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Note: Modification indicated in Red ink at sheet no. 5 & 7 of specification

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**SPECIFICATION  
FOR  
SET OF CABLE DISCONNECTION TM-1 to TM-4 FOR  
WAP-5  
THREE PHASE ELECTRIC LOCOMOTIVES**

Specification No : CLW/ES/3/0424

Issued on 25.11.1999

ENCLOSURE

DRG. No. CLW/ES/3/SK-1/0424

**ISSUED BY**

DY. CHIEF ELECTRICAL ENGINEER/D-I  
CHITTARANJAN LOCOMOTIVE WORKS  
CHITTARANJAN - 713331  
Dist: WEST BURDWAN  
WEST BENGAL (INDIA)

Prepared By	Checked By	Approved By
<b>TANUSHREE ROY</b> <small>Digitally signed by TANUSHREE ROY Date: 2023.04.13 12:50:09 +05'30'</small> SSE/ Drg. (ELECT)	<b>JAYVEER KUMAR</b> <small>Digitally signed by JAYVEER KUMAR Date: 2023.04.13 12:52:00 +05'30'</small> SSE/ Drg. (ELECT)	<b>RAVI YADAV</b> <small>Digitally signed by RAVI YADAV Date: 2023.04.13 12:57:52 +05'30'</small> Dy.CEE/D-I

Signature Not  
Verified  
Digitally signed by  
JAYVEER KUMAR  
Date: 2023.04.19  
10:51:03  
Reason: IRPS-CRIS  
Location: New Delhi

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ALTERATION RECORD SHEET

SL.No.	Date of Amendment	Page No.	Alteration	Reason	Authority
1.	20.02.2003	4	A	Fire Retardant/ Self-extinguishing clause included in Page No.4, Sl.No.4.1.	Sd/-
2.	23.02.2018	5	B	Material of compression plate and spacer has been changed from Bakelite to Glass reinforced Polyester dough moulding compounds Gr-D3 as per IS 13411 with approval of Dy.CEE/D-I on dtd:- 23.02.2018.	Sd/-

**Specification has been digitized and all alterations have been incorporated.**

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### SPECIFICATION FOR TRACTION MOTOR CABLE DISCONNECTION

#### 1. SCOPE :-

This specification applies to TRACTION MOTOR CABLE DISCONNECTION TM- 1 to TM-4 for 3-Phase, 5000 HP WAP-5 class locomotive for 25 kV AC 50 Hz system.

#### 2. CLIMATIC & ENVIRONMENTAL CONDITION:-

Maximum atmospheric temperature	Under Sun: 70°C ,In shade.: 50°C
Humidity	100% saturation during rainy season
Reference site conditions:	
i) Ambient Temp.	Max. 55°C Min. 0°C
ii) Humidity	60%
iii) Altitude	160 m above mean sea level
iv) Rainfall	Very heavy in certain areas. The locomotive will be designed to permit its running at 10 Km/hr. in flood water level of 102 mm above rail level.
Atmosphere during hot weather	Extremely dusty and desert terrain in certain areas
Coastal areas	Locomotive and equipment will be designed to work in coastal areas in humid and salt laden atmosphere
Vibration	The equipment , subsystem and their mounting arrangement will be designed to withstand vibrations and shocks encountered in service as specified in corresponding standard otherwise prescribed

#### 3. STANDARDS :-

The relevant IEC, BS, DIN, Standard & Indian standard specification shall apply with respect to all materials used in the manufacture of the item.

3.1 All the non-metallic parts should be Fire retardant/ self-extinguishing type as per IS-11731 or any other equipment DIN, IEC standard.

