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ENCLOSURES:

Drg. No. CLW/ES/3/SK-1/0201/E

Drg. No. CLW/ES/3/SK-2/0201/E

TECHNICAL SPECIFICATION FOR

CONTACTOR AUXILIARIES

FOR 3-PHASE ELECTRIC LOCOMOTIVES.

Specification No : CLW/ES/3/0201 ALT.E

ISSUE DATE: 09.09.2017

ISSUED BY :

**DY.CHIEF ELECTRICAL ENGINEER/D-I
CHITTARANJAN LOCOMOTIVE WORKS
P.O.CHITTARANJAN – 713331
DIST.BARDHAMAN (WEST), WEST BENGAL (INDIA)**

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ALTERATION RECORD SHEET

Amendm. No.	Date	Alt.	REASON	INITIAL
1.	03.02.2003	A	All the non-metallic parts of this item should be fire retardant/self-extinguishing properties as per IS:11731 (Part-I&II) or any other equivalent DIN, IEC Standards. This clause has been added in sheet no. 5	S/d-
2.	05.08.2013	B	As per Modification sheet no. RDSO/2012/EL/MS/0413 Rev "0" dated 28.09.12 two nos. LADN22(Aux. Contact) and two nos. LADN13 (Aux. Contact) are required in place of 04 nos. LA1DN13 (Aux. Contacts) in sheet no. 4&5.	S/d-
3.	11.09.2017	C	The Specification has been retyped.	S/d-
4.	17.03.2021	D	i) Typographical mistake at sheet no. 5, 'Breaking' in place of 'making'. ii) Aux. Contact LADN22P is included along with LADN13 at sheet 6, clause 10. iii) Qty. of Aux. Contact LADN22P is changed at sheet 6 and in note (ii), previous qty. has been struck out. iv) Line diagram of Contactor Aux. at sheet 5 is rectified as the supplied contactor is a 3-pole. v) Para 8,9 and note at sheet 6 is deleted as per note: ELDD/Misc dt. 26.02.2021. vi) Mounting and Overall dimensions shall be as per above drawing and are for 'guidance only', included in sheet 7. vii) 'For guidance only', is included in sheet 8. viii) LADN22P is replaced by 2NO+2NC LADN13 is replaced by 1NO+3NC	S/d-

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5.	XX.XX.2024		ix) Technical data sheet has been changed as contactor rating changed from 150A to minimum 200A as per guideline of RDSO vide letter no EL/2.1.8 dated 11.07.2024.	
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Note: The Specification has been digitized and all the alteration have been incorporated.

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SPECIFICATION FOR CONTACTOR AUXILIARIES

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SPECIFICATION FOR CONTACTOR AUXILIARIES

1. SCOPE

This specification covers the manufacture, supply, installation, testing and commissioning of CONTACTOR AUXILIARIES for 3-Phase Electric Locomotive for 25 kV , 50 Hz system.

2. CLIMATE AND ENVIROMENT CONDITIONS

Sl. no.	Climate and Environment conditions	Range
a)	Maximum atmospheric temperatures	Under Sun: 70°C In shade : 50°C.
b)	Humidity	100% saturation during rainy season.
c)	Reference Atmospheric Temperature:	
i)	Ambient Temperature	max. 47°C , min 0°C
ii)	Normal Humidity	60%
iii)	Altitude	1000 m above mean sea level.
iv)	Rainfall	Very heavy in certain areas. The locomotive will be designed to permit it's running at 10 Km/hr-in flood water level of 102 millimeter above rail level.
d)	Atmosphere during hot weather	Extremely dry and desert terrain in certain areas.
e)	Coastal areas	Locomotive and equipment will be designed to work in coastal areas in humid and salt laden areas.
f)	Vibration	The equipment , subsystem and their mounting arrangement will be designed to withstand vibrations and shocks as specified in corresponding IEC publications unless otherwise prescribed.

