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No. EL/4.2.15/Gen

Date: As signed

**Principal Chief Electrical Engineers,**

- |  |  |
|--|--|
| 1. Central Railway, Mumbai CST-400 001                         | 11. South East Central Railway, Bilaspur- 495 004        |
| 2. East Central Railway, Hazipur-844 101                       | 12. South Eastern Railway, Garden Reach, Kolkata-700 043 |
| 3. East Coast Railway, Chandrashekharapur, Bhubaneswar-751 016 | 13. Southern Railway, Park Town, Chennai-600 003         |
| 4. Eastern Railway, Fairlie Place, Kolkata-700 001             | 14. South Western Railway, Hubli-580 024                 |
| 5. North Central Railway, Subedarganj, Prayagraj-211 033       | 15. West Central Railway, Jabalpur-482 001               |
| 6. Northern Railway, Baroda House, New Delhi-110 001           | 16. Western Railway, Churchgate, Mumbai- 400 020         |
| 7. North Eastern Railway, Gorakhpur-273001                     | 17. Chittaranjan Locomotive Works, Chittaranjan-713 331  |
| 8. North East Frontier Railway, Maligaon, Guwahati-781 011     | 18. Banaras Locomotive Works, Varanasi - 221 004         |
| 9. North Western Railway, Jaipur-302 006                       | 19. Patiala Locomotives Works, Patiala - 147 003         |
| 10. South Central Railway, Rail Nilayam, Secunderabad-500 071  |  |

**MODIFICATION SHEET NO. RDSO/2024/EL/MS/0498(Rev.0) , Dated 02.04.2024**

**1.0 TITLE:**

Recording of Flasher light operation either due to fault or manually by Loco Pilot in case of emergency with time stamping in Conventional Electric Locomotives equipped with Microprocessor based control and fault diagnostic system (Ver-3).

**2.0 BACKGROUND:**

- 2.1 Railway Board vide letter No. 2023/Elect(TRS)/440/20 dated 22.12.2023 had advised RDSO that CCRS, in his immediate recommendations pertain to enquiry of Fire accident in Train No. 02570 NDLS-DBG Humsafar Clone express at Sarai Bhopat station of Prayagraj division of NCR at about 17:25hrs on 15.11.2023, has suggested that the “Operation of Flasher light either due to fault or by Loco Pilot in case of emergency shall be recorded with time stamping either through VCD/VCU”.
- 2.2 RDSO envisaged the scheme for recording of flasher light operation due to fault or by loco pilot and advised to M/s Medha & Laxven to execute same as proof of concept in conventional locomotive equipped with MPCS (Ver-3). Firms executed the scheme after modification of software in loco no 27738/WAG-7/KZJ & 27429/WAG-7/KZJ on dated 17/2/24 and 18/3/24 respectively. It leads to recording of flasher light operation status either due to fault or due to loco pilot operation in short term as well as in long term data with date and time stamping.

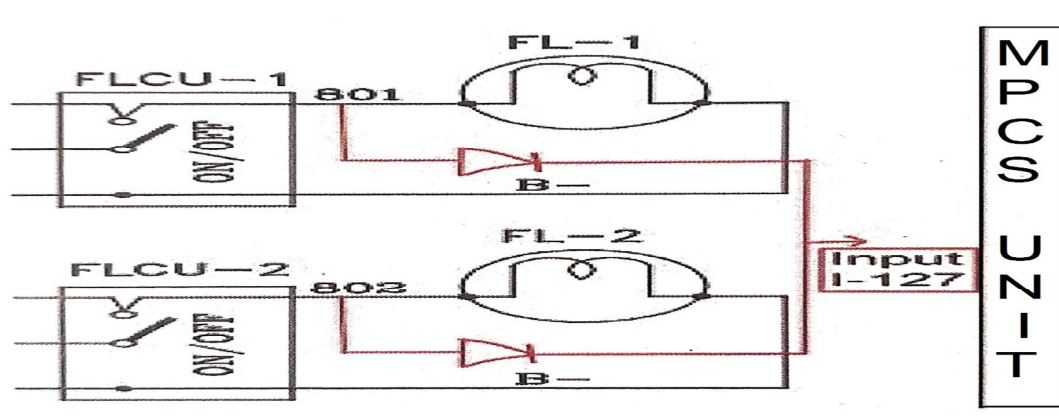
3.0 **OBJECT:**

Recording of Flasher light operation either due to fault or manually by Loco Pilot in case of emergency with time stamping in Conventional Electric Locomotives equipped with MPCS(Ver-3).

4.0 **WORKS TO BE CARRIED OUT:**

It requires some electrical circuit modification. Run a cable from CAB1 flasher light unit wire no - 801 through Blocking diode and other cable from CAB-2 flasher light unit wire no - 802 through blocking diode to BD board and then connect to MPCS (ver-3) spare input I-127.

5.0 **MODIFICATION DRAWING:** The logic circuit used for this modification



6.0 **APPLICATION TO CLASS OF LOCOMOTIVES:**

Conventional Electric Locomotives equipped with MPCS (ver-3).

