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No. EL/4.2.15/Gen

Date 14.12.2018

प्रमुख विद्युत अभियंता,	Principal Chief Electrical Engineers,
1. मध्य रेलवे, मुम्बई सीएसटी-400 001	1. Central Railway, Mumbai, CST-400 001.
2. पूर्व मध्य रेलवे, हाजीपुर-844 101	2. East Central Railway, Hazipur-844 101.
3. पूर्व तटीय रेलवे, चन्द्रशेखरपुर, भुवनेश्वर-751 017	3. East Coast Railway, Chandrashekharpur, Bhubaneswar -751 017.
4. पूर्व रेलवे, फेयर्ली प्लेस, कोलकाता-700 001	4. Eastern Railway, Fairlie Place, Calcutta-700 001.
5. उत्तर मध्य रेलवे, ब्लाक ए-2, सुबेदारगंज इलाहाबाद-211 033	5. North Central Railway, Block-A, Subedarganj, Allahabad- 211 033.
6. उत्तर रेलवे, बडौदा हाऊस, नई दिल्ली-110 001	6. Northern Railway, Baroda House, New Delhi-110 001.
7. उत्तर पश्चिम रेलवे जयपुर- 302006	7. North Western Railway, Jaipur- 302 006
8. उत्तर पूर्व रेलवे गोरखपुर- 273001	8. North Eastern Railway, Gorakhpur-273001
9. उत्तर पूर्व फ्रेन्टीयर रेलवे मालीगौव गुवाहाटी-781011	9. North East Frontier Railway, Maligaon, Guwahati-781011
10. दक्षिण मध्य रेलवे, रेल निलायम, सिकंदराबाद-500 371	10. South Central Railway, Secunderabad-500 071.
11. दक्षिण पूर्व मध्य रेलवे, बिलासपुर- 495 004	11. South East Central Railway, Bilaspur-495 004.
12. दक्षिणपूर्वरेलवे, गार्डेनरीच, कोलकाता-700 043	12. South Eastern Railway, Garden Reach, Kolkata-700 043.
13. दक्षिण रेलवे, पार्क टाउन, चेन्नई-600 003	13. Southern Railway, Park Town, Chennai-600 003.
14. दक्षिण पश्चिम रेलवे हुबली-580020	14. South Western Railway, Hubli- 580020
15. पश्चिम मध्य रेलवे, जबलपुर-482 001	15. West Central Railway, Jabalpur-482 001.
16. पश्चिम रेलवे, चर्चगेट, मुम्बई- 400 020	16. Western Railway, Churchgate, Mumbai-400 020
17. चित्तरंजन रेल इंजन कारखाना, चित्तरंजन- 713 331	17. Chittaranjan Locomotive Works, Chittaranjan-713 331
18. डीजलरेलइंजनकारखाना, वाराणसी-221004	18. Diesel Locomotive Works, Varanasi-221 004.

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2018/EL/SMI/ 0326 (REV. '0')

1.0 Title:

Setting of number of pulses/revolution and wheel diameter in Microprocessor based Control & fault diagnostic System (MPCS) V3 for correct indication of speed in MPCS.

2.0 Brief History:

- 2.1 Some of the Railways had reported mismatch in the speed indicated on MPCS V3 and speedometer provided in the locomotive.
- 2.2 MPCS V3 does not use separate pulse generator (**PG**) for speed indication, rather pulse from junction box of microprocessor based **Electronic Speed cum energy MON**itoring system (**ESMON**) is used by MPCS V3 for calculating the speed.

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- 2.3 Speed indicated by the MPCS will depend up on the number of pulses per revolution & wheel diameter of the locomotive.
- 2.4 Number of pulses/ revolution & wheel diameter is configurable system parameters, which can be configured in settings of MPCS V3 by authorised users.
- 2.5 If there is mismatch in the actual number of pulses generated by pulse generator (PG) of ESMON and number of pulses/ revolution specified in the system parameters, or between the wheel diameter setting in ESMON & MPCS, speed indicated by the MPCS will not match the speed indicated by ESMON.

3.0 Objectives

Setting of number of pulses/revolution and wheel diameter with MPCS V3 for correct indication of speed in MPCS.

