

EDML-056

**SPARES OF SWITCHBOARD CABINET OF
VARIOUS TYPES OF LHB COACH**

S.No	Description of spares	Drawing No./Part no.	Qty.
1	plug-in contact SKH2F 32 S (z/b)	817485	2
2	supply generator 1 contactor LS 90K.11; AC 440V+10/-20%; 50Hz	AEG	1
3	Air circuit breaker CN-CS 800C 3x750V; 800A; 6NO + 6NC CT for 240...300Amps DN1E Voltage release MV Earth Fault Release 30,40,50%	L&T	1
4	ammeter NP72 battery 100-0-100A=/60-0-60 mV cl.1.5	NP72 100-0-100A=/60-0-60mV cl.1.5 of Muller + Ziegler	2
5	Ammeter NP72 0-100A; 200A cl.1.5; for current transformer 100/1 A	NP72, 0-100A; 200A cl.1.5 for current transformer 100/1A of Muller + Ziegler	2
6	Ammeter NP72 class 1.5; CT 400/5 A; scale 0...400/800 A	Muller + Ziegler	2
7	auxiliary contactor SH04.31, DC24V brake 17-30 V DC	910-302-141-W50 of M/s AEG	2
8	auxiliary contactor SH04.31, DC110V controller o.k. 77-137 V DC	910-302-141-W80 of M/s AEG	2
9	auxiliary contactor SH4.31, DC24V with diode water pump 24 V DC	910-302-719-W5 701323 of AEG (+Lutze)	2
10	Auxiliary contactor SH 4.22, DC 24 V with diode ACB 1 off	AEG	2
11	Auxiliary contactor SH 4.44, DC 24 V with diode Feeder 1 ON	AEG	2
12	Auxiliary contactor SH 4.31, DC 24 V with diode Overcurrent feeder 1	AEG	2
13	Auxiliary contactor SH 8.44, DC 24 V with diode Feeder 2 ON	AEG	2
14	i) PEN Earth Neutral bus bar support - 2nos width 30mmx10mm ii) Cu bus bar 30x10x - 1no iii) Brace terminals - 14nos	01489 01625 01318 of M/s Wohner	2
15	Contactors LS4K.01, DC110V (with diode) condenser fan 1 77-137 V DC	910-304-105-WJO 910-304-594-000 of AEG	5

16	Contactors LS 5K-4.00, DC110V with diode 1HS 7K.01 2HS 7K.10 lighting 77-137 V DC	910-304-165-WJO 910-304-594-000 910-304-551 910-304-550 of AEG	5
17	Contactors LS11K-4.00, DC110V (with diode 1HS 7K.10)) lighting 77-137 V DC	910-304-265-WJO 910-304-594-000 910-304-550 of AEG	5
18	Contactors LS18K.00, DC110V (with diode 1HS 7K.01) compressor unit 1.2 77-137 V DC	910-304-307-WJO 910-304-594-000 910-304-551 of AEG	5
19	Contactors LS45K-11, AC240V, 50Hz (with 1HS 7K.01 2 HS 7K.10) local main supply 2 168-300 V AC 50 Hz	910-304-401-810 910-304551 910-304-550 of AEG	2
20	Contactors LS45K-4.00, DC110V (with varistor and aux. Cont. 1HS 7K.01)) local main supply 77-137 V DC	910-304-418-WJO 910-304-595-580 910-304-551 of AEG	1
21	contactors LS 90K4.11 DC 110V net1,aux.contact HS8K11 77-137 V DC; AC3; 750V varistor LV3KK 70-127V	910-304-468-440 910-304-560-00 910-304-595-580 of AEG	2
22	contactors LS 90K4.11 AC 240 V 50Hz main transformer 77-137 V DC; AC3; 750V 168-300 V AC 50 Hz	910-304-468-440 of AEG	1
23	current transformer 100A/1A; 2.5VA; class 1; UN800V; 50Hz	4NC5117-OC20 Siemens/ WOHNER	10
24	Current transformer 4NC13 25-2CE20-Z A13+A15 400A/5A;5VA;voltage 800V;class 3;	4NC13 25-2CE20-Z Siemens/ WOHNER	10
25	Connecting terminals,630A with 25mm spacer	03197 06811 of Wohner	10
26	Connecting terminals,630A with 100mm spacer	03197 06812 of Wohner	10
27	DC/DC converter 110V/24V, 240W	LCA-150S of M/s COSEL (110V/12V, 2 Nos. in series shall be used to give an O/P of 24V) of COSEL/Powertech	2
28	DC/DC converter 110V/24V, 1.5A PSA 241.5-7IRY	K10Z001.000-00A,Z4/ LCA 50 S-12 of COSEL/Powertech	1
29	DC relay 2NO+ 2NC operating coil voltage 24Vdc	MM00 SS92003 3TB40	4
30	drop out delay time relay ARS time tron, UC 24...240V anti skid	2430 120 01 Schiele/MDS/Entruden/Scheleiren	1