3. STANDARD

IEC : 60947-1
IS : 11731 (Part I&II)

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4. TECHNICAL DATA

Contactor Auxiliaries consists of 3 sub-assemblies viz

- A) Contactor
- B) Spare Coil for Contactor
- C) Auxiliary Contactor Block for Contactor

(A) CONTACTOR:

- Maximum Power Rating : ~~160 KW~~ **132KW**
- Rated Insulation Voltage : ~~1500V~~ **1000V**
- Rated Operational Voltage (Ui) : ~~1000V~~ **<= 1000V AC 50/60 Hz**
<= 460V DC
- Rated Making Capacity ~~1ms at 415/~~ at 440V : ~~1700A~~ **2720A**
- Rated Breaking Capacity at 440V : ~~1500 A~~ **2050A**
- Short Time Rating : ~~1200 A~~ **1.8 KA ----10s**

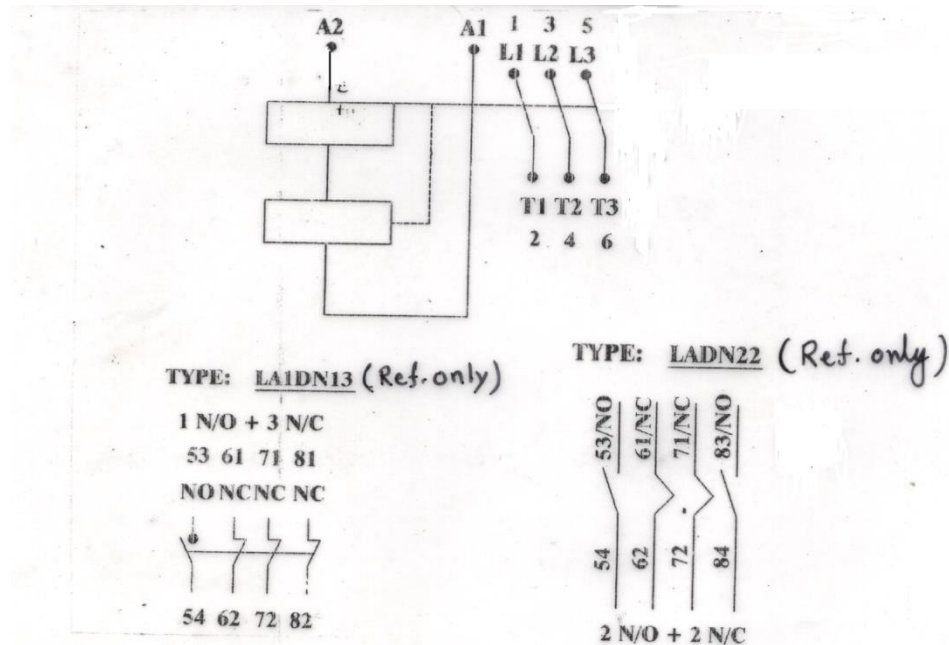
(B) SPARE COIL FOR CONTACTOR

- Minimum and Maximum Operating Range : ~~77 V~~ **0.77Un to 1.2Un**
Maximum Operating Range : ~~157 V~~
- Average Resistance 20° C ±10% (Inrush)* : ~~13.2 Ω~~ **9.67 Ω (Approx.)**
- Average Resistance 20° C ±10% (Sealed)* : ~~1920 Ω~~ **1840 Ω (Approx.)**

NOTE: * for reference only

(C) AUXILIARY CONTACTOR BLOCK FOR CONTACTOR

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5. TESTS

The Equipment should be tested as per IEC 60947-1 & IS 11731 (Part I&II)

6. DIMENSION AND DRAWING:

The equipment shall be manufactured as per :-

- Drg. No. i) CLW/ES/3/SK-1/0201/E
ii) CLW/ES/3/SK-2/0201/E

7. DOCUMENTS TO BE SUPPLIED BY THE TENDERER:

The tenderer shall furnish the following in three copies along with the quotation:-

- Clause wise comments on the specification and test programme,
- Detailed drawings,
- Past experience with supporting papers (if any)
- Past test reports (if any).

