

14

TENDER SPECIFICATION

NO. CLW/ES/3/0448

Alt.	A				
Sheet	08				

DRG.Nos: CLW/ES/3/0448

TOTAL NO. OF SHEETS - 07 + 01

SPECIFICATION

FOR

CAPACITOR INPUT FILTER AUXILIARY CONVERTER

(WAG-9& WAP-5) 3-PHASE ELECTRIC LOCOMOTIVES)

ISSUED BY:


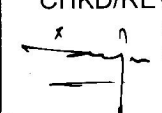
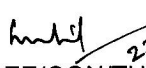
DY.CHIEF ELECTRICAL ENGINEER/CON/TU-II
CENTRE FOR DESIGN AND DEVELOPMENT
CHITTARANJAN LOCOMOTIVE WORKS

SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN.	CHKD/REV	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA			
	<i>[Signature]</i> SDA / E.-II	<i>[Signature]</i> AEE/SKD	DATE: 18-12-1999 NO: CLW/ES/3/0448			
	APPROVED BY <i>[Signature]</i> DY.CEE/CON/TU - II		ALT	A		

**SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER
FOR
WAG-9 & WAP-5, 6000 HP, 3-PHASE, 25 kV, 50 Hz AC LOCOMOTIVE**

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SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN. 	CHKD/REV 	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA					
	SDA / EMI	AEE/SKD	DATE: 18-12-1999 NO: CLW/ES/3/0448					
	APPROVED BY  22/12/99 DY.CEE/CON/TU - II		ALT	A				

SL NO.	DATE	PAGE NO.	ALTERATION NO.	REASON	AUTHORITY
1	23.03.21	5,6,7	A	<p>(i) Para 2.0 & 10.0 are deleted from Page no. 5 and 6.</p> <p>(ii) 'Mounting & overall dimensions shall be as per above drawing. The other dimensions of drawing are for guidance only', is included in Page no 7.</p> <p>This has an approval as per note no. ELDD/Misc dt 26.02.2021.</p>	<p>trsh - 23/03/21</p>

DRN. *Longy in the*

AEE/SEE

CHKD.

SPECIFICATION FOR
Capacitor Input Filter
Auxiliary Converter

DY.CEE/D

CHITTARANJAN LOCOMOTIVE WORKS
WEST BENGAL, INDIA.
NO. CLW/ESB/0448

ALT A

1 Scope

This specification covers the manufacture and supplies of CAPACITOR INPUT FILTER FOR AUXILIARY CONVERTER of WAG-9 & WAP-5 , 6000 HP , 3-phase , 25 Hz, AC locomotive.

2 SERVICE CONDITION

Climatic and Environmental Condition:

Maximum Atmospheric Temperature : + 70°C (in Sun) & + 50°C (in shade)

Ambient Temperature (operating) : - 20...+70°C

Ambient Temperature (Storage) : -30...+80°C

Normal Humidity : 60%

Maximum Humidity : 100% saturation during rainy season.

Altitude : 160 m. above sea level .l

Rain Fall : Very heavy in certain areas

Atmosphere During Hot Weather : Extremely dusty and desert terrain in certain Areas.



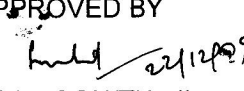
Coastal Areas : The Locomotive and the equipment will be . designed to work in humid and laden atmosphere.

Vibration mounting : The equipment sub-system and their arrangement will be designed to withstand vibration and shock encountered in

service as specified in relevant IEC specification viz.

IEC-
IEC for 68, 77,1287-1,DIN-40040

Power Electronic Capacitors.

SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN.  SDA / E -II	CHKD/REV  AEE/SKD	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA DATE: 18-12-1999 NO: CLW/ES/3/0448					
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3 TECHNICAL DATA

Capacity	C	0.22 μ F
Tolerance	ΔC	$\pm 10 \%$
Nominal voltage	U_N	2000 V
Effective alternating voltage	U_{eff}	1380 V
Frequency	f_N	1700 Hz
Power	P_N	11,2 Kvar
Current	I_N	5.1 A
Inductance	L	120 nH
Relative to	V max at V_u	0 °C 53 °C

Limit Data

Test voltage		
Surface-Surface	U_{B-B}	3000 V~ 10 sec
Surface housing	U_{B-g}	-
Dissipation factor	$\tan \delta$	$< 3 \cdot 10^{-4}$
Time constant	$R_{is} \cdot C \Rightarrow$	3000 s

Test data


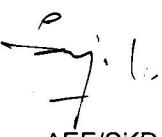

Peak voltage	U_s	4000V
Slew rate	$du/dt \max$	500 V/ μ s
Effective current	I_{max}	20 A
Lower limit of temperature	$V \min.$	- 60 °C
Upper limit of temperature	$V \max.$	+ 75 °C
Stronging temperature	V_L	- 60+ 25 °C
Humidity class		C
Life time	A_b	100,000 h
Failure rate	p_Q	300 failures per 19 components

Construction data

Weight	G	ca. 0.150 Kg
Insulation group		D
Impregnation		PHX

Execution: -

- Vibration resistant, convenient for vehicles
- Mounting in standing or lay - down position

SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN.  SDA / E -II	CHKD/REV  AEE/SKD	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA DATE: 18-12-1999 NO: CLW/ES/3/0448						
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4. SUBMISSION OF TENDER QUOTATION

- 4.1 All tender documents including the quotation shall be submitted in duplicate including any correspondence till the contract is finalised.
- 4.2 The Tenderer shall give sufficient information to prove that his factory has adequate facilities and capacity to manufacture the Set of Connectors to meet fully the technical requirements of the specification and quality of materials and workmanship.
- 4.3 Quotation shall not be considered complete unless all information is furnished and are therefore liable to be rejected.
- 4.4 Detailed drawings of the Set of Connectors should be submitted for approval of purchaser.
- 4.5 Full Technical documents and drawings to be furnished by the Supplier as part of the contract.

5. APPROVAL OF SAMPLE :

- 5.1 The supplier shall make available at least two prototypes of the equipment proposed to be supplied by him for inspection and tests at his works and advise the Dy.Chief Electrical Engineer, (D & D), Chittaranjan and Controller of Stores, Calcutta as and when he is ready with the prototype and necessary testing and measuring apparatus and facilities for carrying out the tests.
- 5.2 After the above tests if it is considered necessary by the Dy.CEE/CON/TU's authorized representative to carry out any further tests or trials of the prototype at Chittaranjan, the supplier will arrange for the same by the quickest means.
- 5.3 The supplier shall not offer equipments of series production to the Inspector authorized under the contract until the prototype has been finally approved. The supplier shall provide all facilities to the inspecting officer at his works, to inspect and test the equipment.



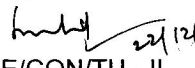
6. TESTS :

Type test and routine test shall be carried out according to Relevant International/Indian Standards to be specified to the successful tenderer.

7. TECHNICAL DOCUMENTS TO BE SUPPLIED BY THE SUPPLIER :

- i) Type Test Reports : 10 Copies
- ii) Routine Test Reports : Along with each set : 4 Copies
- iii) Maintenance Manual : 20 Copies
- iv) Detailed drawings : 6 copies

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SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN. 	CHKD/REV 	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA					
	SDA / E	AEE/SKL	DATE: 18-12-1999 NO: CLW/ES/3/0148					
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8. **NAME PLATE :**

The tenderer shall fix nameplate on the equipment including -

- i) Manufacturer's Name & Monogram/Brand
- ii) ~~Range~~ electrical ratings in Watts.
- iii) Maximum Rated Voltage
- iv) Month & Year of Manufacture
- v) S.No. of equipment.

9. **QUANTITY/LOCC.**

Quantity/Loco : 3

10. **QUALITY ASSURANCE AS PER ISO 9000**

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— The tenderer shall confirm that the equipment's are as either used in 3-phase AC Locomotive manufactured by ABB. for INDIAN RAILWAYS or similar.