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31	disconnecting and earthing device, 8 pole, 2 way, no-OFF on load, 125A 750V AC (1000V insulation), 2NO+2NC with heavy handle and pad locking arrgt. In earth position, mounted in a stainless steel enclosure suitable for AC23 duty conforming to IS:13947/IEC947	M137.0827407 of M/s Schaltbau or cat. No. 73342SLB32LOGB of Meters/s L&T	1
32	Earth leakage device feeder -2	BENDER	1
33	Fuse 5 x 30 mm fuse for 12 K4 T-2A, 440 volts	Wickmann	5
34	Fuse (with holder) fuse for voltage control 1A; 1.2kV	70 034 049/1 71 034 01 Wohner/ Ferraz	10
35	fuse 5x20mm (fuse clamp at the X1.2) fuse for 33-K3 T1A	19 201 282-122(clamp) Wago/Wickmann/RS	5
36	HRC fuse base 20 Amps NSP type	NSP type of L&T	20
37	High voltage fuse (with holder) net1 Gr.00C 1000V/63A AC; gB	2038603 2138601 Siba/Wohner/ Ferraz	10
38	Low voltage fuse (with holder) switch cabinet Gr.00 25A	3NA3810, 3NH3030 of M/s Siemens 03912,03760 of M/s Wohner	10
39	Low voltage fuse (with holder) local main supply Gr.00 500V/80A	3NA3810, 3NH3030 of M/s Siemens 03918,03760 of M/s Wohner	10
40	Low voltage fuse (with holder) transformer (sec.) Gr.00 500V/100A GL/GG	3NA3810, 3NH3030 of M/s Siemens 03919,03760 of M/s Wohner	10
41	Miniature circuit breaker exhaust fans 3pol, L16A	831-823-005	10
42	Miniature circuit breaker minimal voltage relay 2 pol, L 6A	831-823-201 AEG/MDS	10
43	Miniature circuit breaker lighting control 2 pol, L 10A	831-823-203 AEG/MDS	10
44	Miniature circuit breaker reading lights 2 pol, L 16A	831-823-205 AEG/MDS	10
45	Miniature circuit breaker ventilation fan unit 1 3pol, L10A	831-833-003 AEG/MDS	10
46	Miniature circuit breaker crankcase heater 2pol, L10A	831-833-003 AEG/MDS	10
47	Miniature circuit breaker condenser fan unit 2 3pol, L10A	831-833-003 of AEG/MDS	10
48	Miniature circuit breaker compressor unit 1.1 3pol, L20A	831-833-006 of AEG/MDS	10

