

Trouble shooting directory for Three Phase Locomotive
(Rev '9' April'16)

Revision History

SN	Revision No.	Date	Revision Details	
			Fault No.	Page No.
1	1	Aug'09	F0104P1, F0902P2, F1001P1, F1002P2 modified	02, 27, 28, 31, 32
2	1, Ammendent 1	Oct'09	F1002P2 modified	31
3	1, Ammendent 2	May'10	Speed not increasing > 1mk/h, moved from SS10 to General part after SS19	33, 40
4	1, Ammendent 3	Oct'10	F0503P1, F0504P1, F0501P2, F0502P2 modified	21
5	1, Ammendent 4	June'11	Bogie isolation procedure modified	-
6	2	April'12	All previous amendments incorporated, Isolation of harmonic filter due to isolation of Bogie1 deleted, in SS02 & SS03 MCE OFF deleted, in SS10 details regarding CCB system added.	9 and many pages
7	3	July'12	F0107P2 added, F1001P2 modified, General part after SS19 deleted	7, 31, 40
8	4	Oct'12	Message no. F0503P1 & F0504P1 modified, F0604P1, F0704P1, F0804P1 added to already existing details and details modified, F1001P1 modified* and instructions added at the end of SS10*	21, 22, 23, 24, 25, 28, 33
9	5	Feb'13	Message no. F0108P1 and F0401P1 modified	5, 6 and 21
10	6	April'13	Message F0108P1, F1001P1* modified and F1106P2 added	5, 29 and 34
11	7	Sep'13	Message F0104P1 added for WAP-5 MU with single panto	3
12	8	Jan'14	Message no. F0101P1, F0103P1, F0104P1, F0107P1, F0108P1, F0101P2, F0103P2, F0202P1, F0203P1, F0205P1, F0206P1, F0207P2, F0302P1, F0303P1, F0305P1, F0306P1, F0307P2, F0601P1, F0602P1, F0701P1, F0702P1, F0801P1, F0802P1, General, F0901P1, F1001P1 F1003P1, F1009P1, F1101P2, F1106P2, F1201P2, F1203P2, F1301P1, F1303P1, F1401P1, F1403P1, F1703P1, F1801P1 & F1803P1 modified.	2, 3, 4, 6, 7, 8, 9, 13, 14, 15, 17, 18, 19, 20, 23, 25, 26, 27, 28, 29, 30, 31, 33, 35, 36, 37, 38, 39, 40, 43 & 44
13	9	April'16	ALL FAULTS in red colour	All pages

*Will be relevant only after implementation of Rev'1' of MS No. RDSO/2009/EL/MS/0375 dated 28.09.12.

SSO1: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS01	F0101P1	Loco XXXXXX SS01: Main Power VCB STUCK IN ON POSITION Loco will be shut down F0101P1	LSDJ will not glow, LSFI will start blinking & BPFA will glow	SR Contactor will open (Hotel & Converter), Panto will lower	<ol style="list-style-type: none"> 1. Bring Throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Coast to clear the block section. 3. Bringing the loco to dead stop. 4. Switch OFF and ON the MCE and check if LSDJ is glowing. (Procedure for switching ON/OFF MCE is given below this table on page No.53.) 5. If so, raise panto and close VCB and resume Traction. 6. If not successful, try from rear cab.
		Loco XXXXXX SS01 : Main Power MAIN POWER ISOLATED VCB Inhibited Loco is dead	LSDJ will not glow, LSFI will glow	VCB will not close	<ol style="list-style-type: none"> 1. Switch OFF the MCE and Switch it ON once again. Try to resume traction, if not successful, then- 2. Ask for relief loco within 20 minutes.
SS01	F0102P1	Loco XXXXXX SS01 : Main Power VCB STUCK IN OFF POSITION Try to close VCB again F0102P1	LSDJ & BPFA will glow, LSFI will start blinking	VCB control changed to redundant processor	<ol style="list-style-type: none"> 1. Bring Throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Ensure VCB COC in open position. 3. Press BLDJ to close VCB. 4. If VCB gets closed then resume traction. 5. Otherwise coast to clear the block section, if possible, then bring the loco to dead stop. 6. Switch OFF the MCE and Switch it ON once again. 7. Raise panto and close VCB and resume Traction. 8. If not successful, try from rear cab.
		Loco XXXXXX SS01 : Main Power MAIN POWER ISOLATED VCB Inhibited Loco is dead	LSDJ & LSFI will glow	VCB will not close	<ol style="list-style-type: none"> 1. Switch OFF the MCE and Switch it ON once again. Try to resume traction, if not successful, then- 2. Ask for relief loco within 20 minutes.
SS01	F0103P1	Loco XXXXXX SS01 : Main Power LOW PRESSURE PANTO/FAULTY PANTO Check Isolating Cock Check Aux. Reservoir Pressure F0103P1	LSDJ & BPFA will glow, LSFI will start blinking	Panto will not raise	<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. 2. Ensure that IG-38 (Blue key is inserted and keep horizontal on Pn.Panel. In case of KNORR-CCB2 brake locomotives, ensure IG 38 key in vertical position. 3. Check that auxiliary compressor is working or not. Check MCB 48.1 (SB-2) of MCPA. 4. If not working, tap gently on Pressure switch No. 26 on pneumatic panel. (5th from

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S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>left on Pn. Panel in E70 and "PANS-PS" in CCB2)</p> <ol style="list-style-type: none"> 5. Check that pressure is available in Aux. Reservoir and more than 5.2 Kg/cm² on the gauge provided on pneumatic panel. Ensure that drain cock is closed (parallel to pipe). 6. Check Panto isolating and VCB cocks on pneumatic panel. Operate 2-3 times and ensures that these are in horizontal position. 7. Try to raise pantograph. If not successful, try to raise other pantograph by changing the position of panto selector switch (85) on pneumatic panel. 8. Pressure in Pan circuit is monitored by a pressure switch (130.4/1 & 130.4/2). After giving panto raising command, if pressure switch not picked up within 35 sec, then VCB will be disabled. In case VCB is closed then it will open with delay of 2 seconds. Tap very gently above pressure switch (130.4/1& 130.4/2) i.e. 9/1 & 9/2 provided on top of the pneumatic panel in E70 panel and "PAN1 PS & PAN2 PS" in CCB2 panel. Raise panto and close VCB. 9. If not successful, try by changing the cab/ changing panto selector switch no. 85 on pneumatic panel. 10. If not, then Switch OFF the MCE and Switch it ON once again.
SS01	F0104P1	<p>Loco XXXXX SS01 : Main Power CATENARY VOLTAGE OUT OF LIMIT Watch Catenary Voltmeter Close VCB When Voltage is OK F0104P1</p>	LSDJ, & BPFA will glow, LSFI will start blink ing	VCB remain trip between Catenary voltage 17.5 kV to 29 kV	<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. If U-meter showing '0' then either no tension or fuse blown off. Confirm OHE Tension through TLC/TPC. If there is no tension in OHE, act accordingly. <ol style="list-style-type: none"> 2.1 Check 2 Amps. Fuse at SB-1, if it is blown off change it with the spare fuse after lowering of pantograph only. Check for OHE voltage getting restore, then close the VCB and resume traction. 2.2 If 2 Amps fuse is not blown, wait for Catenary voltage to rise above 17.5 KV but less than 29

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					<p>KV. After OHE voltage get restored, then re-close the VCB and resume traction.</p> <p>3 If OHE voltmeter is showing voltage, then try by isolating Traction converter 1 or Traction converter-2 as per following message:</p> <p>(i) If DDS shows background message having SLG1:0020-LP has to isolate Traction Converter-1 by MCB 127.1/1 (SB-1).</p> <p>(ii) If DDS shows background message having SLG2:0020-LP has to isolate Traction Converter-2 by MCB 127.1/2(SB-2).</p> <p>4 If not succeed try following:</p> <p>4.1 Switch OFF the MCE and Switch it ON once again. Try to resume traction, if not succeed, then</p> <p>4.2 Try by changing panto.</p> <p>4.3 Try by changing cab.</p>
SS01	F0104P1	Loco XXXXX SS01 :Main Power “CATENARY VOLTAGE OUT OF LIMIT” (From Slave loco only and not from master loco during WAP-5 MU Operation With Single Panto)	LSDJ will glow LSIso -1: LSIso -2 Will Extinguis, LSFI will start blinki ng	VCB trip, Both isolator will open	<p>1. Bring throttle to '0' position. Check the HV connecting cable between two locos. If HV cable damaged isolate slave loco electrically by opening both isolators (by pressing BPIso) and operate the loco as single.</p> <p>Warning: Mechanical coupling of multi not to be opened as it will cause damage to the HV cable.</p> <p>If HV cable is OK</p> <p>2. Check 2 Amps. Fuse of slave loco at SB-1, if it is blown off change it with the spare fuse after lowering of pantograph only. Check for OHE voltage getting restore, then close the VCB and resume traction.</p> <p>3. If 2 Amps fuse is not blown, wait for Catenary voltage to rise above 17.5 KV but less than 29.5 KV. After OHE voltage get restored, then re-close the VCB and resume traction.</p> <p>4. Switch OFF the MCE and Switch it ON once again. Try to resume traction, if not succeed, then-</p> <p>5. Try by changing panto.</p> <p>6. Try by changing cab.</p> <p>7. Try by isolating Slave loco</p>

SSO1: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					electrically as in 1.
SS01	F0105P1	Loco XXXXXX SS01 : Main Power TRANSFORMER OIL TEMPERATURE OR PRESSURE NOT OK TE/BE reduction or VCB trips Try to close VCB if open F0105P1	LSFI will start blinking & BPFA will glow	Possibility of Reduced TE/BE. GTO pulsing will stop. Hotel load will off & VCB will trip.	<p>1. If TE is available then clear the block section by Traction otherwise try to clear the block section by coasting.</p> <p>2. Bring throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>3. If VCB trips, then acknowledge fault by pressing BPFA. Close VCB & try to clear the block section by coasting.</p> <p>4. Check manually if Transformer oil pumps are working by touching the pumps outlets and inlet pipes in the under frame. Check if MCB 62.1/1 and HB1& 62.1/2 in HB2 Cubicle. If found tripped open VCB and reset MCB once. (Procedure for resetting MCB is given on page No. 49) If MPH not working then</p> <p>a) Switch OFF and ON MCE.</p> <p>b) Keep loco in idle mode for 10 minutes.</p> <p>5. Check the oil level in both the expansion tanks of transformer in Machine room located near Oil Cooling Unit. It should be in between the Max & Min Mark.</p> <p>6. Driver should check the working of Oil cooler blower unit located in machine room; If it is not working then ensure that MCB 59.1/1 (in HB-1 Cubicle) & 59.1/2 (in HB-2 Cubicle) should not be in tripped condition. If found tripped, then open VCB & reset MCB only once. If OCBs are not working, then</p> <p>a) Switch OFF and ONMCE.</p> <p>b) Keep loco in idle mode for 10 minutes.</p> <p>If driver noticed that OCB impeller and its casing got physically damaged, then driver should immediately isolate</p> <p>a) Concerned OCB by opening MCB 59.1/1 OR 59.1/2</p> <p>b) Concerned traction converter pump by opening oil pumps MCB 63.1/1 OR 63.1/2 and</p> <p>c) Concerned transformer oil pumps by opening MCB 62.1/1 OR 62.1/2.</p> <p>Driver should operate</p>

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S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>above MCB after opening VCB and switching OFF MCE.</p> <p>Then driver should isolate concerned Bogie-by-Bogie isolating switch (154) located in SB-1 cubicle.</p> <p>Switch ON MCE raise panto & close VCB. Work the train with one bogie in service after making conversation with TLC.</p> <p>7. Try to resume traction.</p>
		Loco XXXXX SSO1 : Main Power MAIN POWER ISOLATED VCB Inhibited Loco is dead	LSDJ & LSF1 Will glow	VCB will not close	<ol style="list-style-type: none"> 1. If the same message repeats and MCB's are normal, bring throttle to 0 position. 2. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume traction. 3. If, not successful check DDS messages, if SLG1:0019 Isolate SR1 & SLG2:0019 Isolate SR2. 4. If not successful within 20 minutes, ask for relief loco.
SS01	F0106P1	Loco XXXXX SSO1 : Main Power FILTER ON/OFF CONTACTOR STUCK ON VCB will not close again F0106P1	LSDJ & BPFA will glow, LSF1 will start blinking	Filter discharging contactor will open.	<ol style="list-style-type: none"> 1. If VCB opens, it will not close again. 2. Bring Throttle to 0 position. Acknowledge fault by pressing BPFA. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume Traction if loco get normal. 3.
		Loco XXXXX SSO1 : Main Power MAIN POWER ISOLATED VCB Inhibited Loco is dead	LSDJ & LSF1 Will glow	VCB will not close	<ol style="list-style-type: none"> 1. If not successful, check DDS messages. If a message is SLG1-0059 isolate SR-1 by opening MCB 127.1/1 & 154-1 in SB1 & try. 2. If not successful Ask relief Loco & Record in Log book.
SS01	F0107P1	Loco XXXXX SSO1 : Main Power PRECHARGE OR MAIN CONTACTOR STUCK ON Main converters blocked F0107P1	LSDJ & BPFA will glow, LSF1 will start blinking	VCB will trip	<ol style="list-style-type: none"> 1. Bring throttle to '0' position and try to clear block section in coasting. 2. Acknowledge fault by pressing BPFA. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume traction. 3. If no succeed received, then clear block section with one bogie in service by isolating a traction converter per following message: <ol style="list-style-type: none"> (i) If DDS shows background message having SLG1 0037 or 0039 LP has to isolate Traction Converter-1 by MCB 127.1/1

SSO1: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					(SB-1). (ii) If DDS shows background message having SLG2 0037 or 0039 LP has to isolate Traction Converter-2 by MCB 127.1/2(SB-2) and then talk to TLC and act accordingly. 4. If not successful within 20 minutes ask for relief loco.
		Loco XXXXX SSO1 : Main Power MAIN POWER ISOLATED VCB inhibited Loco is dead	LSDJ & LSFI will glow	VCB will trip	1. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume traction 2. If VCB cannot be closed, shut down loco. 3. Ask for relief loco within 20 minutes.
SS01	F0108P1	Loco XXXXX SSO1 : Main Power PRIMARY OVER CURRENT Check over current relay flag Close VCB after unlocking relay F0108P1	LSDJ & BPFA will glow, LSFI will start blinking	Power supply of VCB closing / Holding coil will interrupt through Maximum current relay.	1. Don't close DJ until you check the loco specially OCR (Relay 78), fire and all oil points in machine rooms. If find fire act according message F1501P1 and ask for relief loco without losing time. 2. If find no any fire, Coast to clear block section. Bringing the loco to dead stop. Acknowledge fault by pressing BPFA. 3. Check over current relay-78 flag in SB-1 panel. 4. Inspect the Machine Room for any oil spillage. 5. Check the oil level in both the expansion tanks of transformer in Machine room located near Oil Cooling Unit and the expansion tanks of both converters. It should be in between the Max. & Min. Mark. If there is any abnormality like splashing of oil inside the machine room or from Transformer /converter, sign of overheating/sparking of connection; shut down the loco. Ask for relief loco within 20 minutes. 6. If flag found dropped in Primary Over Current relay provided in SB-1 and there is no abnormality of oil splashing and oil level is in between max & min in all the four gauges, then unlock the relay by moving the screw clock wise provided on the front side of the relay . The relay flag shall disappear•.