8. REFERENCE

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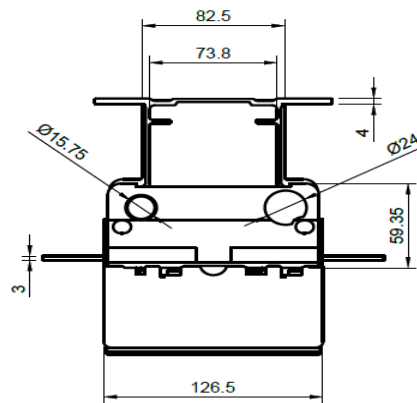
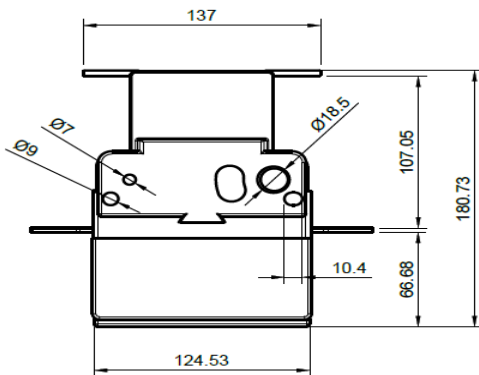
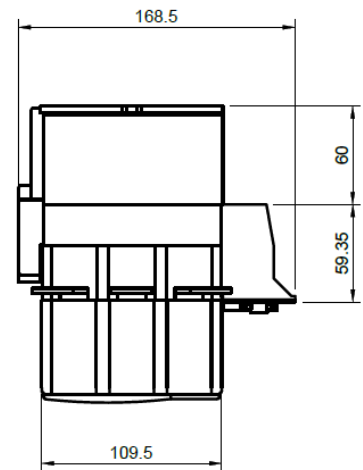
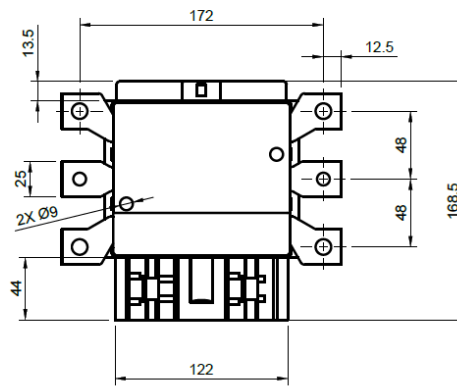
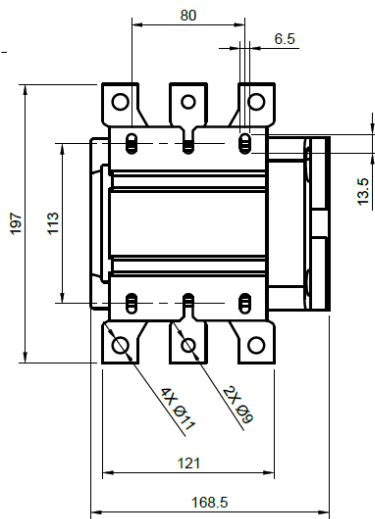
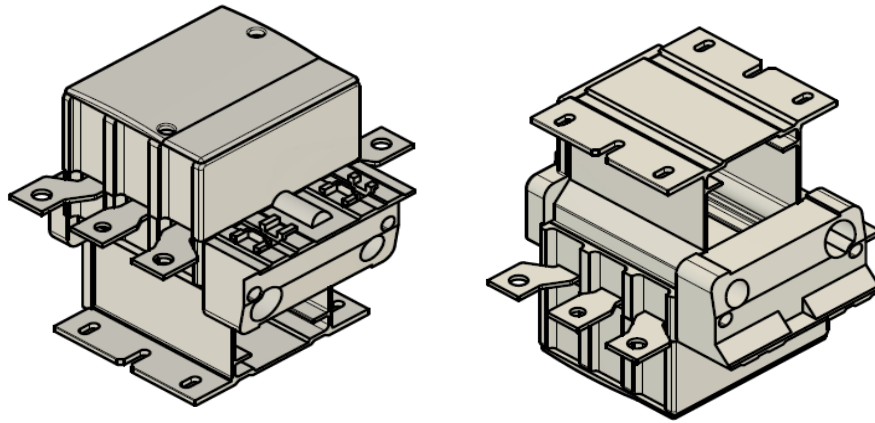
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The equipment used by M/s ABB for WAG-9 class Electric Locomotive:
Type : TEL-LCIF150-LX4FF090 with Aux. Contact LADN 13 & LADN22P
Supplier TELEMECANIQUE, Switzerland Schematic Position: 52

Note:-

- (i) All the non-metallic parts of this item should be fire retardant/self-extinguishing properties as per IS:11731 (Part-I&II) or any other equivalent DIN, IEC Standards.
- (ii) As per Modification sheet no. RDSO/2012/EL/MS/0413 Rev "0" dated 28.09.12 four nos. 2NO+2NC (Aux. Contact) and two nos. 1NO+3NC (Aux. Contact) are required.

