सत्यमेव जयते

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
e-mail : dsetplgroup@gmail.com.

Government of India - Ministry of Railways
Research, Designs & Standards Organization,
LUCKNOW – 226011
Fax: 91 - 0522 - 2452581
Tel: 2465714/ 2450374

No. EL/11.5.5/21 Dated: 09.09.2022

Principal Chief Electrical Engineers;

- Central Railway, HQs Office, 2nd floor, Parcel Office Bldg., Mumbai – 400 001
- East Central Railway, Hajipur (Bihar) – 844 101
- Eastern Railway, Fairlie Place, Kolkata – 700 001
- East Coast Railway, Railway Complex, Bhubaneswar – 751 023
- Northern Railway, Baroda House, New Delhi – 110 001
- North Central Railway, Allahabad – 211 001
- North Eastern Railway, Gorakhpur –273 001
- Southern Railway, Park Town, Chennai – 600 003
- South Central Railway, HQs Office, Rail Nilayam, Secunderabad – 500 071
- South Eastern Railway, Garden Reach, Kolkata – 700 043
- South East Central Railway, Bilaspur – 495 004
- South Western Railway, Hubli – 580020
- West Central Railway, HQs Office, Opp. Indira Market, Jabalpur – 482 001
- Western Railway, Churchgate, Mumbai – 400 020
- Banaras Locomotive Works, Varanasi – 221004
- Chittaranjan Locomotive Works, Chittaranjan – 713331 (WB)
- Patiala Locomotive Works, Patiala – 147 003.

MODIFICATION SHEET NO. RDSO/2022/EL/MS/0490 (Rev. '0') dated 09.09.2022

1.0 Title:

Modification to avoid Speedometer OFF & ON during running of train/locomotive due to VCU reset in three phase electric locomotives.

2.0 Brief History:

2.1 This office has issued the modification sheet in existing control electronics (CE) resetting scheme of 3-phase electric locomotive to eliminate the faults purely transient in nature during running of train/locomotive vide Modification sheet no. RDSO/2018/EL/MS/0475(Rev.0).

2.2 There is a provision of VCU reset switch in 3-Phase locomotives. By operating this switch, power to all the control electronics including VCU & Speedometer will be cut off and restored after some time.

2.3 Speedometer power gets OFF & ON during control electronics (VCU) reset in modified locos. During VCU reset Procedure, Contactor 218 gets de-energized which leads to Speedometer also getting OFF & ON as power supply is in common path. Once power is restored, Speedometer will perform self-test of all the internal hardware including Memory, controller, RTC, relays etc. which will take around 15-20 seconds. During this period, there will not be any recording in Speedometer.

2.4 As mentioned in CLW letter no. C/D&D/T/42 dated 28.08.2018 and RDSO letter no. EL/11.5.5/21 dated 12.12.2018 only control electronics (VCU) will get reset and reset switch can also be operated during running of train/locomotive. But in this case, Speedometer is also getting OFF & ON during VCU reset.

3.0 Objective:

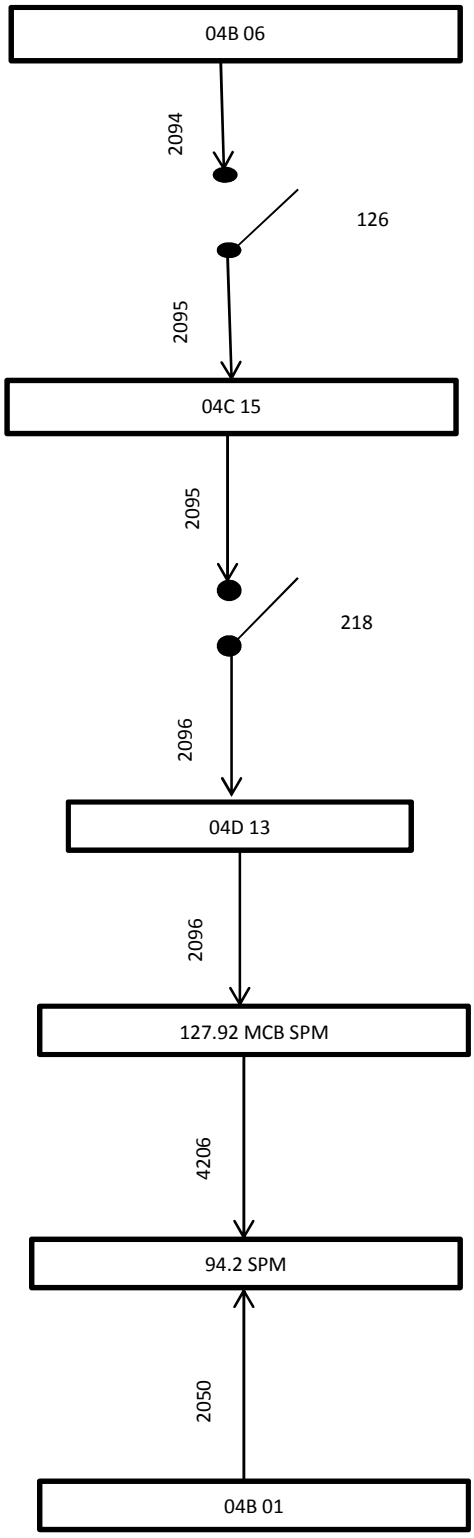
3.1 As the reset switch can be operated during running of locomotive, Speedometer power will be interrupted during this period. Being a safety device, it is not desirable that Speedometer power be interrupted during locomotive running.