SS01: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					7. Press BLDJ to close VCB after unlocking the relay. Inform TLC and record in the logbook. 8. If not successful after making one attempt as given above then VCB will be inhibited, ask for relief loco without losing time.
		Loco XXXXX SS01 : Main Power MAIN POWER ISOLATED VCB inhibited Loco is dead	LSDJ & LSFI will glow	VCB will not close	1. If one attempt taken, Ask for relief loco without losing time.
SS01	F0109P1	Loco XXXXX SS01 : Main Power AUX. WINDING OVER CURRENT Try to close VCB again	LSDJ & BPFA will glow, LSFI will start blinking	VCB will trip	1. Acknowledge fault by pressing BPFA. Press BLDJ to close VCB. 2. If problem persists isolation message will appear, acknowledge by pressing enter button. 3. Coast to clear block section bringing the loco to dead stop.
		Loco XXXXX SS01 : Main Power MAIN POWER ISOLATED VCB inhibited Loco is dead	LSDJ & LSFI will glow	VCB will not close	1. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume Traction. 2. If VCB cannot be closed, shut down the loco. 3. Check the back ground message & Isolate BUR1 or 2 or 3 one by one by opening MCB 127.22/1 or 127.22/2 or 127.22/3 and try. 4. If not successful ask for relief loco within 20 minutes.
SS01	F0110P1	Loco XXXXX SS01 : Main Power FATAL ERROR IN MAIN CIRCUIT Turn OFF the loco.	LSD & BPFA J will glow, LSFI will start blinking	VCB will Open & panto will Lower	1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB's in HB / SB, if found tripped, reset once. 3. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and resume Traction. 4. More than one sub system isolated.
<ul style="list-style-type: none"> This is only applicable after implementation of Modification no. RDSO/2013/EL/MS/0420, Rev.'0' dated 23.01.13. 					
		Loco XXXXX SS01 : Main Power MAIN POWER ISOLATED VCB inhibited Loco is dead	LSDJ, & LSFI will glow	VCB will not close	1. Trouble shoot as per Additional instructions given at end of SS-01 for OCB, TMB, MPH-C and MCP. If not successful then, 2. Switch OFF the MCE and Switch it ON once again. Raise panto and close VCB and

SS01: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>resume Traction.</p> <p>3. If VCB cannot be closed, shut down loco.</p> <p>4. Ask for relief loco within 20 minutes.</p>
SS01	F0101P2	<p>Loco XXXXX SS01 : Main Power OVER TEMPERATURE CONTROL ELECTRONICS</p> <p>Turn off the loco.</p> <p>Setup cooling mode F0101P2</p>	LSCE & BPFA will glow	Contactor of Control electronic s will not close	<ol style="list-style-type: none"> 1. Check MCB's in HB / SB, if found tripped, reset once (54.1/1 & 54.1/2 in both HB and MCBs 127.91/1 & 127.91/2 in SB panels.). 2. If TE is available then clear the block section by Traction otherwise try to clear the block section by coasting. Acknowledge fault by pressing BPFA. 3. Advice station, regarding inability for 10-15 minutes. A-9 to be kept on Emergency (to save MR pressure) before putting loco on cooling mode. 4. Switch OFF theMCE. Put BL Key in position 'C' raise pantograph with ZPT, close VCB both Machine Room Blowers will start working. The loco is now, in cooling mode and Electronics is being cooled wait till LSCE extinguished. 5. If VCB trips during cooling mode before closing VCB, check OCR (relay 78) and all oil points in machine room and act accordingly. 6. After LSCE extinguished, open DJ, lower panto. Put BL Key to 'D' position. Raise panto, close VCB and resume traction.
SS01	F0102P2	<p>Loco XXXXX SS01 : Main Power TRANSFORMER OIL PRESSURE NOT OK</p> <p>Any oil pump circuit not working TE/BE will be reduced F0102P2</p>	BPFA will glow	Possibility of reduced TE/BE. Ventilation will increase. VCB will trip	<ol style="list-style-type: none"> 1. If TE is available then clear the block section by Traction otherwise try to clear the block section by coasting. 2. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 3. If VCB trips then acknowledge fault by BPFA. Close VCB & try to clear the block section by coasting. 4. Check manually that oil pumps are working or not by touching the pumps outlets and inlet pipes in the under frame. Check MCB 62.1/1 in HB1 & 62.1/2 in HB2 panels. If found tripped, open VCB and reset MCB once. 5. Close VCB. If successful, work the train.

SSO1: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS01	F0103P2	Loco XXXXXX SS01 : Main Power EARTH FAULT AUX. WINDING CIRCUIT Normal operation can continue. To be checked during maintenance F0103P2	BPFA will glow		<ol style="list-style-type: none"> 1. Check visually machine room for burning / burning smell of Auxiliaries. If found, trip MCB of that Aux. Acknowledge fault by pressing BPFA. 2. If fault repeats, trouble shoot as per additional instruction given at the end of SS01. 3. Inform TLC and record in the logbook.
SS01	F0104P2	Loco XXXXXX SS01 : Main Power F0104P2 LOW FREQUENCY CATENARY VOLTAGE Wait for 1 minute and set TE/BE again.	BPFA will glow	Traction will start above 45 Hz.	<ol style="list-style-type: none"> 1. Coast to clear block section. Acknowledge fault by pressing BPFA. 2. Inform TLC at scheduled stop and record in the logbook. 3. Keep trying for traction and resume normal operation.
SS01	F0105P2	Loco XXXXXX SS01 : Main Power CATENARY FREQUENCY IS HIGH Bring throttle to zero F0105P2	BPFA will glow	Traction will start till the frequency is below 55 Hz.	<ol style="list-style-type: none"> 1. Coast to clear block section. Acknowledge fault by pressing BPFA. 2. Inform TLC at scheduled stop and record in the logbook. 3. Keep trying for traction and resume normal operation.
SS01	F0106P2	Loco XXXXXX SS01 : Main Power AUXILIARY CAPACITOR MACHINE ROOM BLOWER NOT OFF Continue normal traction F0106P2	BPFA will glow		<ol style="list-style-type: none"> 1. If MRB 1 and 2 working, acknowledge fault by pressing BPFA and continue normal operation. 2. Inform TLC at scheduled stop and record in the logbook.
SS01	F0107P2	Loco XXXXXX SS01 : Main Power DEMANDED SPEED CAN NOT BE ACHIEVED	BPFA will glow	Speed not increasing more than 1 KMPH" and Loco moving with heavy jerk above 50 % of TE	<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. 2. If loco (WAG9, WAG9H, WAP7) has been provided with toggle switches at the top of traction converters, then bypass the speed sensor as per message on DDS. Operate bottom, middle or top Toggle switch provided on top of SR-1 for background message no. 0052, 0053 and 0054 ASC1 ERROR TECHNOGENERATOR respectively. Similarly operate bottom, middle or top Toggle switch provided on top of SR-2 for background message no. 0052, 0053 and 0054 ASC2 ERROR TECHNOGENERATOR respectively. 3. If toggle switches are not provided then isolate concern traction converter as DDS message <ol style="list-style-type: none"> a) If message is ASC-1 Error Tacho Generator 1/2/3 then switch OFF MCE & isolate SR-1(Traction converter-1) by

SSO1: MAIN POWER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>MCB127.1/1. Work with one bogie in service. Inform TLC.</p> <p>b) If message is ASC-2 Error Tacho Generator 1/2/3 then switch OFF MCE & isolate SR-2(Traction converter-2) by MCB 127.1/2 Work with one bogie in service. Inform TLC.</p>

Additional Instructions for SS01 (See DDS & act accordingly)

1. Isolation of Auxiliary Converter-1 and then Auxiliary Converter-2 (Fault in OCB)

SS01		<p>If there is earth fault in OCB-1 or OCB-2, then driver will encounter following sequence of messages.</p> <p>a) F 0103 P2: Earth fault Auxiliary winding circuit in the front display.</p> <p>b) STB2:004: Earth fault Auxiliary circuit in the background DDS.</p> <p>c) Auxiliary converter -1 isolated due to inverter over current.</p> <p>d) Auxiliary converter-2 isolated due to inverter over current.</p> <p>e) Main power off. VCB inhibited.</p>			<p>A) If there is no tripping of MCB No. 59.1/1 or 59.1/2, following instructions should be followed by driver.</p> <ol style="list-style-type: none"> 1. Switch off & on MCE. Isolate OCB-1 by tripping MCB no. 59.1/1 located in HB-1. 2. Close VCB. 3. Check for following message. <ol style="list-style-type: none"> a) F0601P1- Disturbance in processor BUR-1 b) F0602P1- Fault in Auxiliary converter -1 c) F 0103P2- Earth fault Auxiliary winding circuit <p>If there is no message, then faulty OCB has been isolated.</p> <p>d)</p> <p>e) Isolate BG-1 by operating Bogie cut out switch No. 154. Switch off & on MCE. Half traction will be available. Continue traction with one bogie to clear the section and ask for relief after clearing the section.</p> <p>If messages are repeated, then</p> <ol style="list-style-type: none"> i) Close 59.1/1 in HB-1 panel. Put BG-1 in service. ii) Isolate OCB-2 by tripping MCB 59.1/2 located in HB-2. iii) Switch off MCE. iv) Then isolate BG-2 by Bogie cut out switch 154. Switch on MCE. Half traction will be available. Continue traction with one bogie to clear the section and ask for relief after clearing the section. <p>B) If MCB No. 59.1/1 or 59.1/2 trips due to faulty motor of OCB,</p>
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					<p>a) Do not reset MCB.</p> <p>b) Isolate the concerned Bogie by Bogie cut out switch No. 154.</p> <p>c) Half traction will be available. Continue traction with one bogie to clear the section and ask for relief after clearing the section.</p>
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2. Isolation of Auxiliary Converter-2 and then Auxiliary Converter-1 (Fault in TMB)

SS01		<p>If there is earth fault in TMB-1 or TMB-2, then driver will encounter following sequence of messages.</p> <p>a) F 0103 P2: Earth fault Auxiliary winding circuit in the front display.</p> <p>b) STB2:004: Earth fault Auxiliary circuit in the background DDS.</p> <p>c) Auxiliary converter -2 isolated due to inverter over current.</p> <p>d) Auxiliary converter-1 isolated due to inverter over current.</p> <p>e) Main power off. VCB inhibited.</p>			<p>A) If there is no tripping of MCB No. 53.1/1 or 53.1/2, following instructions should be followed by driver.</p> <ol style="list-style-type: none"> 1. Switch off & on MCE. Isolate one by one TMB-1 by tripping MCB no. 53.1/1 and TMB-2 by tripping MCB 53.1/2 located in HB-1 and HB-2 respectively. 2. Close VCB. If succeed with isolation of TMB-1 or TMB-2, Isolate concerned BG by Bogie cut out switch No. 154. Half traction will be available. Continue traction with one bogie to clear the section. <p>B) If MCB No. 53.1/1 or 53.1/2 trips due to faulty motor of TMB,</p> <ol style="list-style-type: none"> a) Do not reset MCB. b) Switch off & on MCE. c) Isolate the concerned Bogie by Bogie cut out switch No. 154. d) Half traction will be available. Continue traction with one bogie to clear the section.
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3. Isolation of Auxiliary Converter-2 and then Auxiliary Converter-3 (Fault in SR Oil Pump and/or T/F Oil Pump)

SS01		<p>If there is earth fault in SR-1 Oil Pump, T/F oil pump-1 or SR-2 Oil Pump, T/F oil pump-2 then driver will encounter following sequence of messages.</p> <p>a) F 0103 P2: Earth fault Auxiliary winding circuit in the front display.</p> <p>b) STB2:004: Earth fault Auxiliary circuit in the background DDS.</p> <p>c) Auxiliary converter -2 isolated due to inverter over current.</p> <p>d) Auxiliary converter-3 isolated due to inverter over current.</p> <p>e) Main power off. VCB inhibited.</p>			<p>A) If there is no tripping of MCB No. 63.1/1 or 63.1/2, following instructions should be followed by driver.</p> <ol style="list-style-type: none"> 1. Switch off & on MCE. Isolate one by one SR -1 Oil Pump by tripping MCB no. 63.1/1 and SR -2 Oil Pump by tripping MCB 63.1/2 located in HB-1 and HB-2 respectively. 2. Close VCB. <p>If succeed with isolation of SR -1 Oil Pump or SR -2 Oil Pump, concerned BG to be kept isolated</p>
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					<p>by Bogie cut out switch No. 154.</p> <p>Half traction will be available. Continue traction with one bogie to clear the section.</p> <p>B) If MCB No. 63.1/1 or 63.1/2 trips due to faulty motor of MPH-C,</p> <p>a) Do not reset MCB.</p> <p>b) Switch off & on MCE. Concerned BG will get isolated automatically.</p> <p>c) Half traction will be available. Continue traction with one bogie to clear the section.</p>
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4. Isolation of Auxiliary Converter-3 and then Auxiliary Converter-2 (Fault in MCP)

SS01		<p>If there is earth fault in MCP-1 or MCP-2, then driver will encounter following sequence of messages.</p> <p>a) F 0103 P2: Earth fault Auxiliary winding circuit in the front display.</p> <p>b) STB2:004: Earth fault Auxiliary circuit in the background DDS.</p> <p>c) Auxiliary converter -3 isolated due to inverter over current.</p> <p>d) Auxiliary converter-2 isolated due to inverter over current.</p> <p>e) Main power off. VCB inhibited.</p>			<p>A) If there is no tripping of MCB No. 47.1/1 or 47.1/2, following instructions should be followed by driver.</p> <ol style="list-style-type: none"> 1. Switch off & on MCE. Isolate one by one MCP-1 by tripping MCB no. 47.1/1 and MCP-2 by tripping MCB 47.1/2 located in HB-1 and HB-2 respectively. 2. Close VCB. <p>If succeed with isolation of MCP1 or MCP-2, try to work with one MCP in service.</p> <p>B) If MCB No. 47.1/1 or 47.1/2 trips due to faulty motor of MCP,</p> <p>a) Do not reset MCB. Switch off & on MCE.</p> <p>b) Work the train with one MCP in service.</p>
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5. Isolation of Auxiliary Converter-3 and then Auxiliary Converter-1 (Fault in Scavage Blower)

SS01		<p>If there is earth fault in Scavange blower-1 or Scavange blower-2 then driver will encounter following sequence of messages.</p> <p>a) F0103P2: Earth fault Auxiliary winding circuit in the front display.</p> <p>b) STB2:004: Earth fault Auxiliary circuit in the background DDS.</p> <p>c) Auxiliary converter -3 isolated due to inverter over current.</p> <p>d) Auxiliary converter-1 isolated due to inverter over current.</p> <p>e) Main power off. VCB inhibited.</p>			<p>A) If there is no tripping of MCB No. 55.1/1 or 55.1/2, following instructions should be followed by driver.</p> <ol style="list-style-type: none"> 1. Switch off & on MCE. Isolate one by one Scavange blower-1 by tripping MCB no. 55.1/1 and Scavange blower-2 by tripping MCB 55.1/2 located in HB-1 and HB-2 respectively. 2. Close VCB. <p>If succeed with isolation of Scavange blower-1 or Scavange blower-2, try to work with one Scavange blower in service.</p> <p>B) If MCB No. 55.1/1 or 55.1/2 trips due to faulty motor of Scavange blower,</p> <ol style="list-style-type: none"> 1. Do not reset MCB. Switch off & on MCE. 2. Work the train with one Scavange blower in service.
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SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS02	F0201P1	Loco XXXXX SS02: Traction Bogie 1 DISTURBANCE IN CONVERTER1 Try to close VCB again F0201P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 127.1/1(SB1). If found triped then reset once after switching MCE OFF. 3. Press BLDJ to close VCB. 4. If the message repeats, switch OFF the MCE and switch it ON once again after 5 minutes. Raise panto, close VCB and resume traction if loco gets normal. 5. If the message repeats and bogie-1 is not getting isolated automatically then isolate bogie 1 by MCB 127.1/1 Provided in SB-1 cubicle. 6. Inform TLC and record DDS message which comes before isolation of bogie in the logbook.
		Loco XXXXX SS02: Traction Bogie 1 BOGIE 1 ISOLATED : Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 1 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. If bogie-1 is isolated by Driver through (154) switch then only acknowledge the isolation message by pressing <ENTER> on display key board otherwise- 2. Switch OFF the MCE and Switch it ON once again. Raise the panto and close VCB and resume traction. 3. If the same message repeats resume normal operation with half traction/braking power.

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>4. Inform TLC and record in the logbook. Note: Avoid switching off/on MCE for DDS messages ASC1: Error PS hardware followed by either</p> <p>a) ASC1: Error PS Fault storage CGP or ASC1: Error PS Fault storage GBC.</p> <p>b) NSC1: Error PS hardware followed NSC1: Error PS Fault storage GBC and ASC2:0052/0053/0054 (Bogie2 Error Tacho generator).</p>
SS02	F0202P1	Loco XXXXX SS02: Traction Bogie 1 CONVERTER CONTACTOR STUCK OFF Try to close VCB again F0202P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. In CCB2 locos- check MR or FP pressure gauges, if pressure drops attend the same after moving MPJ-0. 3. Press BLDJ to close VCB. 4. Check for air leakage from SR-1. If air is leaking, then isolate air supply to concerned SR by cock 125 on left inside (fourth from top) of pneumatic panel then isolate Bogie-1 by switch 154 (SB-1). 5. Press BLDJ to close VCB. If VCB not closed and same message repeated, then this will lead to isolation of Bogie-1.
		Loco XXXXX SS02: Traction Bogie 1 BOGIE 1 ISOLATED: Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 1 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. If bogie-1 is isolated by Driver through (154) switch then only acknowledge the isolation message by pressing <ENTER> on display key board otherwise- 2. Switch OFF the MCE and Switch it ON once again. Raise the panto and close VCB and resume traction. 3. If the same message repeats resume normal operation with half traction/braking power. 4. Inform TLC and record in the logbook.
SS02	F0203P1	Loco XXXXX SS02: Traction Bogie 1 GATE UNIT SUPPLY STUCK OFF Try to close VCB again F0203P1	LSDJ & BPFA will glow, LSFI will		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 127.11/1 in SB-1. If found tripped, reset once after swiching MCE OFF. 3. Press BLDJ to close VCB.

