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Ref. No. : ABB/4118/CLW/PE/103 Date: 11.04.2025

To,
Dy Chief Electrical Engineer,
Centre for Design & Development
Chittaranjan Locomotive Works
Chittaranjan - 713 331

Kind Attn: Shri Pankaj Kumar (Dy CEE/D&D/CLW)

Subject: Request for regular approval of ABB make Redesign Auxiliary converter software version 98 in all abb propulsion fleet.

Ref : 1. RDSO Minutes of Meeting held at CLW on 21.2.2025 on reliability issues of IGBT based Propulsion System equipment fitted in of 3 Phase electric locomotives.
2.Software version 97 approval Letter no - C-D&D/T/21, Vol.II , Dated – 20.4.2024

Dear Sir

With respect to above reference continuous discussion during reliability Improvement meetings with improvements of BUR/battery charger failure in Propulsion locos, we have addressed the issues of Battery charger failure in Software version 98.

1.1 Improvements in software version 98

Issue Reported: DC link overvoltage predominantly in AUX Converter-1 during neutral section in locomotives with modified weight of impellers of the Oil cooling Blowers.

Solution: AUX Converter-1 default slope rate changed to give the inverter softer start when all AUX are in healthy state. In case of AUX Converter-1 isolation, same slope rate is dynamically assigned to AUX Converter-2.

Issue Reported: Spurious Battery Charger Trip recorded on DDS
In case of spurious battery charger trip message on DDS, transient recorder generation in AUX converter for retrieving background environment data to identify the cause of the issue. Please note this feature will not alter the BCC functionality in any case.

1.2 Modification in software version 98

Change Request: Change implementation done for Energy Saving Scheme as per RDSO and CLW Modification request C-D&D/T-24 and RDSO Spec RDSO/2008/SPEC/0071/Rev5 for Redesign Auxiliary Converter.

Implementation: The changes are in line with the proven software running in the product M130/M260 Redesign -2 Auxiliary Converter (PER-2), ref. SW approval letter no: C-D&D/T/24(Part)/ABB/Type test.

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Based on the satisfactory performance in 12 loco's & Joint note on dated 06.09.2024 at ELS ED , we now request you to provide for regular approval of software version 98 in redesign Auxiliary converter in **(For Train type P5, P7, G9)**

Thanking you and assuring you the best of our services, we remain.

Yours Sincerely,

Mohit Sharma
Service Manager – Traction(India)
ABB India Limited.
Mob: +91-9686841604

Copy to : Director Electrical, RDSO – For your kind information
Attachment – Software version 98 release note & ELS ED Joint note on dated 6.9.24

1 Introduction

This document summarizes the solution/ updates and test results for the issues reported from the field on the projects **Bordline® M130/M260 Redesign auxiliary converter**

2 Release Notification

2.1 Improvements in software version 98

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3 Release Approval

By the verification of modification, this software is valid for installation or downloading on the target system.

3.1 Verification of Modification

All the modifications of the new SW release are verified by testing the new functionality on the converter on the vehicle and made valid to install in another locomotives.

4 Required tools / systems and versions for installing this SW

Tool Name	Version	Manufacturer	Function
PEC Tool	2.4.1.0	ABB	Download tool

5 Field Action

It is recommended to upload the software into Locomotive and test the application for improved converter reliability and to address the different issues reported by zonal railways.

दक्षिण रेलवे
Southern Railway
सेलम मंडल
Salem Division

वरिष्ठ मंडल विद्युत अभियंता का कार्यालय
Office of the Senior Divisional Electrical Engineer
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Joint Report Made On : 06.09.2024

Firm's Name : ABB India Pvt.Ltd

Name of the Equipment : BUR

Make : ABB

Details : Performance joint note of BUR Software ver. 98

Action taken : Following checks were made after downloading BUR software ver. 98:

1. 92.2 Battery voltage: Max Charger output current observed: 67.7A with MCPA working.
2. Sudden DJ closing in 3 seconds, DC link voltage of BUR1 < 700V (679max) only observed with OCBs working in 50Hz.
3. With BUR1 isolated, Sudden DJ closing in 3 seconds, DC link voltage of BUR2 < 700V (679max) only observed with OCBs working in 50Hz.
4. While load sharing also sudden DJ opening and closing tested, DC OV problem resolved.
5. For MCB100 & 110 MCB tripping, only pop ups will come. No data logging in DDS. NO TR data also. For MCB 100 BUR 3 will give data log.
6. To simulate iBCC_ph1_Tprim_peak_BCC Setting reduced from 110A to 10A. Battery charger tripped with Over current. TR data recorded. Log available in BUR and VCU.
7. Software was loaded in 12 locos and performance was observed. Issue of spurious messages were resolved.

Following these checks, loco was nominated on line to monitor performance of Software version 98V

Remarks : As of 02.09.2024, following locos have been uploaded with new BUR software ver. 98 and performance has been monitored.

The following locos have reported no failures with respect to Battery Charger Trip and their performance have been found satisfactory.

दक्षिण रेलवे
Southern Railway
सेलम मंडल
Salem Division

वरिष्ठ मंडल विद्युत अभियंता का कार्यालय
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इरोड 638002
Erode- 638002

ई-मेल/ E mail: erodeloco@gmail.com

Locos updated with 98V		
Sl no.	Loco no.	Date of SW update
1	37373	30-Jul-24
2	37308	06-Aug-24
3	37176	08-Aug-24
4	37151	09-Aug-24
5	37447	10-Aug-24
6	37387	10-Aug-24
7	37522	12-Aug-24
8	37379	16-Aug-24
9	37306	19-Aug-24
10	30748	22-Aug-24
11	37494	28-Aug-24
12	37448	31-Aug-24

E. Hari Krishnan

(E. HARI KRISHNAN)
SERVICE ENGINEER
ABB

(ROY VARGHESE)
SSE/E8/ELS/ED

R. Prashaanth

(R. PRASHAANTH)
DEE/RS/ED