3.2 The objective of this modification sheet to suggest a scheme to avoid Speedometer OFF & ON during running of train/locomotive due to VCU reset in three phase electric locomotives.

4.0 Limitation in existing Scheme:

It is to be mentioned that Speedometer also getting OFF & ON with VCU reset during running condition of train/locomotive by operating VCU reset switch due to their power supply in common path. When VCU reset switch is pressed, VCU reset relay gets de-energized and its interlock on contactor 218 coil branch gets opened leading to coil of contactor 218 de-energize causing contactor 218 to get open circuited. Due to this,

incoming power supply coming from contactor 218 through wire no. 2096 to Speedometer MCB (127.92) got interrupted leading to Speedometer OFF.



(Existing SPM scheme)

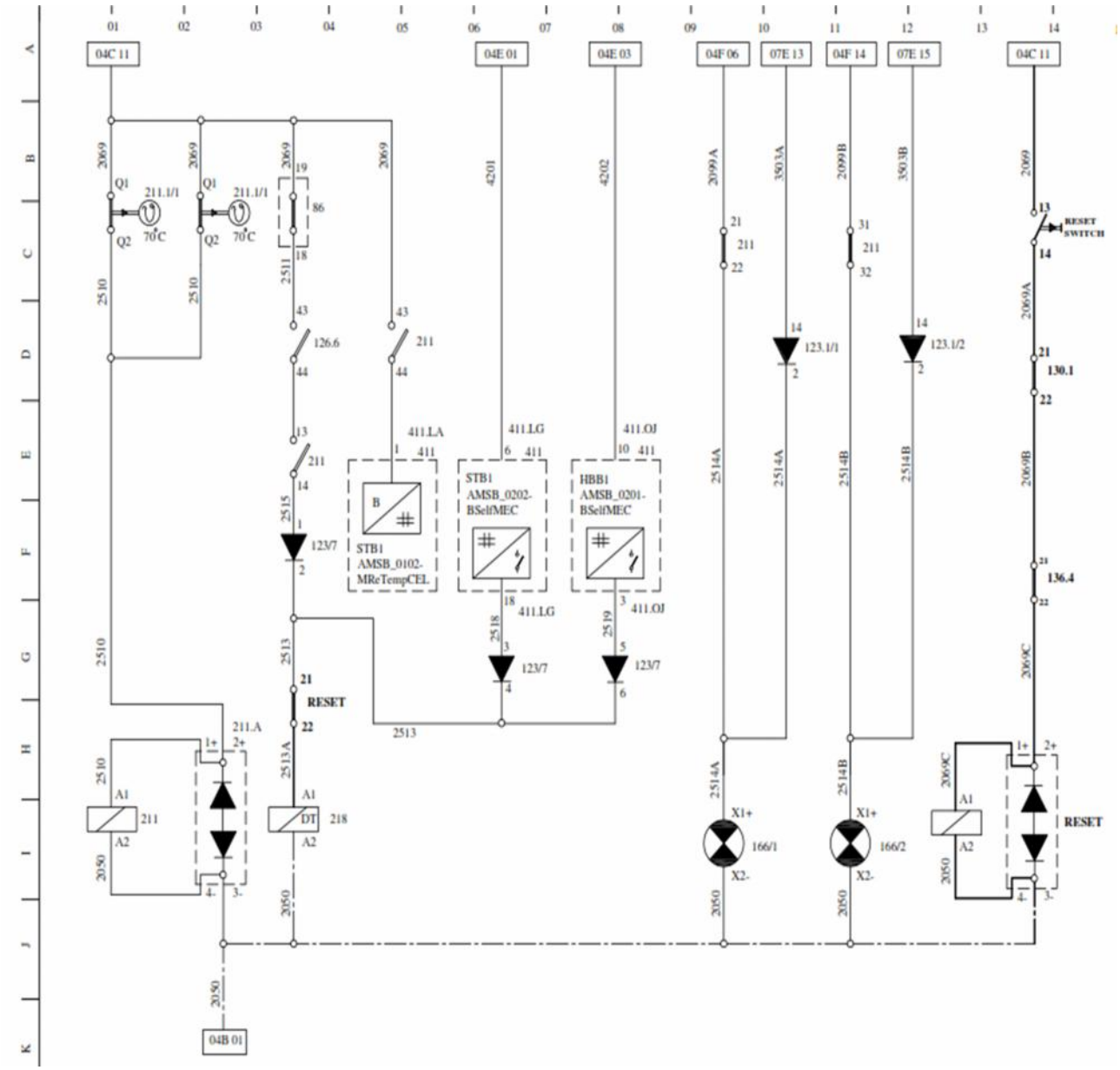
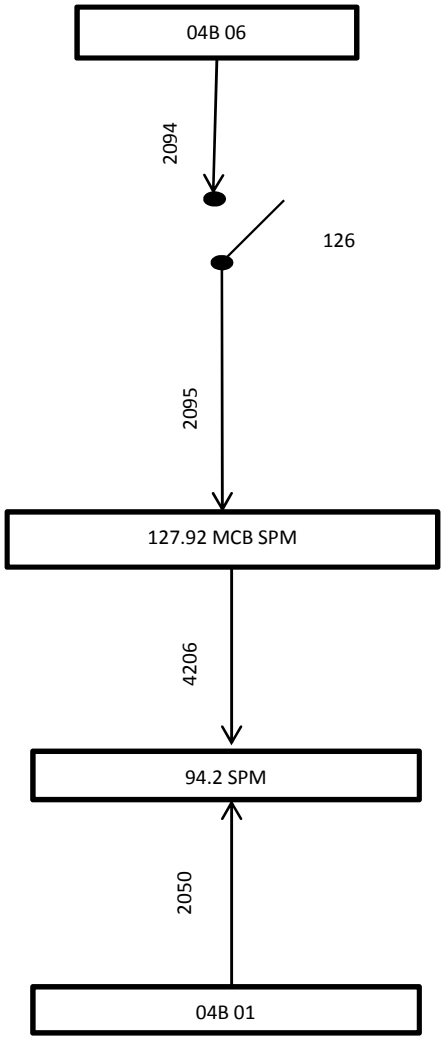


Figure -1 (VCU Reset Scheme)

5.0 Modified Speedometer Scheme:

As described in Para 4, it is not feasible to do VCU reset without Speedometer OFF & ON as per existing Scheme. In view of this, following modification is proposed in control supply wiring of Speedometer circuit to avoid its OFF & ON during VCU reset. In this modified scheme, input supply to speedometer MCB will be fed from output of contactor no. 126 through wire no. 2095. Modified scheme is given as under.



6.0 Material required:

Control circuit cable as per requirement.

7.0 Application to the class of locomotive:

All three phase electric locomotives in which VCU reset modification no. RDSO/2018/EL/MS/0475(Rev.0) has already been implemented.

8.0 Agency of Implementation:

All PUs, POH Shops, Electric Loco Sheds Holding 3-Phase Electric Locomotives.

9.0 Periodicity of Implementation:

Commissioning, POH, all major and minor schedule.

Encl: Nil

Digitally Signed by Amit Kumar Saraf
For Director General (Elect.)
Date: 09-09-2022 16:13:28
Reason: Approved