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			start blinking		
		Loco XXXXX SS02: Traction Bogie 1 BOGIE 1 ISOLATED: Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 1 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. Clear the block section or work with one Bogie in service as per instruction of TLC. 2. Driver should check the MCB (127.11/1) located in SB-1 cubicle. If found tripped, reset it once after switching MCE OFF . 3. If not succeed, Switch OFF the MCE and Switch it ON once again. Raise the panto and close VCB and resume traction. 4. If the same message repeats, resume normal operation with half traction / braking power. 5. Inform TLC and record in logbook.
SS02	F0205P1	Loco XXXXX SS02: Traction Bogie 1 CONVERTER -1 OIL TEMPERATURE TOO HIGH Try to close VCB again F0205P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check oil level in converter expansion tank, located above the converter cubicle. 3. Check MCB 59.1/1 & 63.1/2 in HB1 panel. If found tripped, open VCB and reset MCB once. Close VCB and ensure working of traction converter-1 oil pump. Check manually that oil-cooling blower unit-1 is working by checking the air coming out of the radiator in the underframe at station. 4. Driver should also inspect the oil cooler blower motor-1 impeller and casing for any sign of damage. If found damaged, then driver should open VCB, lower panto. Open MCB 59.1/1, open MCB 62.1/1 & MCB 63.1/1 (all located in HB1 cubicle). Then isolate bogie-1 by bogie isolating switch 154 (located in SB-1) cubicle. 5. Energies the loco and work the train with one bogie in service. Under such condition, LSFI will glow permanently. Inform to TLC and record in Loco logbook.
		Loco XXXXX SS02: Traction Bogie 1	LSFI will	Bogie 1 will	<ol style="list-style-type: none"> 1. Switch OFF the MCE and Switch it ON once again.

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		BOGIE 1 ISOLATED: Only half traction and electrical braking power available. Press <Enter>	glow	isolate. Only half TE/BE power will available.	<p>Raise panto, close VCB and resume Traction.</p> <p>2. If the same message repeats resume normal operation with half traction/braking power.</p> <p>3. Inform TLC and record in the logbook.</p>
SS02	F0206P1	Loco XXXXX SS02: Traction Bogie 1 CONVERTER 1 OIL PRESSURE NOT OK Check oil level Try to close the VCB again	LSDJ & BPFA will glow, LSFI will start blinking		<p>1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>2. Check oil level in converter expansion tank. If more than max level/below min level, isolate bogie no-1 by putting switch 154 on position I. Work with half traction.</p> <p>3. If oil level is OK, check MCB 63.1/1 in HB1 panel. If found tripped, open VCB and reset MCB only once. Check manually that SR-1 oil pump is working or not by touching the pump outlet and inlet pipes in the machine room.</p> <p>4. If MCB 63.1/1 getting trip again after resetting it once then do not try to reset the MCB again. BG-I will get automatically isolated. Work with half traction.</p> <p>5. Driver should also inspect the traction converter No.1 oil pipeline for any sign of damage causing oil leakage and inspect the oil cooler blower-1 casing for any sign of damage due to failure of its impeller. In this case it may lead to damage of converter radiator causing oil leakage and lead to fault message "Converter No.1 oil pressure low". Then driver should open VCB, lower panto . Open MCB 59.1/1, 63.1/1 (all located in HB-1 cubicle). Isolate bogie-1 by putting rotating switch 154 at position-1. Energise the loco and work the train with one bogie in service. Under such condition LSFI will glow permanently if driver isolated the bogie-1 as described in step 2 & 5 above. Inform TLC and record in loco logbook.</p> <p>6. If SR-1 oil pump is normal then isolate BUR II by</p>

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					tripping MCB 127.22/2 after switching MCE OFF. 7. If problem disappear, work with BUR-II isolated. 8. If not succeed then isolate bogie-1 by putting switch 154 (SB1) on position I. Inform TLC.
		Loco XXXXX SS02: Traction Bogie 1 BOGIE 1 ISOLATED : Only half traction and electrical braking power available. Press <Enter>	LSFI will glow	Bogie 1 will isolate. Only half TE/BE power will available.	1. Switch OFF the MCE and Switch if ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats, resume normal operation with half traction / braking power. 3. Inform TLC and record in the logbook.
SS02	F0207P1	Loco XXXXX SS02: Traction Bogie 1 TRACTION MOTOR TEMPERATURE TOO HIGH Converter 1 blocked Bogie 1 may get isolated F0207P1			1. Clear block section. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check manually whether traction motor blower-1 is working or not, by checking air suction at TM Louver. Check MCB 53.1/1 in HB1 panel. If found tripped, open VCB and reset MCB once.
		Loco XXXXX SS02: Traction Bogie 1 BOGIE 1 ISOLATED: Only half traction and electrical braking power available Press<Enter>	LSFI will glow	Bogie 1 will isolate. Only half TE/BE power will available.	1. MCBs 53.1/1 & 53.1/2 alternatively tripping, BUR-II to be kept isolated and try to close VCB. 2. Switch OFF the MCE and switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If problem disappear, work with BUR-II isolated. 4. If problem persist, BG-I will get automatically isolated 5. If the same message repeats, resume normal operation with half traction / braking power. 6. Inform TLC and record in the logbook.
SS02	F0201P2	Loco XXXXX SS02: Traction Bogie 1 EARTH FAULT IN CONVERTER1 Normal operation can continue To be checked during maintenance F0201P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0202P2	Loco XXXXX SS02: Traction Bogie 1 TRACTION MOTOR OVERSPEED TE is being reduced F0202P2	BPFA will glow		1. Reduce speed. Acknowledge fault by pressing BPFA. 2. Resume normal operation. 3. If TE is reduced to '0' even speeds within limits isolate Bogie 1 by placing 154 on I after opening VCB.

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS02	F0203P2	Loco XXXXXX SS02: Traction Bogie 1 MUB RESISTANCE TOO HOT IN CONVERTER 1 Wait for 30 seconds F0203P2	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Wait for 30 seconds before re closing VCB in order to cool MUB resistance (15.1 located in converter cubicle). Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB.
SS02	F0204P2	Loco XXXXXX SS02: Traction Bogie 1 FAULTY MOTOR TEMPERATURE SENSOR Normal operation can continue To be checked during maintenance F0204P2	BPFA will glow		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0205P2	Loco XXXXXX SS02: Traction Bogie 1 EQUIPMENT TEMPERATURE HIGH TE/BE is being reduced F0205P2	BPFA will glow	TE/BE will continuously reduce.	<ol style="list-style-type: none"> 1. Clear block section. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Wait for 10 minutes or some time till transformer / converter oil temperature normalizes. 3. Check MCBs in HB/SB, if tripped, reset it once. 4. Ensure working of all auxiliaries. 5. Resume normal traction. 6. If message persists, switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco get normal otherwise isolate bogie-1 by switch (154) & work the train on one bogie after making conversation with TLC. 7. If no success within 20 minutes, ask for relief loco.
SS02	F0206P2	Loco XXXXXX SS02: Traction Bogie 1 DC LINK CAPACITORS PRESSURE NOT OK Normal operation can continue To be checked during maintenance F0206P2	BPFA will glow		<ol style="list-style-type: none"> 1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook. Inform maintenance staff at destination station. 3. DC link capacitors have to be checked during maintenance. Capacitors may get open circuit or defective.
SS02	F0207P2	Loco XXXXXX SS02: Traction Bogie 1 WHEEL SKIDING IN BOGIE 1 Reduce BE F0207P2	BPFA will glow		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Ensure free running of wheels. 2. Ensure that there is no brake binding on loco. 3. Check all parking brakes are released properly. 4. If speed is more than 1

SS02: TRACTION BOGIE 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>KMPH and there is message in DDS" Error Tacho Generator". Then driver can work normally.</p> <p>5. Reduce braking effort, physically experience the wheel skidding sound in running condition. Inform TLC & make entry in Logbook</p> <p>6. Do not use BPCS and Regenerative braking.</p>
SS02	F0208P2	Doppler Radar Failed	BPFA will glow		<p>1. Acknowledge the fault by pressing BPFA.</p> <p>2. If Back ground message recorded as SLG1 0083/SLG20083 Radar control disabled / Faulty.</p> <p>3. Resume normal operation</p>

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S BOMBARDIER TRANSPORTATION FITTED IGBT TRACTION CONVERTER SS02: TRACTION BOGIE 1					
SS02	F0207P2	Loco XXXXX SS02: Traction Bogie 1 LINE CONVERTER ISOLATED BOGIE 1 Reduced Traction/Braking effort F0207P2	LSDJ & BPFA will glow, LSFI will start blinking	Bogie 1 will isolate. Only half TE/BE power will available.	<p>1. Acknowledge the fault by pressing BPFA & resume normal operation with half traction/braking power.</p> <p>2. Inform TLC and record in the logbook.</p>
SS02	F0208P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR 1 ISOLATED BOGIE 1 Reduced Traction/Braking effort F0208P2	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 1 isolated only 5/6 th of traction /electrical braking power available.	<p>1. Acknowledge the fault by pressing BPFA & resume normal operation.</p> <p>2. Inform TLC and record in the logbook.</p>
SS02	F0209P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR 2 ISOLATED BOGIE 1 Reduced Traction/Braking effort F0209P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 1 isolated only 5/6 th of traction /electrical braking power available.	<p>1. Acknowledge fault by pressing BPFA. Resume normal operation.</p> <p>2. Inform TLC and record in the logbook.</p>
SS02	F0210P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR 3 ISOLATED BOGIE 1 Reduced Traction/Braking effort F0210P2	LSFI will start blinking,	TM 3 of Bogie 1 isolated only 5/6 th of traction	<p>1. Acknowledge fault by pressing BPFA. Resume normal operation.</p> <p>2. Inform TLC and record in the logbook.</p>

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S BOMBARDIER TRANSPORTATION FITTED IGBT TRACTION CONVERTER					
SS02: TRACTION BOGIE 1					
				BPFA will glow	/electrical braking power available.

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S BHEL FITTED IGBT TRACTION CONVERTER					
SS02: TRACTION BOGIE 1					
SS02	F0211P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR1- BOGIE 1 ISOLATED TM 1 of bogie 1 isolated only 5/6 th of traction /electrical braking power available. F0211P2	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0212P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR2- BOGIE 1 ISOLATED TM 2 of bogie 1 isolated only 5/6 th of traction /electrical braking power available. F0212P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0213P2	Loco XXXXX SS02: Traction Bogie 1 MOTOR3- BOGIE 1 ISOLATED TM 3 of bogie 1 isolated only 5/6 th of traction /electrical braking power available. F0213P2	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0214P2	Loco XXXXX SS02: Traction Bogie 1 LINE CONVERTER1- BOGIE 1 ISOLATED LC1 of bogie 1 isolated only 3/4 th of traction /electrical braking power available. F0214P2	LSFI will start blinking, BPFA will glow	LC1 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0215P2	Loco XXXXX SS02: Traction Bogie 1 LINE CONVERTER2 - BOGIE 1 ISOLATED LC2 of bogie 1 isolated only 3/4 th of traction /electrical braking power available. F0215P2	LSFI will start blinking, BPFA will glow	LC2 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S MEDHA FITTED IGBT TRACTION CONVERTER					
SS02: TRACTION BOGIE 1					
SS02	F0208P2	Loco XXXXX SS02: Traction	LSFI	TM 1 of	1. Acknowledge the fault by

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S MEDHA FITTED IGBT TRACTION CONVERTER					
SS02: TRACTION BOGIE 1					
		Bogie 1 TM1- BOGIE 1 ISOLATED TM1 of Bogie 1 isolated only 5/6 th of Traction /Electrical braking power available. F0208P2	will start blinking, BPFA will glow	Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0209P2	Loco XXXXX SS02: Traction Bogie 1 TM2- BOGIE 1 ISOLATED TM2 of Bogie 1 isolated only 5/6 th of Traction /Electrical braking power available. F0209P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0210P2	Loco XXXXX SS02: Traction Bogie 1 TM3- BOGIE 1 ISOLATED TM3 of Bogie 1 isolated only 5/6 th of Traction /Electrical braking power available. F0210P2	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0211P2	Loco XXXXX SS02: Traction Bogie 1 LINE CONVERTER 1- BOGIE 1 ISOLATED LC1 of Bogie 1 isolated only 3/4 th of Traction /Electrical braking power available. F0211P2	LSFI will start blinking, BPFA will glow	LC1 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS02	F0212P2	Loco XXXXX SS02: Traction Bogie 1 LINE CONVERTER 2 - BOGIE 1 ISOLATED LC2 of Bogie 1 isolated only 3/4 th of Traction /Electrical braking power available. F0212P2	LSFI will start blinking, BPFA will glow	LC2 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

Note: - Additional message for m/s ABB fitted IGBT Traction Converter related with Bogie 1 added in SS04

SSO3: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS03	F0301P1	Loco SS03: Traction Bogie 2 DISTURBANCE IN CONVERTER2 Try to close VCB again F0301P1	LSDJ & BPFA will glow, LSFI will start		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 127.1/2 (SB2) if found trip then reset once after switching MCE OFF. 3. Press BLDJ to close VCB. 4. If the message repeats, switch

SS03: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			blinking		<p>OFF the MCE and switch it ON once again after 5 minutes. Raise panto, close VCB and resume traction if loco gets normal.</p> <p>5. If the message repeats and bogie-2 is not getting isolated automatically then isolate bogie 2 by MCB 127.1/2 Provided in SB-2 cubicle.</p> <p>6. Inform TLC and record DDS message which comes before isolation of bogie in the logbook.</p>
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED : Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 2 will isolate. Only half TE/BE power will available.	<p>1. If bogie-2 is isolated by Driver through (154) switch then only acknowledge the isolation message by pressing <ENTER> on display key board otherwise-</p> <p>2. Switch OFF the MCE and Switch it ON once again. Raise the panto, close VCB and resume traction.</p> <p>3. If the same message repeats resume normal operation with half traction/braking power.</p> <p>4. Inform TLC and record in the logbook.</p> <p>Note: Avoid switching off/on MCE for DDS messages</p> <p>a) ASC1: Error PS hardware followed by either ASC1: Error PS Fault storage CGP or ASC1: Error PS Fault storage GBC.</p> <p>b) NSC1: Error PS hardware followed NSC1: Error PS Fault storage GBC and ASC2:0052/0053/0054 (Bogie2 Error Tacho generator).</p>
SS03	F0302P1	Loco SS03: Traction Bogie 2 CONVERTER CONTACTOR STUCK OFF Try to close VCB again F0302P1	LSDJ & BPFA will glow, LSFI will start blinking		<p>1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>2. In CCB2 locos- check MR or FP pressure gauges, if pressure drops attend the same after moving MPJ-0.</p> <p>3. Press BLDJ to close VCB.</p> <p>4. Check for air leakage from SR-2. If air is leaking, then isolate air supply to concerned SR by cock 88 on left inside (second from top) of pneumatic panel then isolate Bogie-2 by switch 154 (SB-1).</p>

SSO3: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					5. Press BLDJ to close VCB. If VCB not closed and same message repeated, then this will lead to isolation of Bogie-2.
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED: Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 2 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. If bogie-2 is isolated by Driver through (154) switch then only acknowledge the isolation message by pressing <ENTER> on display key board otherwise- 2. Switch OFF the MCE and Switch it ON once again. Raise the panto, close VCB and resume traction. 3. If the same message repeats resume normal operation with half traction/braking power. 4. Inform TLC and record in the logbook.
SS03	F0303P1	Loco SS03: Traction Bogie 2 GATE UNIT SUPPLY STUCK OFF Try to close VCB again F0303P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 127.11/2 in SB-2, if any MCB is found tripped, reset it once after swiching MCE OFF. 3. Press BLDJ to close VCB.
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED: Only half traction and electrical braking power available Press <Enter>	LSFI will glow	Bogie 2 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. Clear the block section or work with one Bogie in service provided as per instruction of TLC. 2. Driver should check the MCB (127.11/2) located in SB-2 cubicle. If found tripped, reset it once after switching MCE OFF. 3. If not succeed, Switch OFF the MCE and Switch it ON once again. Raise the panto, close VCB and resume traction. 4. If the same message repeats, resume normal operation with half traction / braking power 5. Inform TLC and record in logbook.
SS03	F0305P1	Loco SS03: Traction Bogie 2 CONVERTER 2 OIL TEMPERATURE TOO HIGH Try to close VCB again F0305P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check oil level in converter expansion tank, located above the converter cubicle. 3. Check MCB 59.1/2 & 63.1/2 in HB2 panel. If found tripped, open VCB and reset

SSO3: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			ng		<p>MCB once. Close VCB and ensure working of traction converter -2 oil pump. Check manually that oil-cooling blower unit-2 is working by checking the air coming out of the radiator in the under frame at station section.</p> <p>4. Driver should also inspect the oil cooler blower motor-2 impeller and casing for any sign of damage. If found damaged, then driver should open VCB, lower panto. Open MCB 59.1/2, open MCB 62.1/2 & MCB 63.1/2 (all located in HB-2 cubicle). Then isolate bogie-2 by bogie isolating switch 154 (located in SB-1) cubicle.</p> <p>5. Energise the loco and work the train with one bogie in service. Under such condition, LSFI will glow permanently. Inform TLC and record in Loco logbook.</p>
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED: Only half traction and electrical braking power available. Press <Enter>	LSFI will glow	Bogie 2 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction. 2. If the same message repeats resume normal operation with half traction/braking power. 3. Inform TLC and record in the logbook.
SS03	F0306P1	Loco SS03: Traction Bogie 2 CONVERTER 2 OIL PRESSURE NOT OK Check oil level Try to close the VCB again	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check oil level in converter expansion tank. If more than max level/below min, isolate bogie no-2 by putting switch 154 on position II. Work with half traction. 3. If oil level is OK. Check MCB 63.1/2 in HB2 panel. If found tripped, open VCB and reset MCB only once. Check manually that traction converter-2 oil pump is working or not by touching the pump outlet and inlet pipes in the machine room. 4. If MCB 63.1/2 getting tripped again after resetting it once then do not try to reset the MCB again. BG-2 will get automatically isolated. Work with half traction.