...TYPE: (For Ref. only) (A)

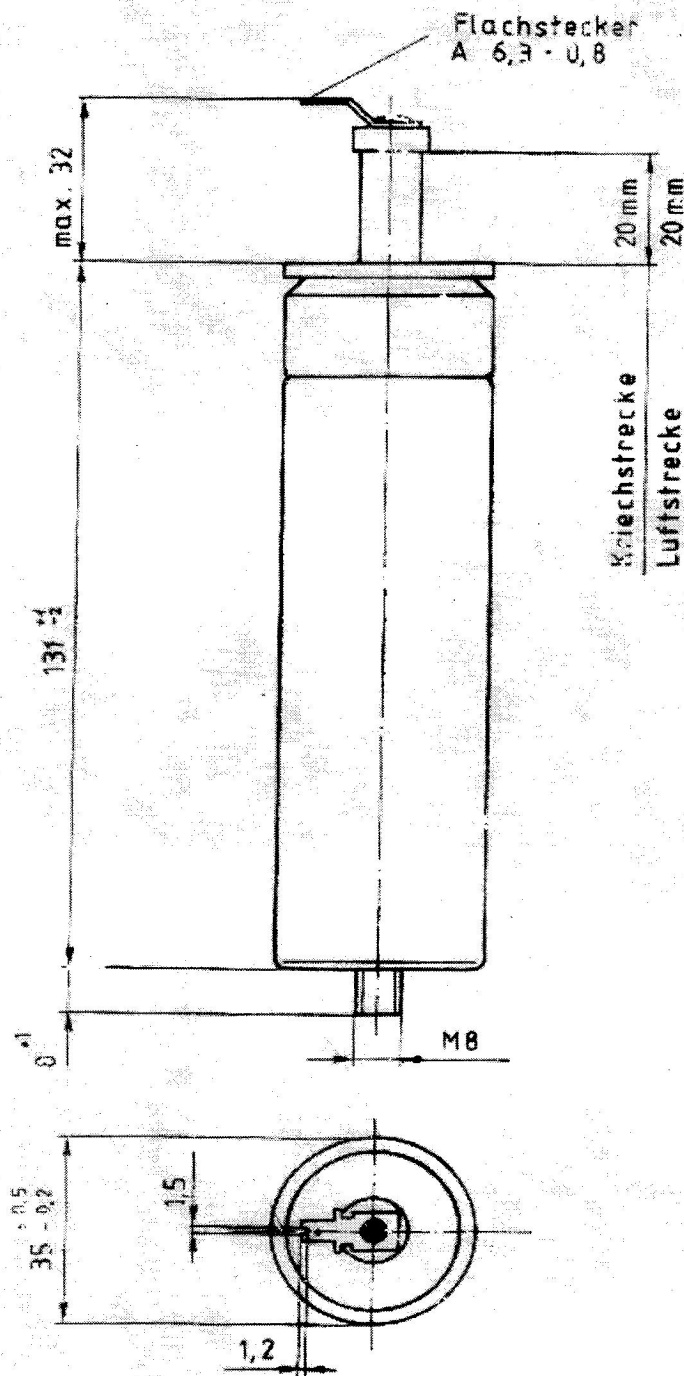
B 25990-S1224-K7
Ident-No- HIES309976 P0001
Schema Fos. No:- 49.1 In BUR

12. **REFERENCE**

This specification has the reference to the original manufacturer as follows :

M/S. SIEMENS ALBIS AG
ALBISRIEDERSTR.245,ZURICH
Ph: 01/495 31 11, FAX: 01/495 53 90

SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN. <i>Baner</i>	CHKD/REV <i>7</i>	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA					
	SDA / E -II	AEE/SKD	DATE: 18-12-1999 NO: CLW/ES/3/0448					
	APPROVED BY <i>24/12/99</i> DY.CEE/CON/TU - II		ALT	A				



Note: Mounting & overall dimensions shall be as per above drawing. The other dimensions of drawing are for guidance only. (A)

SPECIFICATION FOR CAPACITOR INPUT FILTER AUXILIARY CONVERTER	DRN.	CHKD/PEV	D & D CENTRE CHITTARANJAN LOCOMOTIVE WORKS WEST BENGAL, INDIA					
	<i>Baner</i>	<i>P. J.</i>	DATE: 18-12-1999 NO: CLW/ES/3/0443					
	SDA / E-II	AEE/SKD	APPROVED BY					
	<i>hnd</i> 22/12/99 DY.CEE/CON/TU - II		ALT	A				