7.0 **MATERIAL REQUIRED:**

- (i) Two Numbers Blocking Diodes.
- (ii) 30 m 2.5 sq. mm Cable with lugs.

8.0 **MATERIAL RENDERED SURPLUS:**

None

9.0 **REFERENCES:**

Railway Board's letter no. 2023/Elect(TRS)/440/20 dated 22.12.2023.

10.0 **AGENCY FOR IMPLEMENTATION:**

- (i) Electric Loco Sheds/Diesel Loco Sheds/POH Workshops having Conventional Electric Locomotives equipped with MPCS(Ver-3).
- (ii) OEMs of MPCS require for modified software uploading.

**Encl.:** Annexure

**Copy to:**

As per standard mailing list.

(Sanjay Kumar Tiwari)  
for Director General/Electrical

## EVENT DATA LOGGED AS

MPCS ANALYSIS SOFTWARE

Download Open Configuration Table Graph Diagnostic tool

Railway Zone SCR Shed Name KKZ Loco Type WAG-7 Loco No. 27738 Unit No. 0

EVENT RECORDER SHORT (ERST)

Date/Time	Location	Speed	Total Distance	Notch	VCD Status	Flasher
NA	NA	Km/h	KM	NA	NA	NA
17/02/24 17:22:43	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:44	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:45	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:46	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:47	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:48	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:49	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:50	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:51	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:52	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:53	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:54	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:55	17.967249 N, 79.502373 E	0	138669389	0	Active	ON
17/02/24 17:22:56	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:57	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:58	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:22:59	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:00	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:01	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:02	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:03	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:04	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF
17/02/24 17:23:05	17.967249 N, 79.502373 E	0	138669389	0	Active	OFF

MPCS configuration and Analysis software

## SHORT TERM RECORDED DATA

MCS857V3 Data Analysis Software - Version 3.1 - [Detailed Table Report - SHM]

File View Reports SHM Date Selection Fault Date Selection Help

Date	Time	GRD	Cvt Brake	Health of Remote Monitoring System	Flasher Light	VCD Status	VCD Cycle	BOGE1	BOGE2	HPAR
dd/mm/yy	hh:mm:ss									
18/03/24	20:10:04	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:06	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:07	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:08	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:10	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:11	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:14	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:15	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:16	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:18	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:19	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:20	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:22	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:23	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:22	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:33	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:34	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:36	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:37	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:38	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:40	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active
18/03/24	20:10:41	ON	OFF	Healthy	OFF	Active	Suppressed	Active	Active	Active
18/03/24	20:10:43	ON	OFF	Healthy	ON	Active	Suppressed	Active	Active	Active

Loco Number: 27429 Loco Type: WAG-7 Shed Name: SHED01  
Total Distance: 0.000 Km Total Time: 33:54:02.37 (Day: Hour: Min: Sec)

Memory Type: [Short Term Event Recorder] Loco No.: 27429 File Name: BPO5244 Retrieval Date, Time: 27-03-2024 16:42:49 CC2 Application Path

36°C Sunny



WCS557V9 Data Analysis Software - Version 5.1 (Detailed Table Report - LGM)

File View Reports **LGM Date Selection** Fault Date Selection Help

Date dd/mm/yy	Time hh:mm:ss	VFD Invert	OHE Voltage KV	OHE Current Amps	Power Factor	GRO	Ctl Brake	Health of Remote Monitoring System	Flasher Light	VCD Status	VCD Cycle
18/03/24	20:05:40	1	0.0	0	0.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:05:44	1	0.0	0	0.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:05:45	1	21.7	30	2.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:06:00	11	26.6	3	50.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:06:20	10	26.6	3	56.00	ON	OFF	Healthy	ON	Active	Suppressed
18/03/24	20:06:40	13	26.7	3	56.00	ON	OFF	Healthy	ON	Active	Suppressed
18/03/24	20:07:00	13	26.6	3	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:07:20	15	26.6	3	70.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:07:40	10	26.6	3	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:08:00	17	26.8	2	42.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:08:20	17	26.8	2	42.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:08:40	17	26.7	2	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:09:00	17	26.6	3	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:09:20	12	26.7	3	48.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:09:40	13	26.6	3	50.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:10:00	10	26.5	3	50.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:10:20	17	26.6	3	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:10:40	17	26.6	3	42.00	ON	OFF	Healthy	ON	Active	Suppressed
18/03/24	20:10:51	18	26.6	3	36.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:11:00	11	26.5	3	56.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:11:20	11	26.4	2	42.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:11:40	12	26.3	2	28.00	ON	OFF	Healthy	OFF	Active	Suppressed
18/03/24	20:12:00	11	26.1	2	42.00	ON	OFF	Healthy	OFF	Active	Suppressed

LGM Number: 1469      LGM Type: W37      Shed Name: HEDRA  
 File Name: 18-03-24      Run Time: 184.51910144      Print: 1800 Sec

Locate

Save

Show Selected

Show All

Print

Exit