SSO3: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>5. Driver should also inspect the traction converter No.2 oil pipeline for any sign of damage causing oil leakage and inspect the oil cooler blower casing-2 for any sign of damage due to failure of its impeller. In this case it may lead to damage of converter radiator causing oil leakage and lead to fault message "Converter No.2 oil pressure low". Then driver should open VCB, lower panto. Open MCB 59.1/2, 63.1/2 (all located in HB-2 cubicle). Isolate bogie-2 by putting rotating switch 154. Energise the loco and work the train with one bogie in service. Under such condition LSFI will permanently glow if driver isolated the bogie-2 as described in step 2 & 5 above. Inform TLC and record in loco logbook.</p> <p>6. If SR-2 oil pump is normal then isolate BUR II by tripping MCB 127.22/2 after switching MCE OFF.</p> <p>7. If problem disappear, work with BUR-II isolated.</p> <p>8. If not succeed then isolate bogie-II by putting switch 154 (SB1) on position II. Inform TLC.</p>
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED: Only half traction and electrical braking power available. Press <Enter>	LSFI will glow	Bogie 2 will isolate. Only half TE/BE power will available.	<ol style="list-style-type: none"> 1. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats, resume normal operation with half traction / braking power. 3. Inform TLC and record in the logbook.
SS03	F0307P1	Loco SS03: Traction Bogie 2 TRACTION MOTOR TEMPERATURE TOO HIGH Converter 2 blocked Bogie 2 may get isolated F0307P1	LSFI will start blinking & BPFA will glow		<ol style="list-style-type: none"> 1. Clear block section. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check manually whether traction motor blower-2 is working or not, by checking air suction at TM Louver. Check MCB 53.1/2 in HB-2 panel. If found tripped, open VCB and reset MCB once.
		Loco SS03: Traction Bogie 2 BOGIE 2 ISOLATED: Only half traction and electrical braking power	LSFI will glow	Bogie 2 will isolate.	<ol style="list-style-type: none"> 1. MCBs 53.1/1 & 53.1/2 alternatively tripping, BUR-II to be kept isolated and try to

SSO3: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		available Press<Enter>		Only half TE/BE power will available.	close VCB. 2. Switch OFF the MCE and switch it ON once again. Raise panto and close VCB and resume traction if loco gets normal. 3. If problem disappear, work with BUR-II isolated. 4. If problem persist, BG-II will get automatically isolated 5. If the same message repeats, resume normal operation with half traction / braking power. 6. Inform TLC and record in the logbook.
SS03	F0301P2	Loco SS03: Traction Bogie 2 EARTH FAULT IN CONVERTER 2 Normal operation can continue To be checked during maintenance F0301P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the loco logbook.
SS03	F0302P2	Loco SS03: Traction Bogie 2 TRACTION MOTOR OVERSPEED TE is being reduced Reduce Loco speed F0302P2			1. Reduce speed. Acknowledge fault by pressing BPFA. 2. Resume normal operation. 3. If TE is reduced to '0' even speeds within limits isolate Bogie 1 by placing 154 on I after opening VCB.
SS03	F0303P2	Loco SS03: Traction Bogie 2 MUB RESISTANCE TOO HOT IN CONVERTER 2 Wait for 30 seconds F0303P2	LSDJ & BPFA will glow, LSFI will start blinking		1. Wait for 30 seconds before re closing VCB in order to cool MUB resistance (15.1 located in converter cubicle). Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB.
SS03	F0304P2	Loco SS03: Traction Bogie 2 FAULTY MOTOR TEMPERATURE SENSOR Normal operation can continue To be checked during maintenance F0304P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS03	F0305P2	Loco SS03: Traction Bogie 2 EQUIPMENT TEMPERATURE HIGH TE/BE is being reduced F0305P2	BPFA will glow	TE/BE will continuously reduced	1. Clear block section. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Wait for 10 minutes or some time till transformer / converter oil temperature normalizes. 3. Check MCBs in HB/SB, if tripped, reset it once. 4. Ensure working of all auxiliaries and MRB. 5. Resume normal traction. 6. If message persists, switch OFF the MCE and Switch it

SS03: TRACTION BOGIE 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					ON once again. Raise panto, close VCB and resume traction if loco get normal otherwise isolate bogie-2 by switch (154) & work the train on one bogie after making conversation with TLC. 7. If no success within 20 minutes, ask for relief loco.
SS03	F0306P2	Loco SS03: Traction Bogie 2 DC LINK CAPACITORS PRESSURE NOT OK Normal operation can continue To be checked during maintenance F0306P2	BPFA will glow		1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook. Inform maintenance staff at destination station. 3. DC link capacitors have to be checked during maintenance. Capacitors may get open circuit or defective.
SS03	F0307P2	Loco SS02: Traction Bogie 2 WHEEL SKIDING IN BOGIE 2 Reduce BE F0307P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Ensure free running of wheels. 2. Ensure that there is no brake binding on loco. 3. Ensure that all parking brakes are released. 4. If speed is more than 1 KMPH and there is message in DDS" Error Tacho Generator". Then driver can work normally. 5. Reduce braking effort; physically experience the wheel skidding sound in running condition. Inform TLC & make entry in Logbook 6. Do not use BPCS and Regenerative braking.

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S BOMBARDIER TRANSPORTATION FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
SS03	F0307P2	Loco XXXXX SS03: Traction Bogie 2 LINE CONVERTER ISOLATED BOGIE 2 Reduced Traction/Braking effort F0307P2	LSDJ & BPFA will glow, LSFI will start blinking	Bogie 2 will isolate. Only half TE/BE power will available.	1. Acknowledge the fault by pressing BPFA & resume normal operation with half traction/braking power. 2. Inform TLC and record in the logbook.
SS03	F0308P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR 1 ISOLATED BOGIE 2 Reduced Traction/Braking effort	LSFI will start blinking	TM 1 of Bogie 2 isolated 5/6 th of	1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S BOMBARDIER TRANSPORTATION FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
		F0308P2	ng, BPFA will glow	traction /electrical braking power available.	logbook.
SS03	F0309P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR 2 ISOLATED BOGIE 2 Reduced Traction/Braking effort F0309P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 2 isolated 5/6 th of traction /electrical braking power available.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS03	F0310P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR 3 ISOLATED BOGIE 2 Reduced Traction/Braking effort F0310P2	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 2 isolated 5/6 th of traction /electrical braking power available.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S BHEL FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
SS03	F0311P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR1- BOGIE 2 ISOLATED TM 1 of bogie 2 isolated only 5/6 th of traction /electrical braking power available. F0311P2	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook.
SS03	F0312P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR2- BOGIE 2 ISOLATED TM 2 of bogie 2 isolated only 5/6 th of traction /electrical braking power available. F0312P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS03	F0313P2	Loco XXXXX SS03: Traction Bogie 2 MOTOR3- BOGIE 2 ISOLATED TM 3 of bogie 2 isolated only 5/6 th of traction /electrical braking power available. F0313P2	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS03	F0314P2	Loco XXXXX SS03: Traction Bogie 2 LINE CONVERTER1- BOGIE 2 ISOLATED	LSFI will start blinki	LC1 of Bogie 2 isolated 1/4 th of	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S BHEL FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
		LC1 of bogie 2 isolated only 3/4 th of traction /electrical braking power available. F0314P2	ng, BPFA will glow	traction /electrical braking power reduction.	logbook.
SS03	F0315P2	Loco XXXXX SS03: Traction Bogie 2 LINE CONVERTER2 - BOGIE 2 ISOLATED LC2 of bogie 2 isolated only 3/4 th of traction /electrical braking power available. F0315P2	LSFI will start blinking, BPFA will glow	LC2 of Bogie 2 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S MEDHA FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
SS03	F0308P2	Loco XXXXX SS03: Traction Bogie 2 TM1- BOGIE 2 ISOLATED TM1 of Bogie 2 isolated only 5/6 th of Traction /Electrical braking power available. F0308P2	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	3. Acknowledge the fault by pressing BPFA & resume normal operation. 4. Inform TLC and record in the logbook.
SS03	F0309P2	Loco XXXXX SS03: Traction Bogie 2 TM2- BOGIE 2 ISOLATED TM2 of Bogie 2 isolated only 5/6 th of Traction /Electrical braking power available. F0309P2	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	3. Acknowledge fault by pressing BPFA. Resume normal operation. 4. Inform TLC and record in the logbook.
SS03	F0310P2	Loco XXXXX SS03: Traction Bogie 2 TM3- BOGIE 2 ISOLATED TM3 of Bogie 2 isolated only 5/6 th of Traction /Electrical braking power available. F0310P2	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 2 isolated 1/6 th of traction /electrical braking power reduction.	3. Acknowledge fault by pressing BPFA. Resume normal operation. 4. Inform TLC and record in the logbook.
SS03	F0311P2	Loco XXXXX SS03: Traction Bogie 2 LINE CONVERTER 1- BOGIE 2 ISOLATED LC1 of Bogie 2 isolated only 3/4 th of Traction /Electrical braking power available. F0311P2	LSFI will start blinking, BPFA will glow	LC1 of Bogie 2 isolated 1/4 th of traction /electrical braking power reduction.	3. Acknowledge fault by pressing BPFA. Resume normal operation. 4. Inform TLC and record in the logbook.
SS03	F0312P2	Loco XXXXX SS03: Traction Bogie 2 LINE CONVERTER 2 - BOGIE 2 ISOLATED LC2 of Bogie 2 isolated only 3/4 th of	LSFI will start blinking,	LC2 of Bogie 2 isolated 1/4 th of traction	3. Acknowledge fault by pressing BPFA. Resume normal operation. 4. Inform TLC and record in the logbook.

ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S MEDHA FITTED IGBT TRACTION CONVERTER					
SS03: TRACTION BOGIE 2					
		Traction /Electrical braking power available. F0312P2	BPFA will glow	/electrical braking power reduction.	

Note: - Additional message for m/s ABB fitted IGBT Traction Converter related with Bogie 1 added in SS05

SSO4: HARMONIC FILTER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS04	F0401P1	Loco XXX SS01: Harmonic filter HARMONIC FILTER CURRENT TOO HIGH Try to close VCB again F0401P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If the message persists. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction.
		Loco XXX SS01: Harmonic filter HARMONIC FILTER ISOLATED Speak to TLC Max. permitted speed is 40 Km/h Press <Enter>	LSFI will glow	Harmonic Filter will isolate. Max speed 40 Km/h	<ol style="list-style-type: none"> 1. Speed will be reduced to 40 KMPH. 2. Inform TLC and Resume normal Traction. 3. After passing 1-2 section, switch OFF the MCE and switch it ON again. 4. If Harmonic filter comes in service, resume normal traction with normal speed. Inform TLC. 5. If not successful, work the train with 40 KMPH and both SR in service or isolate SR-1 by switch 154, switch OFF the MCE & switch it ON (to bring back the isolated Filter in to service) and work with half TE / BE at normal speed as per instruction of TLC. 6. Record in Log book.
SS04	F0402P1	Loco XXX SS01: Harmonic filter HARM. FILTER CONTACTOR (S) STUCK OFF/ON Harmonic filter will be isolated Speak to TLC F0402P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If the message persists, switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction.
		Loco XXX SS01: Harmonic filter HARMONIC FILTER ISOLATED Speak to TLC Max. permitted speed is 40 Km/h Press <Enter>	LSFI will glow	Harmonic Filter will isolate. Max speed 40 Km/h	<ol style="list-style-type: none"> 1. Speed will be reduced to 40 KMPH. 2. Inform TLC and Resume normal Traction. 3. After passing 1-2 section, switch OFF the CE and

SSO4: HARMONIC FILTER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>switch it ON again.</p> <p>4. If Harmonic filter comes in service, resume normal traction with normal speed.</p> <p>5. If not successful, work the train with 40 KMPH and both SR in service or isolate SR-1 by switch 154, switch OFF the MCE & switch it ON (to bring back the isolated Filter in to service) and work with half TE / BE at normal speed as per instruction of TLC.</p> <p>6. Record in Log book.</p>
SS04	F0404P1	Loco XXX SS01: Harmonic filter RESISTOR TOO HOT No. of filter discharges exceeded VCB will remain inhibited 15 min. F0404P1	LSDJ & BPFA will glow, LSFI will start blinking	Harmonic Filter will isolate. Max speed 40 Kmph	<p>1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>2. Wait for 15 minutes and try to close VCB again by pressing BLDJ.</p> <p>3. If the message persists, switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction.</p> <p>4. Inform TLC and Record in Log book.</p>
SS04	F0401P2	Loco XXX SS01: Harmonic filter FILTER CONTACTOR 8.1 STUCK ON If VCB opens it will not close again F0401P2	BPFA will glow		<p>1. If VCB opened it will not be possible to close VCB again by pressing BLDJ. Acknowledge fault by pressing BPFA.</p> <p>2. Do not open VCB and Clear section and stop the train.</p> <p>3. Switch OFF the MCE and switch it ON once again. Raise panto, close VCB and resume Traction.</p> <p>4. If VCB not closing ask for relief loco within 20 minutes.</p>
SS04	F0402P2	Loco XXX SS01: Harmonic filter EARTH FAULT HARMONIC FILTER CIRCUIT Normal operation can continue To be checked during maintenance F0402P2	BPFA will glow		<p>1. Acknowledge the fault by pressing BPFA & resume normal operation.</p> <p>2. Inform TLC and record in the logbook.</p>

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S ABB FITTED IGBT TRACTION CONVERTER					
SS04: HARMONIC FILTER					
SS04	F0403P2	TM1- BOGIE 1 ISOLATED TM 1 of Bogie 1 isolated only 5/6 th of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	<p>1. Acknowledge the fault by pressing BPFA & resume normal operation.</p> <p>2. Inform TLC and record in the logbook.</p>

ADDITIONAL MESSAGE FOR BOGIE 1 OF M/S ABB FITTED IGBT TRACTION CONVERTER					
SS04: HARMONIC FILTER					
SS04	F0404P2	TM2- BOGIE 1 ISOLATED TM 2 of Bogie 1 isolated only 5/6 th of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS04	F0405P2	TM3- BOGIE 1 ISOLATED TM 3 of Bogie 1 isolated only 5/6 th of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 1 isolated 1/6 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS04	F0406P2	LINE CONVERTER1- BOGIE 1 ISOLATED LC1 of bogie 1 isolated only 3/4 th of Traction /Electrical braking power available.	LSFI will start blinking, BPFA will glow	LC1 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS04	F0407P2	LINE CONVERTER2 - BOGIE 1 ISOLATED LC2 of bogie 2 isolated only 3/4 th of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	LC2 of Bogie 1 isolated 1/4 th of traction /electrical braking power reduction.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

SS05: HOTEL LOAD						
SS No.	Fault No.	Fault Message		Lamp	Effect	Action to be taken by driver
SS05	F0503P1	Earth Fault In Hotel Load Circuit. Hotel load will be isolated		LSDJ, & BPFA will glow, LSFI will start blinking	Hotel Load isolated	1. Lift switch BLHO to OFF position to open Hotel load contactor. Acknowledge fault by pressing BPFA. 2. Inform maintenance staff.
SS05	F0504P1	Over Current In Hotel Load Circuit. Try to close the VCB again	1st	LSDJ, & BPFA will glow, LSFI will start blinking		1. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB.
			2nd	LSFI will glow	Hotel Load isolated	Inform maintenance staff.
SS05	F0501P2	Hotel Load Contactor Stuck OFF Hotel load not available.		BPFA will glow		1. Acknowledge fault by pressing BPFA. 2. Inform maintenance staff.

