 6 sq. mm GKW cable – 31 m (approx.)
- 0.5 sq. mm GKW cables – 20 m (approx.)
- 0.5 sq. mm sleeve – 04 Nos.
- 6 sq. mm lug – 10 Nos.
- 6 sq. mm pin type lugs – 6 Nos.
- Wago connectors 2.5 sq. mm and locking plate – 4 Nos. each
- Expanded insulated tube jelly type sleeve – 5 m
- Cable ties in suitable nos.

#### 8.0 Application to class of locomotives:

WAP5, WAP7, WAG9, & WAG9H type locomotives.

#### 9.0 Material rendered surplus: Nil

#### 10.0 Reference:

In pursuance to recommendations of HAG level committee constituted by Railway Board to look into the various maintenance issues in respect of 3-phase locomotives and directives issued by Railway Board vide their letter no. 230/Elec/TRS/138/9pt. dated 22.10.07

#### 11.0 Modification Drawing:

Circuit Diagram No.-SKEL- 4750, ALT '0'.

12.0 Agency of Implementation:

Electric Loco Sheds holding WAP5, WAP7, WAG9, & WAG9H type locomotives.

Encl: As above

*404/5019*  
(Sandeep Srivastava)  
For Director General/Elect

Copy to:-

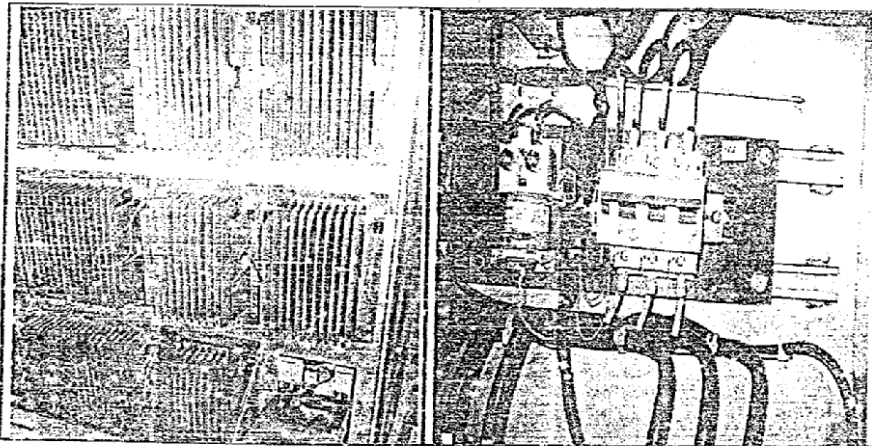
1. Secretary (Electric Traction), Railway Board, Rail Bhavan, New Delhi – 110 001
2. Chief Electrical Loco Engineer,
  - East Central Railway, Hajipur-844 101(Bihar)
  - Northern Railway, Baroda House, New Delhi-110 001
  - Central Railway, HQ Office, 2<sup>nd</sup> floor, Parcel Office Bldg., Mumbai CST- 1
  - South Central Railway, Rail Nilayam, Secunderabad - 500 071
  - West Central Railway, Jabalpur- 482001
  - South East Central Railway, Bilaspur-495004
3. Sr. DEE (TRS), Electric Loco Sheds,
  - East Central Railway, Gomoh-828401
  - Northern Railway, Ghaziabad (UP)- 201001
  - Central Railway, Ajni (Nagpur)-440003
  - South Central Railway, Lallaguda, Secunderabad – 500 071
  - West Central Railway, Tuglakabad, New Delhi
  - South East Central Railway, Durg, Bilal

Encl: As above

*404/5019*  
(Sandeep Srivastava)  
For Director General/Elect

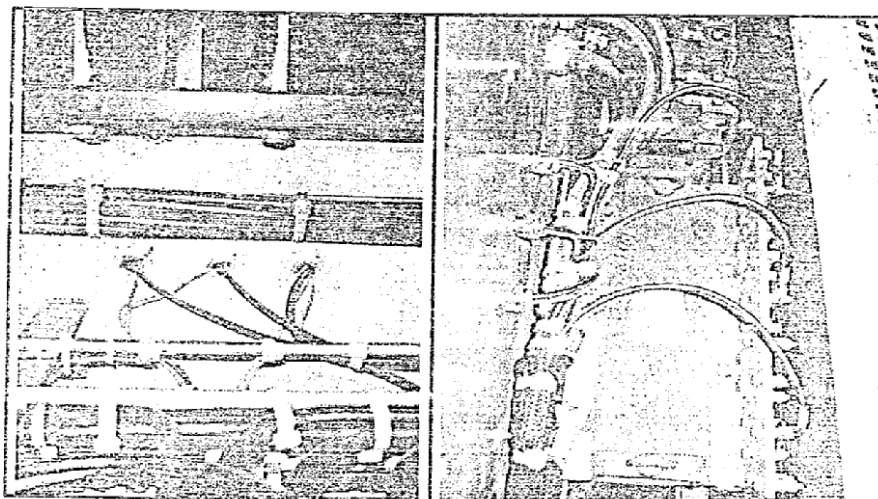
*C/C Dwelling*

Photographs for shifting of MCB-100 from BUR-III to HB-2 panel.



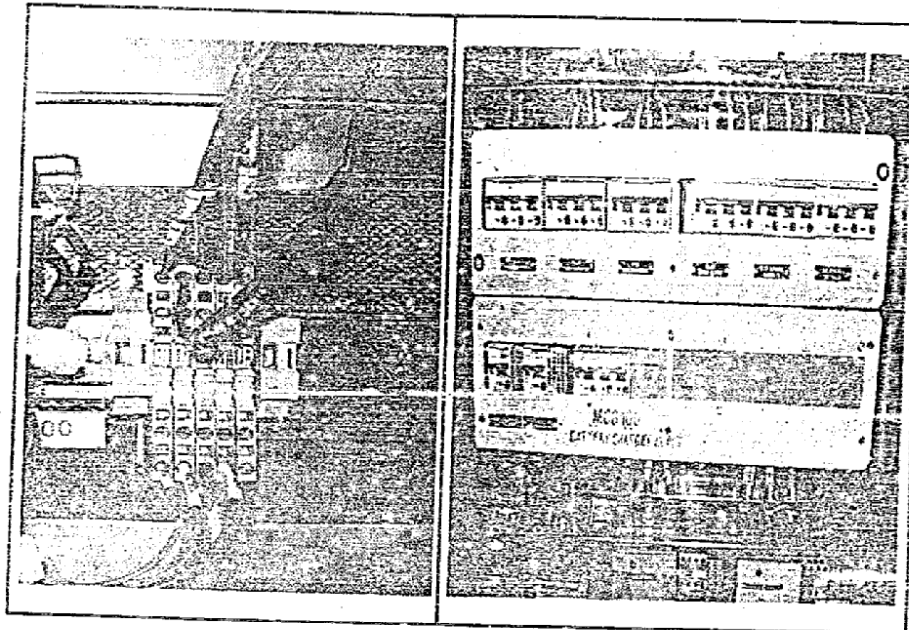
1. MCB-100 located inside BUR-III

2. MCB-100 inside BUR-III



3. Cables are taken out from this location of BUR-III

4. Cables are taken out from this location of BUR-III



5. Additional SB (Wago connectors)  
Provided inside BUR-III in place of  
MCB-100

6. MCB-100 inside HB-2 panel.

DT	257/68
D	1345
C	1345
T	