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49	Measuring current transformer rated burden 180ohm,10A,50mVA W4-P dia100mm	911 728	2
50	motor protective relay exhaust fan wc MBS 25, 0.16...0.25 A with aux.. Contact HS9.11 and terminal block db	910-201-201 910-292-130 910-293-209 of AEG/L&T	5
51	motor protective relay water pump MBS 25, 1-1.6 A with aux.. Contact HS9.11 and terminal block db	910-201-205 910-292-130 910-293-209 of AEG/L&T	5
52	motor protective relay Ex.fan switching cabinet and pantry MBS 25, 0.4...0.63 A with aux.. Contact HS9.11 and terminal block db.	910-201-203 910-292-130 910-293-209 of AEG/L&T	1
53	minimal voltage relay MR9,110V 34 094-05A	Schaltbau/ Axxon	2
54	Over Current relay Feeder - 1 PK-SR CT 5A; Auxiliary voltage DC24 V	ZAHRA	1
55	press button lighting off rd, dia22.5mm	3SB3 001-0AA21 3SB3 400-0A	10
56	press button night lighting yellow, dia22.5mm	3SB3 001-0AA31 3SB3 400-0A of Siemens/ Group schneider/Teknic	10
57	press button train light on gn, dia22.5mm	3SB3 001-0AA41 3SB3 400-0D of Siemens/ Group schneider/Teknic	10
58	press button insulation test battery net - bu, dia22.5mm	3SB3 001-0AA21 3SB3 400-0A of Siemens/ Group schneider/Teknic	10
59	Power meter 4 conductor 3-phase current DWQ 96 dr DIN E; voltage 3x400 V (transformer 750/415V) CT 400 / 5A;	Muller+Ziegler	1
60	relay S2-24 V,DC 24 V (with base) UIC remote control 24 V DC	S2-24V DC 287-462 of SDS Wago	1
61	rotary switch with marking "L1-L2-L3-0" L1-L2-L3	3LB3 230-6RQ01 of Siemens/L&T	2
62	rotary switch with marking "I-0-II" net1-local main supply-net2 with 1 NO, 1NC (description to be changed)	3SB3 000-0DA11 3SB3 901-0AW 3SB3 400-0A of Siemens/L&T	2
63	toggle switch 0-1 power supply on-off with socket and 2 NC	3SB3 000-2KA11 3SB3 901-0AC 3SB3 400-0D of Siemens/L&T	2

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64	rotary switch with marking "1-2-3-4" plant selection switch with 4NO	3LB3 of Siemens/L&T	2
65	Rotary switch 2-pole 4-position, 25 amps, ON-OFF 4-position, 250 volts for dc isolation	Siemens/L&T	2
66	Solid state relay, control safety loop-1 RD0605-D DC3-32 V	RD0605-D of Carlo Gavazzi	2
67	transformer Single phase, type EAS 1 KVA; 240V/110V	Any other approved make as per Spec no. EDTS091 of Jacke or any other approved make	5
68	3 phase delta connected auto transformer, 0.5KVA, primary input voltage -415 volts +/-, output voltage 0- 415 volts, pre set at 170 V as per drawing no. (3)11.0.792.101-33, page 3 of 12 at annexure- A	Delta	2
69	Time delay relay having a time delay from 0.5 secs to 60 secs with contact and coil voltage of 24Volts dc a) instantaneous 1no+1nc - maintain supply to FSRD & FSS b) Delay (on) 1no+1nc N/O Keep starter motor ckt. open N/C Keep LOP closed	KRTPN-11 ETR500 of BCH/ SIEMENS/ L&T/ GE	1
70	time relay MFS lighting/external power supply/emergency brake 77-137 V DC	2 430 010 02 of schiele	1
71	Vacuum contactor Feeder 1 3TF68 44-8CQ7 voltage 1KV control voltage AC440 V +10/-20% 50 Hz power rating 600 KW by 1KV current 630 amps 4 no + 4 nc	3TF68 44-8CQ7 of Siemens/ABB	1
72	voltmeter NW72 battery 0-150V=	NW72 0-150V= of Muller + Ziegler	1
73	voltmeter NW72 net 1 0-800 V ; 800 V AC	NW72 0-800 V ; 800 V AC of Muller + Ziegler	1
74	Voltage measuring transformer 750/430V, 3 phase, 50Hz, 250VA, class of accuracy 1.0. The conductor shall be enamelled copper conductor. Input and output terminals shall be brought out to suitably rated FRP/SMC terminal board with screws and nuts not less than M5 size. The transformer shall be dual purpose type with one secondary winding, generally conforming to IS:3156 Pt.-I, II & III (with housing).	Design & Prototype Bhasin Packard	2
75	Voltage phase control net1 3AC, 750V, aux. voltage 24-60V AC/DC	BD 9080 of Dold/Gavazzi	1
76	voltage-phase control DPC01DM48.400/480 V ac +/- 15 %, 50-60 Hz with IP20	DPC01DM48 of Dold/Gavazzi	1

[Handwritten signatures]