SS05	F0502P2	Hotel Load Contactor Stuck ON For un/coupling hotel load trip VCB		BPFA will glow		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. 2. Inform TLC and proceed as per instruction of TLC as VCB will not close if open.
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ADDITIONAL MESSAGE FOR BOGIE 2 OF M/S ABB FITTED IGBT TRACTION CONVERTER						
SS05: HOTEL LOAD						
SS05	F0503P2	TM1- BOGIE 2 ISOLATED TM 1 of Bogie 2 isolated only 5/6 th of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 1 of Bogie 2 isolated 1/6 of traction /electrical braking power reduction.		<ol style="list-style-type: none"> 1. Acknowledge the fault by pressing BPFA & resume normal operation. 2. Inform TLC and record in the logbook.
SS05	F0504P2	TM2- BOGIE 2 ISOLATED TM 2 of Bogie 2 isolated only 5/6 of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 2 of Bogie 2 isolated 1/6 of traction /electrical braking power reduction.		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS05	F0505P2	TM3- BOGIE 2 ISOLATED TM 3 of Bogie 2 isolated only 5/6 of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	TM 3 of Bogie 2 isolated 1/6 of traction /electrical braking power reduction.		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS05	F0506P2	LINE CONVERTER1- BOGIE 2 ISOLATED LC1 of bogie 2 isolated only 3/4 of Traction /Electrical braking power available.	LSFI will start blinking, BPFA will glow	LC1 of Bogie 2 isolated 1/4 of traction /electrical braking power reduction.		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.
SS05	F0507P2	LINE CONVERTER2 - BOGIE 2 ISOLATED LC2 of bogie 2 isolated only 3/4 of traction /electrical braking power available.	LSFI will start blinking, BPFA will glow	LC2 of Bogie 2 isolated 1/4 of traction /electrical braking power reduction.		<ol style="list-style-type: none"> 1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record in the logbook.

SSO6: AUX-CONVERTER 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS06	F0601P1	Loco XXX SS06: Aux-converter1	LSDJ		1. Bring throttle to '0' position.

SS06: AUX-CONVERTER 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		DISTURBANCE IN PROCESSOR BUR 1 Try to close VCB again F0601P1	& BPFA will glow, LSFI will start blinking		Acknowledge fault by pressing BPFA. 2. BUR-1 get automatically isolated. Press <ENTER> key. 3. Press BLDJ to close VCB. 4. Work the train with normal traction.
		Loco XXX SS06: Aux-converter1 AUX CONVERTER1 ISOLATED Driving still Possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 1 will isolate. Driving possible but Max ventilation level will reduced.	1. Check MCB No. 127.22/1 in SB-1. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR 1 isolated and don't try to bring BUR-1 in service by switching ON/OFF MCE and work the train with BUR-1 isolated. 4. Inform TLC and record in the logbook.
SS06	F0602P1	Loco XXX SS06: Aux-converter1 FAULT IN AUXILIARY CONVERTER 1 Try to close VCB again F0602P1	LSDJ & BPFA will glow, LSFI will start blinking		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If message is repeated, BUR-1 get automatically isolated. Press <ENTER> key. 4. Check 54.1/1 in HB1 panel if found tripped .reset the same on VCB open condition. (IGBT based BUR1also will be isolated with Inverter Fault due to MRB1 not working). 5. Work the train with normal traction.
		Loco XXX SS06: Aux-converter1 AUX CONVERTER1 ISOLATED Driving still possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 1 will isolate. Driving possible but Max ventilation level will reduced.	1. Check MCB No. 127.22/1 in SB-1. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated resume normal operation with BUR-1 isolated. If BUR-1 is not getting isolated, then isolate the BUR-1 by opening MCB (127.22/1) located in

SSO6: AUX-CONVERTER 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					SB-1 cubicle after opening VCB and switching OFFMCE. 4. Energise the loco and work the train with BUR-1 isolated. Under such condition LSFI will glow permanently. 5. Inform TLC and record in the logbook.
SS06	F0603P1	Loco XXX SS06: Aux-converter1 CONTACTOR FAULT IN AUX-CONV 1/HB1 Contactor 52/4 or 52/5 stuck F0603P1	LSDJ & BPFA will glow, LSFI will start blinking		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If fault still persist, then BUR-1 will get isolated. Driver should continue normal operation till next schedule stop.
		Loco XXX SS06: Aux-converter1 AUX CONVERTER 1 ISOLATED Driving still possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 1 will isolate. Driving possible but Max ventilation level will reduced.	1. Work the train with BUR-1 isolated. 2. Inform TLC and record in the logbook.
SS06	F0604P1	Loco XXX SS06: BOGIE1 VENTILATION BUR1 DISTURBED Press acknowledge to to reconfigure to BUR2	LSFI will start blinking & BPFA will glow	Aux. Converter 1 will isolate. Driving possible but Max ventilation level will reduced.	1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR-1 isolated. 4. Inform TLC and record in the logbook.

SSO7: AUX-CONVERTER 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS07	F0701P1	Loco XXX SS07: Aux-converter2 DISTURBANCE IN PROCESSOR BUR 2 Try to close VCB again F0701P1	LSDJ & BPFA will glow, LSFI will start blinking		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. BUR-II get automatically isolated. Press <ENTER> key. 3. Press BLDJ to close VCB. 4. Work the train with normal traction.

SS07: AUX-CONVERTER 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		Loco XXX SS07: Aux-converter2 AUX CONVERTER2 ISOLATED Driving still Possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 2 will isolate. Driving possible but Max ventilation level will reduced.	<ol style="list-style-type: none"> 1. Check MCB No. 127.22/2 in SB-2. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR 2 isolated and don't try to bring BUR-2 in service by switching ON/OFF MCE and work the train with BUR-2 isolated. 4. Inform TLC and record in the logbook.
SS07	F0702P1	Loco XXX SS07: Aux-converter2 FAULT IN AUXILIARY CONVERTER 2 Try to close VCB again F0702P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If message is repeated, BUR-II get automatically isolated. Press <ENTER> key. 4. Check 54.1/2 in HB2 panel if found tripped .reset the same. (IGBT based BUR2&3 also will be isolated with Inverter Fault due to MRB2 not working. It leads to F0110P1. Trouble shoot for the same). 5. Work the train with normal traction.
		Loco XXX SS07: Aux-converter2 AUX CONVERTER2 ISOLATED Driving still possible max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 2 will isolate. Driving possible but Max ventilation level will reduced.	<ol style="list-style-type: none"> 1. Check MCB No. 127.22/2 in SB-2. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR-2 isolated. If BUR-2 is not getting isolated, then isolate BUR-2 by opening MCB (127.22/2) located in SB-2 cubicle after opening VCB and switching OFF MCE. 4. Energise the loco and work the train with BUR-2 isolated. Under such condition LSFI will glow permanently. 5. Inform TLC and record in the logbook.

SS07: AUX-CONVERTER 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS07	F0703P1	Loco XXX SS07: Aux-converter2 CONTACTOR FAULT IN AUX-CONV 2/HB2 Contactor 52/1/2/4 stuck off or on F0703P1	LSDJ, LSFI & BPFA will glow		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If fault still persist, then BUR-2 will get isolated. Driver should continue normal operation till next schedule stop.
		Loco XXX SS07: Aux-converter2 AUX CONVERTER2 ISOLATED Driving still possible max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 2 will isolate. Driving possible but Max ventilation level will reduced.	<ol style="list-style-type: none"> 1. Work the train with BUR-1 isolated. 2. Inform TLC and record in the logbook.
SS07	F0704P1	Loco XXX SS07: BOGIE2 VENTILATION BUR2 DISTURBED Press acknowledge to to reconfigure to BUR1	LSFI & BPFA will glow	Aux. Converter 2 will isolate. Driving possible but Max ventilation level will reduced.	<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR-2 isolated. 4. Inform TLC and record in the logbook.

SS08: AUX-CONVERTER 3					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS08	F0801P1	Loco XXX SS08: Aux-converter3 DISTURBANCE IN PROCESSOR BUR 3 Try to close VCB again F0801P1	LSDJ & BPFA will glow, LSFI will start blinking		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. BUR-III get automatically isolated. Press <ENTER> key. 3. Press BLDJ to close VCB. 4. Work the train with normal traction.
		Loco XXX SS08: Aux-converter3 AUX CONVERTER3 ISOLATED Driving still Possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 3 will isolate. Driving possible but Max ventilation level will reduced.	<ol style="list-style-type: none"> 1. Check MCB No. 127.22/3 in SB-2. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with

SS08: AUX-CONVERTER 3					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					BUR 3 isolated and don't try to bring BUR-3 in service by switching ON/OFF MCE and work the train with BUR-3 isolated. 4. Inform TLC and record in the logbook.
SS08	F0802P1	Loco XXX SS08: Aux-converter3 FAULT IN AUXILIARY CONVERTER 3 Try to close VCB again F0802P1	LSDJ & BPFA will glow, LSFI will start blinking		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If message is repeated, BUR-III get automatically isolated. Press <ENTER> key. 4. Check 54.1/2 in HB2 panel if found tripped .reset the same. (IGBT based BUR2&3 also will be isolated with Inverter Fault due to MRB2 not working. It leads to F0110P1. Trouble shoot for the same). 5. Work the train with normal traction.
		Loco XXX SS08: Aux-converter3 AUX CONVERTER3 ISOLATED Driving still possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 3 will isolate. Driving possible but Max ventilation level will reduced.	1. Check MCB No. 127.22/3 in SB-2. If found tripped, reset it once after swiching MCE OFF. 2. If not tripped, Switch OFF the MCE and switch it ON once again. Raise panto, close VCB and resume traction if loco gets normal. 3. If the same message repeated, resume normal operation with BUR-3 isolated. If BUR-3 is not getting isolated, then isolate BUR-3 by opening MCB (127.22/3) located in SB-2 cubicle after opening VCB and switching OFF MCE. 4. Energise the loco and work the train with BUR-3 isolated. Under such condition LSFI will glow permanently. 5. Inform TLC and record in the logbook.
SS08	F0803P1	Loco XXX SS08: Aux-converter3 CONTACTOR FAULT IN AUX- CONV 3 Contactor 52/3 stuck off or on F0803P1	LSDJ & BPFA will glow, LSFI will start blinki		1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. If fault still persist, then BUR-3 will get isolated. Driver should continue normal operation till next schedule stop.

SS08: AUX-CONVERTER 3					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			ng		
		Loco XXX SS08: Aux-converter3 AUX CONVERTER3 ISOLATED Driving still possible Max. ventilation level will be reduced Press<Enter>	LSFI will glow	Aux. Converter 3 will isolate. Driving possible but Max ventilation level will reduced.	1. Work the train with BUR-1 isolated. 2. Inform TLC and record in the logbook.

Troubleshooting for Repeated Tripping of MCBs of Auxiliary Motors

S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS 06, SS07, SS-08		1) If driver experiences repeated tripping of MCB 59.1/1 or/and 59.1/2 of OCB-1 or/and OCB-2.			1. Switch OFF MCE. 2. BUR- I to be isolated by tripping MCB 127.22/1 located in SB-1.. 3. Reset MCB. 4. Try to work with BUR-I isolated and OCB 1/2 will work on BUR-II. Note: This problem may arise due to unbalance out put voltage of BUR-I.
		2) If driver experiences repeated tripping of MCB 63.1/1 or/and 63.1/2 (of Converter Oil Pump 1 or/and 2) OR/AND MCB 62.1/1 or/and 62.1/2 (of transformer Oil Pump 1 or/and 2).			1. Switch OFF MCE. 2. BUR- II to be isolated by tripping MCB 127.22/2 located in SB-2. 3. Reset MCB. 4. Try to work with BUR-II isolated and MPH-C 1/2 will work on BUR-III. Note: This problem may arise due to unbalance out put voltage of BUR-II.
		3) If driver experiences repeated tripping of MCB 53.1/1 or/and 53.1/2 of TMB-1 or/and TMB-2.			1. Switch OFF MCE. 2. BUR- II to be isolated by tripping MCB 127.22/2 located in SB-2. 3. Reset MCB.. 4. Try to work with BUR-II isolated and TMB 1/2 will work on BUR-I. Note: This problem may arise due to unbalance out put voltage of BUR-II.
		4) If driver experiences repeated tripping of MCB 47.1/1 or/and 47.1/2 (of MCP-1 or/and MCP-2) OR/AND MCB 55.1/1 or/and 55.1/2 (of SCTM-1 or/and SCTM-2).			1. Switch OFF MCE.. 2. BUR- III to be isolated by tripping MCB 127.22/3 located in SB-2. 3. Reset MCB. 4. Try to work with BUR-III isolated and MCP 1/2 will work on BUR-II.

S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					Note: This problem may arise due to unbalance out put voltage of BUR-III.

SSO9: BATTERY SYSTEM

S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS09	F0901P1	Loco XXX SSO9: Battery system BATTERY VOLTAGE TOO LOW Electronics will switch off F0901P1	LSFI will start blinking & BPFA will glow		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 112.1 & 110 in SB-2. If tripped then reset the MCB after switching MCE OFF. 3. If actual voltage in UBA is above 82 volts, then isolate BUR-III by tripping MCB127.22/3 (SB2). Energise loco and resume normal traction 4. If UBA showing voltage less than 82 volts then immediately ask for relief loco.
		Loco XXX SSO9: Battery system MAIN POWER ISOLATED VCB can not be closed: VCB inhibited Loco is dead	LSDJ, LSFI will glow	VCB will not close	<ol style="list-style-type: none"> 1. If the battery can't be switched ON ask for relief loco.
SS09	F0902P1	Loco XXX SSO9: Battery system BATTERY VOLTAGE LOW Converters being switched off Open VCB, lower Panto F0902P1	LSFI will start blinking & BPFA will glow		<ol style="list-style-type: none"> 1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB 112.1 & 110 in SB-2. If tripped then reset the MCB after switching MCE OFF. (Switch OFF MCE and reset MCB 110 to avoid Electronics card failure) 3. Switch ON MCE once. 4. Check battery voltage on UBA, if above 82 volts and MCB-100 trips, Reset MCB after opening VCB. Loco to be kept energized for battery charging.
		Loco XXX SSO9: Battery system MAIN POWER ISOLATED VCB can not be closed: VCB inhibited Loco is dead	LSDJ, LSFI will glow	VCB will not close	<ol style="list-style-type: none"> 1. If the battery can't be switched ON, ask for relief loco.
SS09	F0903P1	Loco XXX SSO9: Battery system PAN LOWERED LONGER THAN 10 MINUTES Control electronics will switch off	LSDJ & BPFA will glow, LSFI will start	Control electronics will OFF	<ol style="list-style-type: none"> 1. If BL key is at D and panto is lowered longer than 10 minutes, then this message is expected. 2. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 3. Switch ON MCE once again

SSO9: BATTERY SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			blinking		by BL Key if required. Driver could avoid occurrence of such fault message by raising one pantograph within 10 minutes after activating the particular cab by putting BL Key in driving position. 4. If pantograph is not raising and message arise then trouble shoot as per F 0103P1.
SS09	F0901P2	Loco XXX SS09: Battery system WARNING: LOW BATTERY VOLTAGE Driving available for less than 30 min Check battery charger MCB F0901P2	BPFA will glow	Loco may be energised for 30 minutes. Guiding available.	1. Check battery charger output MCB 110 in SB-2. If found tripped, reset battery charger output MCB. (Switch OFF MCE and reset MCB 110 to avoid Electronics card failure) and MCB100 in HB2 panel if LP ignored in F0902P2, reset the same on VCB open condition. 2. Acknowledge fault by pressing BPFA. 3. If MCBs are normal and still message persist, clear section and ask for relief loco.
SS09	F0902P2	Loco XXX SS09: Battery system BATTERY CHARGER MCB OFF Try to close the MCB F0902P2	BPFA will glow		1. Check 100 in HB2. If tripped, reset it once after opening VCB. 2. Acknowledge fault by pressing BPFA. 3. Work further with normal traction. 4. If MCB-100 is tripping repeatedly, then isolate BUR-III and try to work with battery charger on BUR-II. 5. If MCB is normal and UBA reads more Voltage on VCB closed condition than the VCB open. It indicates BA is charging, ignore the message and resume normal operation. 6. If BA is not charging, clear section and Inform TLC and proceed as per instruction of TLC.
SS09	F0903P2	Loco XXX SS09: Battery system LOW BATTERY CHARGER CURRENT Battery charger MCB may have Tripped Battery not being charged F0903P2	BPFA will glow		1. Check battery charger output MCB 110 in SB2 and MCB100 in HB2 panel if LP ignored in F0902P2. If found tripped, reset the tripped MCB after opening VCB. 2. Acknowledge fault by pressing BPFA. Clear block section. 3. If MCBs are normal and UBA reads more Voltage on VCB closed condition than

SSO9: BATTERY SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					the VCB open. It indicates BA is charging, ignore the message and resume normal operation. 4. If BA is not charging, clear section and Inform TLC and proceed as per instruction of TLC.. 5. If everything is OK, work the train normal.
SS09	F0904P2	Loco XXX SS09: Battery system DIAGNOSIS MEMORY BATTERY EMPTY Inform TLC during next stop F0904P2	BPFA will glow	No more faults will store in DDS. Loco No. will not appear on display screen & Energy consumption reading will not increase further.	1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record fault in the logbook.
SS09	F0905P2	Loco XXX SS09: Battery system EARTH FAULT BATTERY CIRCUIT Normal operation can continue To be checked during maintenance F0905P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Resume normal operation. 2. Inform TLC and record fault in the logbook.
Note: If MCB 112, located besides battery Box No. 2 or 112.1 is tripped then all cab and machine room lights are switched off. Display screen also becomes blank. Emergency brakes will apply automatically. In such case, LP should check MCB 112 or 112.1, if tripped, then reset the MCB, energise the loco and resume normal traction.					