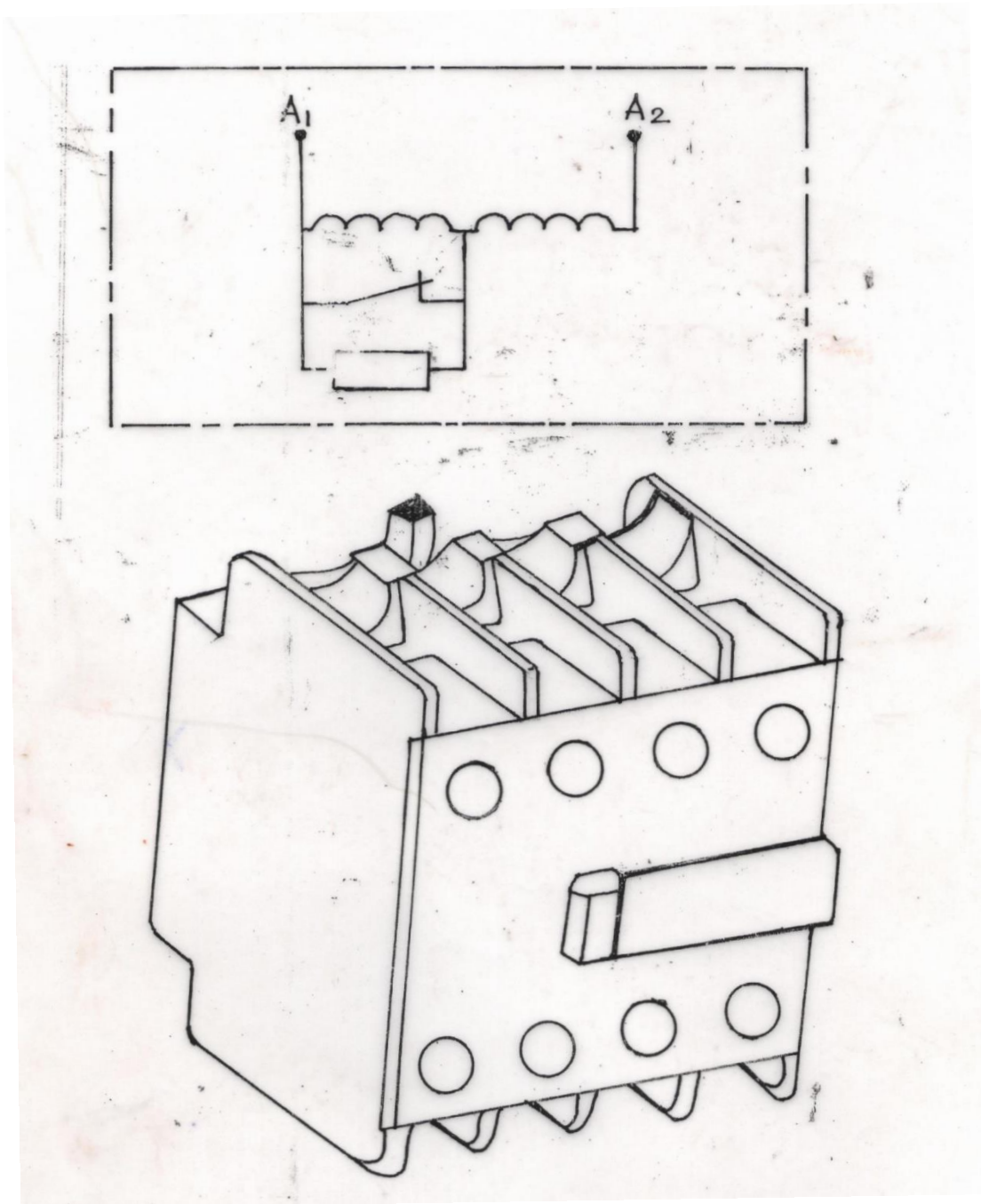
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Above dimensional details are for guidance only


Drawing No: CLW/ES/3/SK-1/0201/E

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AUXILIARY CONTACT

Note: For guidance only

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Checked By: AEE/SEE		 Date: 09.09.2017 SPECIFICATION FOR CONTACTOR AUXILIARIES SPEC. NO. CLW/ES/3/SK-2/0201/E
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