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<b>TANUSHREE ROY</b> <small>Digitally signed by TANUSHREE ROY Date: 2023.04.13 12:50:56 +05'30'</small> <b>SSE/ Drg. (ELECT)</b>	<b>JAYVEER KUMAR</b> <small>Digitally signed by JAYVEER KUMAR Date: 2023.04.13 12:53:57 +05'30'</small> <b>SSE/ Drg. (ELECT)</b>	<b>RAVI YADAV</b> <small>Digitally signed by RAVI YADAV Date: 2023.04.13 12:56:58 +05'30'</small> <b>Dy.CEE/D-I</b>

Note: Modification indicated in red. *Raj*

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4. **SCOPE OF SUPPLY & TECHNICAL DATA :-**

SL.NO	DESCRIPTION OF MATERIALS	IDENT. NO.	DRG. NO.	QTY / LOC O	MATERIAL
1.	T.M. cable Disconnection	3EHP230120P0001	CLW/ES/3/SK-1/0024	4	
One T.M. Cable Disconnection consists of:-					
1.1	Compression Plate	HBTB416302P0001	CLW/ES/3/SK-1/0024	6	Glass reinforced polyester dough moulding compounds GrD3 as per IS:13411
1.2	Bracket	3EHP431227 P0001	CLW/ES/3/SK-1/0024	2	SST 6xCrNiTi 1810 Cold rolled
1.3	Insulating Plate	3EHP431229P0001	CLW/ES/3/SK-1/0024	4	Polyester Resin
1.4	Threaded rod M12 x 190, +3, -0	3EHP230120P0001	CLW/ES/3/SK-1/0024	2	<del>Glass reinforced plastic/ Fibre reinforced plastic</del> *
1.5	Terminal Bar	3EHP431228R0001	CLW/ES/3/SK-1/0024	3	Electrolytic tough pitch Copper Medium cold rolled as per DIN 1787
1.6	Spacer	HBTB416301P0002	CLW/ES/3/SK-1/0024		Glass reinforced polyester dough moulding compounds GrD3 as per IS:13411
1.7	Washer A13/24	NB335050P0610	CLW/ES/3/SK-1/0024	4	SST
1.8	Con Washer 13/29	3EHW470066P1120	CLW/ES/3/SK-1/0024	8	Sprg. Steel
1.9	Hex. Nut 0.8D/M12	NB332600P0514	CLW/ES/3/SK-1/0024	4	SST

1.10 Standard fasteners of M/s TVS, M/s LPS, M/s Un-Brako and Spring Washers of M/s FORBES make only to be used.

\* Material of Threaded Rod: SST rod covered with Fibre reinforced plastic (FRP)

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#### 4.1 NAME PLATE :-

The tenderer shall fix Name Plate on the equipment indicating (i) Manufacturer's Name and monogram (ii) Range of electrical rating (iii) Month and year of manufacturing (iv) Sl. No. of the equipment.

#### 5. DOCUMENTS TO BE SUPPLIED BY THE TENDERER :-

The tenderer shall interalia furnish the following in 3 copies along with the quotation.

- I. Clausewise comments on the specification and test programme.
- II. Detailed drawings.
- III. Past experience with supporting papers (if any).
- IV. Past test reports (if any).

#### 6. TECHNICAL DOCUMENTS TO BE SUPPLIED BY THE SUPPLIER:-

The following documents shall be supplied by the supplier as a part of the contract

- |  |              |
|--|--------------|
| i. Type test reports                         | : 10 Copies  |
| ii. Routine test reports along with each set | : 04 Copies. |
| iii. Maintenance Manual                      | : 20 Copies  |
| iv. Detailed drawings                        | : 06 Copies  |

#### 7. TESTS

The following type and routine tests shall be conducted:-

7.1	Type Tests	Routine Tests
7.1.1	Checking dimensional details with respect to approved drg.	Same as in type test
7.1.2	Checking quality of workmanship and their conformity with the standard specification	Same as in type test
7.1.3	High voltage test	-----
7.1.4	Milli volt drop test	-----

#### 8. QUALITY ASSURANCE

Quality assurance should be as per ISO 9000.

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