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS10	F1001P1	Loco XXX SS10: Brake System FAULT IN BRAKE ELECTRONICS Full service brake applied No traction allowed F1001P1	LSFI will start blinking & BPFA will glow	Emergency brake will apply	1. Bring throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB No. 127.7. If found tripped, reset 127.7 once after switching MCE OFF. Release parking Brake through SV30 release plunger and work on wards. If unsuccessful try from rear cab. 3. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction, if loco get normal. 4. If the message repeated bring TE/BE throttle to '0' position. 5. With CCB (Knorr Bremse) equipped locomotive, if rear

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>cab A9 in Emergency bring it to FS & lock it and mode switch in trail position. If not successful use the instructions* to make PTDC mode of CCB (Knorr Bremse) active to clear the Block section.</p> <p>6. If not successful within 20 minutes, ask for relief loco.</p>
SS10	F1002P1	<p>Loco XXX SS10: Brake System LOW PRESSURE MAIN RESERVOIR No traction allowed till pressure reaches 6.4 kg/cm2 F1002P1</p>	<p>LSFI will start blinking & BPFA will glow</p>	<p>TE/BE will not possible till MR pressure reaches to 6.4 Kg/cm2</p>	<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check whether compressor works or not. If MCPs not working, Press BLCP to MAN position. 3. Wait until a MR pressure of 6.4 Kg/cm² reached. 4. Check the MCB of compressors 47.1/1 in HB1 & 47.1/2 in HB2 panels. If found tripped, open VCB and reset the MCB once. 5. If MCPs are working, check leakage from Air dryer. If leakage persists, then isolate Air dryer by isolating D in cock & by putting D out to normal position provided in under frame. 6. Check leakage from Auto drain valve, drain cocks of main reservoir 1 & 2 or air leakage from CP delivery pipe and unloader valve if any air leakage concerne COC can be closed if available. If unloader valve COC is not available cable of EP26 in pneumatic panel to be disconnected. In KNORR CCB-2 locos, VEUL COC to be closed in pneumatic panel. 7. FP pressure drops, close 136 coc. 8. Check train for heavy leakage in pneumatic system. If BP pressure drops causes drop MR pressure , isolate VCD/SPM / TPWS (close cocs provided in both cabs below A9 If provided) .Ensure ALP Emergency valve closed on both cabs/rear cab A9 in neutral. 9. If there is no leakage and MCBs of both the Compressors are in closed

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>condition, even then compressor are not working and MR is not being maintained, Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume Traction if loco get normal.</p> <p>10. If not successful isolate BUR3 (open MCB.127.22/3 in SB2 panel after opening VCB).Close VCB and resume Traction if loco get normal.</p> <p>11. If not successful within 20 minutes, ask for relief loco.</p>
SS10	F1003P1	Loco XXX SS10: Brake System VIGILANCE EMERGENCY BRAKE APPLICATION Bring TE/BE Throttle to 0 Press vigilance reset push button F1003P1	LSV W & BPFA will glow, LSFI will start blink ing	Emergency brake BP pressure will drop to 3 kg to 2.5 kg/cm2. Buzzer will sound	<p>A. If this message is due to not acknowledging VCD by crew, then</p> <ol style="list-style-type: none"> 1. Bring TE/BE Throttle to '0' position. 2. Apply A-9 to emergency to avoid depletion of MR through BP. 3. Wait for 120 seconds as Penalty Brake applied due to Vigilance can be reset only after 120 seconds. So, don't press BPVR during these 120 seconds. 4. Press yellow Vigilance Reset Pushbutton BPVR on Panel A of Driving Desk after 120 seconds. Ensure LSVW goes OFF and Buzzer stop blowing. Note: If CCB of Knorr Bremse, Press BPVR after 32 seconds (vigilance reset time is 32 seconds) 5. Press and Release 'Vigilance' Paddle Switch. 6. Press BPFA 7. Move A9 Handle to run. After resetting Penalty Brake, BP will be charged to 5 Kg/cm2. 8. If the penalty brakes remains applied even after the above, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume normal traction. <p>B. If vigilance penalty brakes are applied even when driver is alert during running, there is a chance that vigilance control Device may be defective or vigilance</p>

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>acknowledge switch of driver side not working. In this condition check with Asst. Driver's side pushbutton. If still the same condition, Vigilance control device may be defective. So switch OFF MCE and put vigilance isolating switch (Vigilance Cut-out Switch 237.1) provided on SB1 panel to '0' position. This will make vigilance control device isolated.</p> <ol style="list-style-type: none"> 1. Switch ON MCE, close VCB and resume Normal traction with VCD in isolated condition. 2. Inform TLC and be vigilant. Note: In this case low MR pressure message is expected. So ignore it.
SS10	F1004P1	<p>Loco XXX SS10: Brake System WORKING WRONG CONFIGURATION BRAKE SYSTEM Check isolating coc brake control Wrong coc position, to reset open VCB F1004P1</p>	LSFI will start blinking & BPFA will glow		<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check isolating (E70 Brake Pipe isolating cock) provided on pneumatic panel. If found close then open cock No. 70. Close VCB. If Cock No. 70 already open and even though message appears, then problem may be with limiting switch provided on cock, operate it manually 2-3 times. 3. Also check ZBAN switch. It should be OFF, if not, put it at OFF position. 4. Resume Normal Traction.
SS10	F1005P1	<p>Loco XXX SS10: Brake System TRACTION WITH AUTO BRAKE NOT ALLOWED Release parking brakes Bring TE/BE Throttle to 0 F1005P1</p>	LSFI will start blinking & BPFA will glow	Auto brake applied TE/BE not possible.	<ol style="list-style-type: none"> 1. Release Auto Air Brake. Check BP, it should be 5 Kg/cm² 2. Bring TE/BE Throttle to '0' position. Acknowledge fault by pressing BPFA. 3. Resume normal traction. 4. If not successful, try from other cab.
SS10	F1006P1	<p>Loco XXX SS10: Brake System TRACTION WITH PARKING BRAKES NOT ALLOWED Release parking brakes Bring TE/BE Throttle to 0 F1006P1</p>	LSFI will start blinking & BPFA will glow	Auto brake applied TE/BE not possible.	<ol style="list-style-type: none"> 1. Bring TE/BE Throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Release parking brake with illuminated Red Push Button BPPB. In case parking brakes get released, then parking brake gauge will show pressure of 6 Kg/cm² and BPPB will extinguish.

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<ol style="list-style-type: none"> 3. If parking brake is not getting released, then inspect the Latch Solenoid valve (30) on pneumatic panel. If it is found permanently latched in applied condition, then release it. 4. Press releasing knob and lock in that condition if necessary. 5. If still parking brakes not released, check for any sign of air leakage from parking brake cylinder hosepipe. If there is leakage, then arrest the leakage. 6. After releasing parking brakes, resume normal traction.
SS10	F1007P1	Loco XXX SS10: Brake System REGENERATIVE BRAKE FAILURE Pneumatic loco brake applied F1007P1	LSFI will start blinking & BPFA will glow	Brake will apply to loco.	<ol style="list-style-type: none"> 1. Bring TE/BE Throttle to '0' position, loco brakes will be released. Acknowledge fault by pressing BPFA. 2. Control the train through A-9. Press PVEF, till BC-1/BC-2 gauge pressure reaches '0' Kg/cm² 3. No electrical Brake power available; braking can be done with A9/SA9 only. 4. Resume Normal Traction 5. Inform TLC and record in the Logbook.
SS10	F1008P1	Loco XXX SS10: Brake System EMERGENCY STOP, SHUTDOWN ON THE LOCO To release, reset emergency stop push button Bring TE/BE Throttle to 0 F1008P1	LSDJ & BPFA will glow, LSFI will start blinking	VCB open, panto lower, TE/BE '0', Emergency brake will apply	<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. 2. Reset Emergency Stop push Button by rotating it in the direction of Arrow marked on it. It will come out a little bit. 3. Press BPFA. 4. Raise Pantograph. 5. Close VCB. 6. Resume Normal Traction after charging BP and MR. 7. If not successful, try from other cab.
SS10	F1009P1	Loco XXX SS10: Brake System TRACTION NOT ALLOWED WITH APPLIED BRAKE Release loco brake Bring TE/BE Throttle to 0 F1009P1	LSFI will start blinking & BPFA will glow	Loco brake is applied	<p>This fault messages is generated when BC pressure is over 0.65 Kg/cm², throttle is not at zero position and speed is over 10 KMPH.</p> <ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Release Loco Brakes with SA9. (Ensure rear cab SA9 in release condition, Lift Bail ring of C3W distributor valve

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>in E70 brake system. Press 20TP and 16 TP nipples in pneumatic panel in knorr brake locos)</p> <p>3. If BC gauge show '0' pressure and message appears then Tap gently Pressure Switch 269.6/1 & 269.6/2 (provided between AR & Pneumatic panel)</p> <p>4. If not successful, switch OFF MCE and ON.</p> <p>5. Inform TLC and Record in Log book.</p> <p>Note: This message also will come during ACP in passenger trains due to BP drop more than 0.6 kg/cm2.</p>
SS10	F1010P1	Loco XXX SS10: Brake System EMG. EXHAUST COCK CLOSED, NO TRACTION For traction open the cock Bring TE/BE Throttle to 0 F1010P1	LSFI will start blinking & BPFA will glow	BP is reduced to '0'	<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Open the Emergency Exhaust Cock No. 74 on the pneumatic panel 3. If cock 74 is already open and even though message appears, then problem may be with limiting switch provided on cock, operate it manually 2-3 times. 4. If loco becomes normal, then proceed otherwise, switch off MCE and switch it ON again.
SS10	F1001P2	Loco XXX SS10: Brake System LOCO IS IN BANKING MODE Loco brake controller isolated Emergency brakes can be applied F1001P2	BPFA will glow		<ol style="list-style-type: none"> 1. This message is expected when loco is in banking mode (ZBAN is ON and Cock 70 is isolated). If not in Banking mode follow the procedure given below: 2. Bring TE/BE throttle to '0' position. 3. Check position of ZBAN switch. If ON, then switch it OFF. 4. It could be due to maloperation of ZBAN microswitch. Operate ZBAN switch 2-3 times vigorously, it will normalize if stuck up. 5. Close VCB and resume normal traction. 6. If not successful, try to work from rear cab after switching ON/ OFF MCE. 7. Inform TLC and Record in Log book.
SS10	F1002P2	Loco XXX SS10: Brake System ALARM CHAIN PULLING	BPFA will		<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Bring the train to a

SS10: BRAKE SYSTEM					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		Check train F1002P2	glow		halt at convenient place immediately. Work as per operating Manual and GR. 4.45/1. 2. Check the affected coach, find out the reason of ACP, reset the ACP, acknowledge fault by pressing BPFA and work the train accordingly.
-	-	No Message, but if driver experiences that air drier is not working	-	-	Check MCB 128.1(SB-2), if found tripped, reset the MCB once. If the MCB trips again, resume normal operation with air drier in isolated condition. Also record in the log book.

SS11: AUXILIARIES HB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS11	F1101P2	Loco XXX SS11: Auxiliaries HB1 MCB(S) TRIPPED IN AUX. CUBICLE 1 Traction power may get reduced, if temperature exceed. F1101P2	BPFA will glow		<ol style="list-style-type: none"> 1. Check MCB's in Auxiliary cubicle HB1. If any MCB found tripped then reset it once after opening VCB. 2. Acknowledge the fault by pressing BPFA and continue normal operation. 3. If any MCB is not tripped but still message is coming and all auxiliaries are working, ignore it. This may be due to defective control contact of concerned MCB. 4. If MCB (59.1/1 or 62.1/1 or 63.1/1 or 53.1/1) getting tripped after resetting it once as given in step 1 above, then driver should not try to reset these MCBs. Trouble shoot as per Trouble shooting for Repeated Tripping of MCBs of Auxiliary Motors given at the end of SS08 (page no. 32 & 33). 5. Inform TLC and record in loco logbook. Resume traction with bogie 1 in isolated condition if automatically isolated. 6. In case of any other MCB excluding MCB given in step 4 above is getting tripped after resetting once, then continue normal operation as long as possible and inform TLC. 7. In case of 54.1/1 tripping repeatedly, Inform TLC and act as per instruction of TLC

SS11: AUXILIARIES HB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS11	F1102P2	Loco XXX SS11: Auxiliaries HB1 EARTH FAULT 415/110V CIRCUIT Normal operation can continue To be checked during maintenance F1102P2	BPFA will glow		1. Acknowledge fault by pressing BPFA. Resume normal traction. 2. Inform TLC and record in loco logbook.
SS11	F1103P2	Loco XXX SS11: Auxiliaries HB1 MCB OFF MAIN COMPRESSOR OPEN Compressor 1 not available F1103P2	BPFA will glow		1. Check MCB No. 47.1/1 provided in Auxiliary cubicle 1 (HB1). If found in tripped condition, then open VCB and reset MCB once. 2. Acknowledge fault by pressing BPFA. 3. Resume normal traction. If the message repeats then work the train with one compressor. 4. Inform TLC and record in loco logbook. Note: If MCBs 47.1/1 & 47.1/2 alternatively tripping, Open VCB, reset MCBs and isolate BUR3.
SS11	F1104P2	Loco XXX SS11: Auxiliaries HB1 OVERLOAD ON OCB-1 Isolate OCB F1104P2	BPFA will glow		1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Trip MCB 59.1/1 (Oil Cooling Blower) in HB-1. 3. Isolate Bogie-1 by switch 154 (SB-!) 4. Normal operation can be continued with one bogie.
SS11	F1105P2	Loco XXX SS11: Auxiliaries HB1 Rotary switch Vigilance off/on position Normal operation F1105P2	BPFA will glow		1. Acknowledge by pressing BPFA. 2. Resume normal traction & be vigilant 3. Inform to TLC and record in log book Note: Isolate VCD through 237.1(SB1) only during failure / mal-functioning.
SS11	F1106P2	Loco XXX SS11: Auxiliaries HB1 Loco in shunting mode Speed can not be more than 15 kmph F1106P2	BPFA will glow		1. Check switch no. 160 (SB-1), if it is on '0', bring throttle to '0', bring speed '0' and Reverser on '0' then put switch 160 on 'I' to achieve normal speed. 2. Acknowledge fault by pressing BPFA and work the train normal.

SS12: AUXILIARIES HB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS12	F1201P2	Loco XXX SS12: Auxiliaries HB2 MCB(S) TRIPPED IN AUX. CUBICLE 2 Traction power may get reduced, if temperature exceed. F1201P2	BPFA will glow		1. Check MCB's in Auxiliary cubicle HB2. If any MCB found tripped then reset it once after opening VCB. 2. Acknowledge the fault by

SS12: AUXILIARIES HB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>pressing BPFA and continue normal operation.</p> <ol style="list-style-type: none"> 3. If any MCB is not tripped but still message is coming and all auxiliaries are working, ignore it. This may be due to defective control contact of concerned MCB. 4. If MCB (59.1/2 or 62.1/2 or 63.1/2 or 53.1/2) getting tripped after resetting it once as given in step 1 above, then driver should not try to reset these MCBs. Trouble shoot as per Troubleshooting for Repeated Tripping of MCBs of Auxiliary Motors given at the end of SS08 (page no. 32 & 33). 5. Inform TLC and record in loco logbook. Resume traction with bogie 2 in isolated condition if automatically isolated. 6. In case of any other MCB excluding MCB given in step 4 above is getting tripped after resetting once, then continue normal operation as long as possible and inform TLC. 7. In case of 54.1/2 tripping repeatedly, inform TLC and act as per instructions of TLC.
SS12	F1202P2	Loco XXX SS12: Auxiliaries HB2 MCB OF MAIN COMPRESSOR OPEN Compressor 2 not available F1202P2	BPFA will glow		<ol style="list-style-type: none"> 1. Check MCB No. 47.1/2 provided in Auxiliary cubicle 2 (HB2). If found in tripped condition, then open VCB and reset MCB once. 2. Acknowledge fault by pressing BPFA. 3. Resume normal traction. Even if the message repeats, then work the train with one compressor. 4. Inform TLC and record in loco logbook. <p>Note: If MCB 47.1/1 & 47.1/2 alternatively tripping, Open VCB, rest MCBs and isolate BUR3.</p>
SS12	F1203P2	Loco XXX SS12: Auxiliaries HB2 OVERLOAD ON OCB-2 Isolate OCB F1203P2	BPFA will glow		<ol style="list-style-type: none"> 1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Trip MCB 59.1/2 (Oil Cooling Blower) in HB-2. 3. Isolate Bogie-2 by switch 154(SB).