4.0 Modified Instructions:

- 4.1 Different makes of ESMON pulse generator (PG) gives pulses as per following table:

S.n.	ESMON Make	Nos. of pulses per revolution
1.	M/s Medha	60
2.	M/s Stesalit	60
3.	M/s Laxven	30
4.	M/s AAL	200

- 4.2 For correct indication of speed in MPCS V3 number of pulses/ revolution to be configured correctly as per above table.
- 4.3 For correct indication of speed in MPCS V3, wheel diameter also to be configured correctly after wheel turning of the locomotive.
- 4.4 For setting of the number of pulses/ revolution and wheel diameter, process defined in paragraph 6.8 of Technical circulator no. RDSO/2012/EL/TC/0119 Rev'1" dated 20.03.2013 and its **Amendment no. 2 dated 28.11.2018** to be used, which is reproduced below:

Settings screen appears when user presses the soft key '6' in the default screen. This is password protected area which is set by authorized maintenance staff.

Provision is given to change the locomotive settings like loco type, wheel diameter, loco shed & Railway name. Alphanumeric keys appear on the screen depending on the selected option.

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Loco no. : 00000
17:51 :17
 18/07/12

Software RELEASE '0'
 ISOLATION STATUS
 NIL

NOTCH IND.
00

Settings

Enter Password: *****

1 /- 2 ABC 3 DEF 4 GHI 5 JKL 6 MNO 7 PQRS 8 TUV 9 WXYZ 0

Loco no. : 00000
17:51 :13
 18/07/12

Software RELEASE '0'
 ISOLATION STATUS
 NIL

NOTCH IND.
00

Settings

1. Loco Setting
 2. System Parameter Setting
 3. Exit

Main Menu Crow Message Loco Info Loco Status Isolation Status Settings GDS Bypass GDSB Bypass QCVAR Bypass G114 Bypass

Loco Setting

1	Loco Type	WAG-7	
2	Loco No.	WAG-5	
3	Base Shed	WAM-4	
4	Railway	WAP-4	
5	Date of Commissioning (DD/MM/YY)		
6	Last Inspection Done (DD/MM/YY)	Minor	IA
		Major	AOH
7	Next Inspection Due (DD/MM/YY)	Minor	IA
		Major	AOH
8	Last POH/MTR Done (DD/MM/YY)	MTR	
9	Total Distance Travelled (KM)		

1 /- 2 ABC 3 DEF 4 GHI 5 JKL 6 MNO 7 PQRS 8 TUV 9 WXYZ 0

System Parameter setting						
Sl. No.	Description	units	Value	Min	Max	Default
1	QCVAR pickup	Volts	162	140	180	160
2	QCVAR dropout	Volts				
3	Q20 pickup	Volts	865	820	900	865
4	Q20 dropout	Volts	760	720	800	760
5	Q30 pickup	Volts	265	240	280	265
6	Q30 dropout	Volts	215	200	250	215
7	QD pickup	Volts	150	120	200	150
8	QD dropout	Volts	50	40	100	50
9	QF pickup	Volts	860	720	900	860
10	QF dropout	Volts	760	700	800	760
11	Wheel Diameter	mm	1024	800	1200	1024
12	Number of Pulse/Rev		60	30	200	60

1 2 3 4 5 6 7 8 9 0

5.0 Application to the Class of Locomotives:

25 KV AC conventional electric locomotives fitted with MPCS version-3.

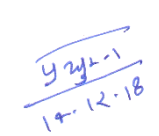
6.0 Agency of Implementation:

All Electric Loco Sheds and POH Workshops.

7.0 Periodicity of Implementation:

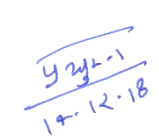
- (i) After wheel turning.
- (ii) During minor schedule inspections
- (iii) During overhauling (TOH/IOH/POH)

8.0 Reference: Nil


(P.K. Saraswat)
for Director General (Elect.)

Enclosures: Nil

COPY TO: AS PER STANDARD MAILING LIST No. EL-M-4.2.3-19 (LATEST REVISION).


(P.K. Saraswat)
for Director General (Elect.)