SS12: AUXILIARIES HB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					4. Normal operation can be continued with one bogie.

SS13: CAB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS13	F1301P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR HBB1 Cab 1 may get isolated, drive from cab 2 refer to driver's manual F1301P1	LSFI will start blink ing & BPFA will glow	Cab 1 may get isolated,	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB in SB-1 if tripped, reset once after switching MCE OFF. 3. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction.
		Loco XXX SS13: Cab 1 CAB 1 ISOLATED Drive from cab 2 Press<Enter>	LSFI will glow	Cab 1 isolated	1. Change to Cab 2. 2. Inform TLC and record in loco logbook.
SS13	F1302P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR STB1 Cab 1 may get isolated, drive from cab 2 refer to driver's manual F1302P1	LSFI will start blink ing & BPFA will glow	Cab 1 may get isolated,	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB in SB-1 if tripped, reset once after switching MCE OFF. 3. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction.
		Loco XXX SS13: Cab 1 CAB 1 ISOLATED Drive from cab 2 Press<Enter>	LSFI will glow	Cab 1 isolated	1. Change to Cab-2 2. Inform TLC and record in Loco logbook.
SS13	F1303P1	Loco XXX SS13: Cab 1 REVERSER DEFECTIVE Drive from cab 2	LSFI will start blink ing & BPFA will glow		1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Operate Reverser 2-3 times .Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 3. If the same message repeats, change to Cab-2. Inform TLC and record in Loco logbook.

SS13: CAB 1 (For WAP5 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS13	F1301P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR HBB1 CAB 1 WILL NOT ISOLATED; DRIVE FROM CAB 1	LSFI will start blink ing &	Cab 1 will not isolated, normal driving	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA and proceed. Note: All MCB in HB1 except

SS13: CAB 1 (For WAP5 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		F1301P1	BPFA will glow	from Cab 1 or Cab 2.	47.1/1 (Compressor 1) will not monitored.
SS13	F1302P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR STB1 CAB 1 WILL NOT ISOLATED; DRIVE FROM CAB 1 F1302P1	LSFI will start blinking & BPFA will glow	Cab 1 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA and proceed. Note: • Air dryer not working. • Hotel load not working. • Auto sanding not working.

SS13: CAB 1 (For WAG9/WAG9H/WAP7 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS13	F1301P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR HBB1 CAB 1 WILL NOT ISOLATED; DRIVE FROM CAB 1 F1301P1	LSFI will start blinking & BPFA will glow	Cab 1 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA and proceed. Note: • All MCBs in HB-1 not monitored, • Earth Fault relays 415/110 not monitored, • Fuse 415/110 not monitored.
SS13	F1302P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR STB1 CAB 1 WILL NOT ISOLATED; DRIVE FROM CAB 1 F1302P1	LSFI will start blinking & BPFA will glow	Cab 1 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. When Bogie isolation needed, Isolate Bogie-1 by MCB 127.1/1, Isolate Bogie-2 by MCB 127.1/2. 3. When MCE OFF required put BL key to OFF position and switch OFF MCB 112.1. Note: • Air dryer not working. • Hotel load not working. • Failure mode switch not working

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS13: CAB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS13	F1301P1	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR RBU2 Driving from Cab1 still possible; Press BPFA F1301P1	LSFI will start blinking & BPFA will glow	Driving from Cab 1 still possible.	1. Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume Traction. 2. If the Fault still persists acknowledge the fault by pressing BPFA and Drive normally from any CAB.
SS13	F1302P1	Loco XXX SS13: Cab 1	LSFI	Driving	1. Switch OFF the MCE and

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS13: CAB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		DISTURBANCE IN PROCESSOR RBU1 Driving from Cab1 still possible; Press BPFA F1302P1	will start blinking & BPFA will glow	from Cab 1 still possible.	1. Switch it ON. Raise panto, close VCB and resume traction. 2. If the Fault still persists acknowledge the fault by pressing BPFA and Drive normally from any CAB. 3. CAB-1 TE/BE meters will not be available. 4. Loco will be operated in failure Mode (Auto activation) from CAB-1. 5. Normal loco operation from CAB-2.
SS13	F1303P1	Loco XXX SS13: Cab 1 REVERSER DEFECTIVE Drive from cab 2 F1303P1	LSFI will start blinking & BPFA will glow	Cab 1 may get isolated, drive from cab 2	1. Bring TE/BE Throttle to '0' position, Acknowledge fault by pressing BPFA. 2. Operate Reverser 2-3 times. 3. If not successful try to clear the block section by coasting. Switch OFF and ON MCE. 4. If the same message repeats, change to Cab2 and work further with rear cab. 5. Inform TLC and record in Loco logbook.
		Loco XXX SS13: Cab 1 CAB 1 ISOLATED Drive from cab 2 Press<Enter>	LSFI will glow	Cab 1 isolated	1. Switch OFF the MCE and Switch it ON. 2. If the same message repeats and driving from Cab1, change to Cab2. Inform TLC and record in Loco logbook.
SS13	F1304P1	Loco XXX SS13: Cab 1 RBU1 RIOM EXTENSION FAULT Driving still possible F1304P1		Driving still possible	1. Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from Cab1, change to Cab2. Inform TLC and record in Loco logbook. 3. Read out DDS messages and check which RIOM extension to replace.
SS13	F1305P1	Loco XXX SS13: Cab 1 RBU2 RIOM EXTENSION FAULT Driving still possible F1305P1		Driving still possible	1. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from Cab1, change to Cab2. Inform TLC and record in Loco log book. 3. Read out DDS messages and check which RIOM extension to replace.
Note: If Cab-1 gets hanged and not getting activated after making MCE OFF and ON, then check all MCBs in SB-1 and SB-2 and reset it if found tripped					

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS13: CAB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS13	F1303P1	Loco XXX SS13: Cab 1 REVERSER DEFECTIVE Drive from cab 2 F1303P1	LSFI will start blinking & BPFA will glow		1. Operate Reverser 2-3 times. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from cab 1, change to Cab-2. Inform TLC and record in Loco logbook.
SS13	F1304P1	Loco XXX SS13: Cab 1 START RUN INTERLOCK Simultaneous Motoring & Braking command from Throttle of CAB1 F1304P1			1. Bring TE/BE Throttle to '0' position. 2. Switch OFF the MCE and switch it ON, if message is repeats, try from other CAB to clear the section.
SS13	F1301P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DIP1 F1301P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • Constant Speed control will not work from CAB1, • Simulation mode will not work, • PVEF will not functions from CAB1, • 47.1/1 MCB tripping can not be detected.
SS13	F1302P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DIP2 F1302P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • MCBs (53.1/1, 54.1/1, 55.1/1, 56.1/1 & 59.1/1) tripping can not be detected.
SS13	F1303P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DIP3 F1303P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • Earth Faults(control, Filter & 415/110) can not be detected, • MCBs (62.1/1 & 63.1/1) tripping can not be detected.
SS13	F1304P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DIP4 F1304P2			1. Record the fault in the log book and continue Normal operation.
SS13	F1305P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DOPI F1305P2			1. Record the fault in the log book and continue Normal operation. Following functions will not

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14, SS17 & SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS13: CAB 1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					work: <ul style="list-style-type: none"> Lamp indications will not work, Lamp indications can be seen on TFT display unit.
SS13	F1306P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DOP2 F1306P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> Air dryer will not work.
SS13	F1307P2	Loco XXX SS13: Cab 1 DISTURBANCE IN PROCESSOR VCU1-DOP3 F1307P2			1. Record the fault in the log book and continue Normal operation.

SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS14	F1401P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR HBB2 Cab 2 may get isolated, drive from cab 1 refer to driver's manual F1401P1	LSFI will start blinking & BPFA will glow	Cab 2 may get isolated,	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB SB-2 if tripped, reset once after switching MCE OFF. 3. If not tripped, Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume Traction.
		Loco XXX SS14: Cab 2 CAB 2 ISOLATED Drive from cab 1 Press<Enter>	LSFI will glow	Cab 2 isolated	1. Change to Cab 1. 2. Inform TLC and record in loco logbook.
SS14	F1402P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR STB2 Cab 2 may get isolated, drive from cab 1 refer to driver's manual F1402P1	LSFI will start blinking & BPFA will glow	Cab 2 may get isolated,	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Check MCB in SB-2 if tripped, reset once after switching MCE OFF. 3. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction.
		Loco XXX SS14: Cab 2 CAB 2 ISOLATED Drive from cab 1 Press<Enter>	LSFI will glow	Cab 2 isolated	1. Change to Cab-1 2. Inform TLC and record in Loco logbook.
SS14	F1403P1	Loco XXX SS14: Cab 2 REVERSER DEFECTIVE Drive from cab 1	LSFI will start blinking & BPFA will glow		1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Operate Reverser 2-3 times .Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction.

SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					3. If the same message repeats, change to Cab-1. Inform TLC & record in logbook.
Note: If Cab-1 or Cab-2 get hanged and not getting activated after making MCE OFF and ON, then check all MCBs in SB-1 and SB-2 and reset it if found tripped.					

SS14: CAB 2 (For WAP5 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS14	F1401P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR HBB2 CAB 2 WILL NOT ISOLATED; DRIVE FROM CAB 2 F1401P1	LSFI will start blinking & BPFA will glow	Cab 2 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA and proceed. 2. If driving from cab 2 changing the position of panto selector switch (85) on 'II' provided on pneumatic panel. Because pan 1 is not available.
SS14	F1402P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR STB2 CAB 2 WILL NOT ISOLATED; DRIVE FROM CAB 2 F1402P1	LSFI will start blinking & BPFA will glow	Cab 2 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA and proceed. 2. Over speed of speedometer 105% & 110% and speedometer alarm not available hence driver should drive more vigilant and watch the speedometer regularly. 3. If driving from cab 1 changing the position of panto selector switch (85) on 'I' provided on pneumatic panel. Because pan 2 is not available. Note: All MCB in HB2 except 47.1/2 (Compressor 2) will not monitored.

SS14: CAB 2 (For WAG9/WAG9H/WAP7 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS14	F1401P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR HBB2 CAB 2 WILL NOT ISOLATED; DRIVE FROM CAB 2 F1401P1	LSFI will start blinking & BPFA will glow	Cab 2 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Stop the Train and release parking brake manually. 2. Isolate vigilance control equipment by switch 237.1(SB-1) put on '0'. 3. If driving from cab 2 changing the position of panto selector switch (85) on 'II' provided on pneumatic panel. Because pan 1 is not available. 4. Acknowledge fault by pressing BPFA and proceed.

SS14: CAB 2 (For WAG9/WAG9H/WAP7 Locomotives provided with VCU redundancy features)					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					5. Don't take throttle to BE position because regenerative braking is not working. 6. Auto Flasher not working because pressure switch flow indicator not monitored. Switch ON BPFL manually if required. Note: <ul style="list-style-type: none"> Pressures switch Direct Brake not monitored. Pressures switch Pan-1 & Pan-2 not monitored.
SS14	F1402P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR STB2 CAB 2 WILL NOT ISOLATED; DRIVE FROM CAB 2 F1402P1	LSFI will start blinking & BPFA will glow	Cab 2 will not isolated, normal driving from Cab 1 or Cab 2.	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. When Bogie isolation needed, Isolate Bogie-1 by MCB 127.1/1, Isolate Bogie-2 by MCB 127.1/2. 3. When MCE OFF required put BL key to OFF position and switch OFF MCB 112.1. Note: <ul style="list-style-type: none"> All MCBs in HB-2 not monitored. Over speed of speedometer not monitored, Vigilance warning buzzer not monitored, Erath fault auxiliary not monitored.

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS14	F1401P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR RBU4 Driving from Cab2 still possible; Press BPFA F1401P1	LSFI will start blinking & BPFA will glow	Driving from Cab 2 still possible.	1. Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume Traction. 2. If the Fault still persists acknowledge the fault by pressing BPFA and Drive normally from any CAB.
SS14	F1402P1	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR RBU3 Driving from Cab2 still possible; Press BPFA F1401P1	LSFI will start blinking & BPFA will glow	Driving from Cab 2 still possible.	1. Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume traction. 2. If the Fault still persists acknowledge the fault by pressing BPFA and Drive normally from any CAB. 3. CAB-2 TE/BE meters will not be available. 4. Loco will be operated in

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					failure Mode (by operating Rotating Switch 152 from '0' to '1' position) from CAB-2. 5. No regenerative braking power is available. So control the train/loco with help of pneumatic brake (A9 or SA9). 6. Normal loco operation from CAB-1.
SS14	F1403P1	Loco XXX SS14: Cab 2 REVERSER DEFECTIVE Drive from cab 1 F1403P1	LSFI will start blinking & BPFA will glow	Cab 2 may get isolated, drive from cab 1	1. Bring Throttle to '0' position, Acknowledge fault by pressing BPFA. 2. Operate Reverser 2-3 times. 3. If not successful try to clear the block section by coasting. Switch OFF and ON MCE. 4. If the same message repeats, change to Cab1 and work further with rear cab. 5. Inform TLC and record in Loco logbook.
		Loco XXX SS14: Cab 2 CAB 2 ISOLATED Drive from cab 1 Press<Enter>	LSFI will glow	Cab 2 isolated	1. Switch OFF the MCE and Switch it ON. 2. If the same message repeats and driving from Cab2, change to Cab1. Inform TLC and record in Loco logbook.
SS14	F1404P1	Loco XXX SS14: Cab 2 RBU3 RIOM EXTENSION FAULT Driving still possible F1404P1		Driving still possible	1. Switch OFF the MCE and Switch it ON. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from Cab2, change to Cab1. Inform TLC and record in Loco logbook. 3. Read out DDS messages and check which RIOM extension to replace.
SS14	F1405P1	Loco XXX SS14: Cab 2 RBU4 RIOM EXTENSION FAULT Driving still possible F1405P1		Driving still possible	1. Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from Cab2, change to Cab1. Inform TLC and record in Loco log book. 3. Read out DDS messages and check which RIOM extension to replace.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS14	F1403P1	Loco XXX SS13: Cab 2	LSFI		1. Operate Reverser 2-3 times.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		REVERSER DEFECTIVE Drive from cab 1 F1403P1	will start blinking & BPFA will glow		Switch OFF the MCE and Switch it ON once again. Raise panto, close VCB and resume traction. 2. If the same message repeats and driving from cab 2, change to Cab-1. Inform TLC and record in Loco logbook.
SS14	F1404P1	Loco XXX SS14: Cab 2 START RUN INTERLOCK Simultaneous Motoring & Braking command from Throttle of CAB2 F1404P1			1. Bring TE/BE Throttle to '0' position. 2. Switch OFF the MCE and switch it ON, if message is repeats, try from other CAB to clear the section.
SS14	F1401P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DIP1 F1401P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • Constant Speed control will not work from CAB2, • PVEF will not functions from CAB2, • MCBs (47.1/2, 54.1/2 & 59.1/2) tripping can not be detected.
SS14	F1402P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DIP2 F1402P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • MCBs (53.1/2, 55.1/2 & 56.1/2) tripping can not be detected.
SS14	F1403P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DIP3 F1403P2			1. Record the fault in the log book and continue Normal operation. Following functions will not work: <ul style="list-style-type: none"> • Smoke warning can not be detected, • MCBs(62.1/2 & 63.1/2) tripping can not be detected
SS14	F1404P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DIP4 F1404P2			1. Record the fault in the log book and continue Normal operation.
SS14	F1405P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DOPI F1405P2			1. Record the fault in the log book. 2. If driving from Cab 2, ZPT switch moved to Down position. Kept panto selection switch (129.1) at 1 position and ZPT moved to Up position and check the panto

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS14: CAB 2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					1 is raised and continue normal operation. Following functions will not work: <ul style="list-style-type: none"> Lamp indications will not work, Lamp indications can be seen on TFT display unit. Panto 2 can not be raised.
SS14	F1406P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DOP2 F1406P2			1. Record the fault in the log book. 2. If driving from Cab 1, ZPT switch moved to Down position. Kept panto selection switch (129.1) at 2 position and ZPT moved to Up position and check the panto 2 is raised and continue normal operation Following functions will not work <ul style="list-style-type: none"> Panto 1 can not be raised. Sanding valves will not work.
SS14	F1407P2	Loco XXX SS14: Cab 2 DISTURBANCE IN PROCESSOR VCU2-DOP3 F1407P2			1. Record the fault in the log book and continue Normal operation.
Note: If Cab-2 get hanged and not getting activated after making MCE OFF and ON, then check all MCBs in SB-1 and SB-2 and reset it if found tripped.					

SS15: FIRE DETECTION UNIT					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS15	F1501P1	Loco XXX SS15: Fire detection FIRE IN MACHINE ROOM Extinguish the fire Reset the fire detection unit F1501P1	LSFI will start blinking & BPFA will glow, Buzzer will sound		1. Bring TE/BE throttle to '0' and immediately stop the train Open VCB, Lower Pantograph and switch off the MCE. 2. Inspect the Machine Room. If there is any sign of smoke emission, trip MCB 112.1(SB2) and extinguish the fire by using portable fire extinguisher. 3. In case of larger fire, especially in Traction converter, then open the cock of CO2 Cylinder provided in the locker on Asst. Driver side in each cab. Keep the machine room door locked. 4. Subsequently, reset the fire detection unit by pressing reset push button provided on fire detection unit (located in

SS15: FIRE DETECTION UNIT					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					SB-2 cubicle) then acknowledges the fault by pressing BPFA. 5. If every thing is found normal, resume normal traction. Inform TLC and record in loco logbook.
SS15	F1501P2	Loco XXX SS15: Fire detection FAULT IN FIRE DETECTION UNIT No fire detection, Possible normal operation can continue F1501P2	BPFA will glow		1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Resume Normal Traction. 3. Keep on checking the Machine Room as frequently as possible for the sign of any smoke/fire. 4. Inform TLC and record in the logbook.
SS15	F1502P2	Loco XXX SS15: Fire detection WARNING SMOKE IN MACHINE ROOM Inspect machine room F1502P2	BPFA will glow		1. Bring TE/BE throttle to '0' and immediately stop the train. Open VCB, lower pantograph and switch off the MCE. 2. Inspect the Machine Room carefully. In case of any fire/smoke, trip MCB 112.1(SB2) and extinguish the fire by using portable fire extinguishers. 3. In case of larger fire, especially in Traction converter, then open the cock of CO2 and operate regulator Cylinder provided in the locker on Asst. Driver side in each cab. Keep the machine room door locked. 4. If every thing is found normal, resume normal Traction. 5. Inform TLC and record in the logbook.

SS16: SPEEDOMETER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS16	F1601P1	Loco XXX SS16: Speedometer SPEED LIMIT EXCEEDED Emergency brakes TE/BE Throttle to 0 F1601P1	LSFI will start blink ing & BPFA will glow	Emergenc y brakes/ Partial brake will applied till speed comes down	1. Bring TE/BE throttle to '0' position to reduce loco speed. 2. Acknowledge the fault by pressing BPFA. 3. When speed comes down the limit, resume normal traction. 4. If the speed shown in speedometer is not coming within the limits, but actual speed has come down this means that speedometer is defective. The drivers advise to open the speedometer

SS16: SPEEDOMETER					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					<p>MCB (127.92) provided in SB2 cubicle.</p> <p>5. Now the speedometer will be isolated. So drive carefully and watch speed on display in simulation mode screen.</p> <p>6. Inform TLC and record in loco logbook and act accordingly.</p>
SS16	F1601P2	<p>Loco XXX SS16: Speedometer FAULT IN SPEEDOMETER No display of speed in the cab Drive carefully, use diagn screen F1601P2</p>	BPFA will glow		<p>1. Bring TE/BE throttle to '0' position.</p> <p>2. Inspect the speedometer MCB (127.92) in SB2 cubicle. If found in tripped condition then reset the MCB once, acknowledge fault by pressing BPFA and resume normal operation if loco gets normal.</p> <p>3. If fault still persist, then isolate the speedometer by opening MCB (127.92) provided in SB2 cubicle.</p> <p>4. Now the speedometer will be isolated. So drive carefully and watch speed on display in simulation mode screen.</p> <p>5. Inform TLC and record in the logbook.</p> <p>6. As per instruction of TLC. Normal traction can be resumed.</p>

SS17: FLG1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS17	F1701P1	<p>Loco XXX SS17: Processor FLG1 DISTURBANCE IN PROCESSOR FLG1 FLG1 will be isolated F1701P1</p>	LSFI will start blinking & BPFA will glow	FLG1 will be isolated	<p>1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>2. Switch OFF the MCE once & switch it ON again.</p> <p>3. Resume Normal Traction.</p> <p>4. Inform TLC and record in the logbook.</p>
		<p>Loco XXX SS17: Processor FLG1 FLG1 ISOLATED Refer to driver's manual Press<Enter></p>	LSFI will glow	FLG1 is isolated	<p>1. Multiple Operations is not possible.</p> <p>2. Resume normal traction.</p> <p>3. If working from Cab-1, Angle transmitter in Cab1 and Bogie meter in Cab-1 will not work. TE/BE control changes automatically to Auxiliary contacts mode.</p> <p>4. Inform TLC and record in the logbook.</p>
SS17	F1702P1	<p>Loco XXX SS17: Processor FLG1 SOFTWARE MISMATCH WAP-5/WAG-9 Panto will not raise F1702P1</p>	LSFI will start blinki	Panto will not raise	<p>1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA.</p> <p>2. Inform TLC and record in the</p>

SS17: FLG1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			ng & BPFA will glow		logbook. 3. Ask for relief loco immediately.
SS17	F1703P1	Loco XXX SS17: Processor FLG1 FAULT IN ANGLE TRANSMITTER OF THROTTLE Bring TE/BE Throttle to zero Operate switch failure mode F1703P1	LSFI will start blinking & BPFA will glow		1. Bring TE/BE Throttle to '0' position. 2. Acknowledge the Fault by pressing button BPFA. 3. Drive loco in Failure Mode Operation (by operating Rotating Switch 152 from '0' to '1' position) located in SB1 panel. 4. Resume normal traction with 152 switch in failure mode position.If not success, operate switch 152 (SB-1) 2-3 times. 5. Switch OFF the MCE and switch it ON once again. 6. Try from rear cab. If not success, inform TLC and record in the logbook.
SS17	F1704P1	Loco XXX SS17: Processor FLG1 SIMULATION SWITCH POSITION NOT MATCHING Check simulation Key on master/slave F1704P1	LSFI will start blinking & BPFA will glow	Panto will not rise.	1. Bring TE/BE Throttle to '0' position. 2. Switch OFF the MCE. 3. Check if Simulation key 179 in SB1 panel is on '0' position. If not, operate it from '1' to '0' position. 4. Switch ON the MCE. Resume Normal Traction. 5. Inform TLC and record in the logbook.
SS17	F1701P2	Loco XXX SS17: Processor FLG1 DISTURBANCE IN PROCESSOR DIA 1 DIA 1 will be isolated No fault data will be stored Press<Enter> F1701P2	BPFA will glow	DDS will not store.	1. Since no fault will be stored in DDS, record all faults in the loco logbook. 2. Acknowledge fault by pressing BPFA. Resume Normal Traction. 3. Inform TLC and record in the logbook.

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS17: ICP1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS17	F1701P1	Loco XXX SS17: Processor ICP1 DISTURBANCE IN PROCESSOR ICP2 ICP12will be isolated F1701P1	LSFI will start blinking & BPFA will glow	ICP1 will be isolated	1. Resume Normal Traction. 2. Inform TLC and record in the logbook.
		Loco XXX SS17: Processor ICP1 ICP1 ISOLATED Refer to driver's manual	LSFI will glow	ICP1 is isolated	1. Multiple Operations is not possible. 2. Resume normal traction.

Fault Messages in TCN & IGBT SR fitted BHEL Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS17: ICP1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		Press<Enter>			3. Inform TLC and record in the logbook.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS17: MCC1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS17	F1701P1	Loco XXX SS17: Processor MCC1 DISTURBANCE IN PROCESSOR MCC1 MCC1 will be isolated F1701P1	LSFI will start blinking & BPFA will glow	MCC1 will be isolated	1. Switch OFF the MCE and Switch it ON once again. 2. Resume Normal Traction. 3. Inform TLC and record in the logbook.
		Loco XXX SS17: Processor MCC1 MCC1 ISOLATED Refer to driver's manual Press<Enter>	LSFI will glow	MCC1 is isolated	1. If driving from Cab 1, drive loco in Failure Mode Operation by operating Rotating Switch 152 from '0' to '1' position (located in SB1 panel). 2. Resume normal traction. 3. Inform TLC and record in the logbook. Note: Only failure mode operation is possible from CAB1, TE/BE meters will not work in CAB1, the TE/BE % values can be seen through display.
SS17	F1703P1	Loco XXX S17: Processor MCC1 FAULT IN ANGLE TRANSMITTER OF THROTTLE Bring TE/BE Throttle to zero Operate switch failure mode F1703P1			1. Bring TE/BE Throttle to '0' position. 2. Acknowledge the Fault by pressing BPFA. 3. Drive loco in Failure Mode Operation (by operating Rotating Switch 152 from '0' to '1' position) located in SB1 panel. 4. Resume normal traction with 152 switch in failure mode position. If not success, operate switch 152 (SB-1) 2-3 times. 5. Switch OFF the MCE. 6. Try from rear cab. If not success, inform TLC and record in the logbook.
SS17	F1704P1	Loco XXX SS17: Processor MCC1 SIMULATION SWITCH POSITION NOT MATCHING Check simulation key on master/slave F1704P1			1. Bring TE/BE Throttle to '0' position. 2. Switch OFF the MCE. 3. Check if Simulation key 179 in SB1 panel is on '0' position. If not, operate it from '1' to '0' position. 4. Switch ON the MCE and

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14, SS17 & SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS17: MCC1					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					Resume Normal Traction. 5. Inform TLC and record in the logbook.
SS17	F1701P2	Loco XXX SS17: Processor MCC1 DISTURBANCE IN PROCESSOR DMC 1 DMC 1 will be isolated No fault data will be stored in DMC1 Press<Enter>		DDS will not stored in DMC1, DDS will store in DMC2	1. Resume Normal Traction. 2. Inform TLC and record in the logbook.

SS18: FLG2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS18	F1801P1	Loco XXX SS18: Processor FLG2 DISTURBANCE IN PROCESSOR FLG2 FLG2 will be isolated F1801P1	LSFI will start blinking & BPFA will glow	FLG2 will be isolated	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Switch OFF the MCE and Switch it ON once again. 3. Resume Normal Traction. 4. Inform TLC and record in the logbook.
		Loco XXX SS18: Processor FLG2 FLG2 ISOLATED Refer to driver's manual Press<Enter>	LSFI will glow	FLG2 is isolated	1. If the same message repeats resume normal traction. 2. If working from Cab-2, Angle transmitter in Cab2 and Bogie meter in Cab-2 will not work. TE/BE control changes automatically to Auxiliary contacts mode. 3. No regenerative braking power is available. So control the train/loco with help of pneumatic brake (A9 or SA9). When apply A9 insure TE/BE Thottle to '0' position. 4. Inform TLC and record in the logbook.
SS18	F1802P1	Loco XXX SS18: Processor FLG2 SOFTWARE MISMATCHED WAP-5/WAG-9 Panto will not raise F1802P1	LSFI will start blinking & BPFA will glow	Pinto will not raise	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Inform TLC and record in the logbook. 3. Ask for relief loco immediately.
SS18	F1803P1	Loco XXX SS18: Processor FLG2 FAULT IN ANGLE TRANSMITTER OF THROTTLE Bring TE/BE Throttle to zero Operate switch failure mode F1803P1	LSF will start blinking & BPFA will glow		1. Bring TE/BE Throttle to '0' position. 2. Acknowledge the Fault by pressing BPFA. 3. Drive loco in Failure Mode Operation by operating Rotating Switch 152 (SB-1) from '0' to '1' position after

SS18: FLG2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
			I		opening VCB. 4. Resume normal traction with 152 switch in failure mode position. If not success, operate switch 152 (SB-1) 2-3 times. 5. Switch OFF the MCE and switch it ON once again. 6. Try from rear cab. If not success, inform TLC and record in the logbook.
SS18	F1804P1	Loco XXX SS18: Processor FLG2 SIMULATION SWITCH POSITION NOT MATCHING Check simulation Key on master/slave F1804P1	LSFI will start blinking & BPFA will glow	Panto will not rise.	1. Bring TE/BE Throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Switch OFF the MCE. 3. Check if Simulation key 179 in SB1 panel is on '0' position. If not, operate it from '1' to '0' position. 4. Switch ON the MCE. Resume Normal Traction. 5. Inform TLC and record in the logbook.
SS18	F1801P2	Loco XXX SS18: Processor FLG2 DISTURBANCE IN PROCESSOR DIA 1 DIA 1 will be isolated No fault data will be stored F1801P2	BPFA will glow	DDS will not store.	1. Since no fault will be stored in DDS, record all faults in the loco logbook. 2. Acknowledge fault by pressing BPFA. Resume Normal Traction. 3. Inform TLC and record in the logbook.

Fault Messages in TCN & IGBT SR fitted BHEL Locos , except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based Locos					
SS18: ICP2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS18	F1801P1	Loco XXX SS18: Processor ICP2 DISTURBANCE IN PROCESSOR ICP1 ICP1 will be isolated F1801P1	LSFI will start blinking & BPFA will glow	ICP1 will be isolated	1. Resume Normal Traction. 2. Inform TLC and record in the logbook.
		Loco XXX SS18: Processor ICP2 ICP1 ISOLATED Refer to driver's manual Press<Enter>	LSFI will glow	ICP1 is isolated	1. Multiple Operations is not possible. 2. Resume normal traction. 3. Inform TLC and record in the logbook.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based					
SS18: MCC2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
SS18	F1801P1	Loco XXX SS18: Processor MCC2 DISTURBANCE IN PROCESSOR	LSFI will	MCC2 will be	1. Switch OFF the MCE and Switch it ON once again.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based					
SS18: MCC2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
		MCC2, MCC2 will be isolated F1801P1	start blinking & BPFA will glow	isolated	2. Resume Normal Traction. 3. Inform TLC and record in the logbook.
		Loco XXX SS18: Processor MCC2 MCC2 ISOLATED Refer to driver's manual Press<Enter>	LSFI will glow	MCC2 is isolated	1. If the same message repeats, If driving from Cab 2, drive loco in Failure Mode Operation by operating Rotating Switch 152 from '0' to '1' position (located in SB1 panel). 2. Resume normal traction. 3. No regenerative braking power is available. So control the train/loco with help of pneumatic brake (A9 or SA9). When apply A9 insure TE/BE Throttle to '0' position. 4. Inform TLC and record in the logbook. Note: Only failure mode operation is possible from CAB2, TE/BE meters will not work in CAB2, the TE/BE % values can be seen through display.
SS18	F1803P1	Loco XXX SS18: Processor MCC2 FAULT IN ANGLE TRANSMITTER OF THROTTLE Bring TE/BE Throttle to zero Operate switch failure mode F1803P1			1. Bring TE/BE Throttle to '0' position. 2. Acknowledge the Fault by pressing BPFA. 3. Drive loco in Failure Mode Operation (by operating Rotating Switch 152 from '0' to '1' position) located in SB1 panel. 4. Resume normal traction with 152 switch in failure mode position. If not success, operate switch 152 (SB-1) 2-3 times. 5. If not success switch OFF the MCE. 6. Try from rear cab. If not success, inform TLC and record in the logbook.
SS18	F1804P1	Loco XXX SS18: Processor MCC2 SIMULATION SWITCH POSITION NOT MATCHING Check simulation key on master/slave F1804P1			1. Bring TE/BE Throttle to '0' position. 2. Switch OFF the MCE. 3. Check if Simulation key 179 in SB1 panel is on '0' position. If not, operate it from '1' to '0' position. 4. Switch ON the MCE and Resume Normal Traction.

Addl./ Change in fault Messages of IGBT fitted MEDHA Locos, except SS13, SS14,SS17& SS18 other subsystem faults Trouble shooting procedure is same as MICAS GTO based					
SS18: MCC2					
S.S. No.	Fault No.	Fault Message	Lamp	Effect	Action to be taken by Driver
					4. Inform TLC and record in the logbook.
SS18	F1801P2	Loco XXX SS18: Processor MCC2 DISTURBANCE IN PROCESSOR DMC 2 DMC 2 will be isolated No fault data will be stored in DMC2 F1801P2		DDS will not stored in DMC2, DDS will store in DMC1	1. Resume Normal Traction. 2. Inform TLC and record in the logbook.

SS19: TRAIN BUS			
S.S. No.	Fault No.	Fault Message	Action to be taken by Driver
SS19	F1901P1	Loco XXX SS19: Train Bus COMMUNICATION DISTURBANCE Try to close the VCB again Multiple operation not possible	1. Bring TE/BE throttle to '0' position. Acknowledge fault by pressing BPFA. 2. Press BLDJ to close VCB. 3. Check cable for multiple operations. 4. Inform TLC and record in the logbook.
		LocoXXX SS19: Train Bus TRAIN BUS ISOLATED Multiple operation not possible	1. No multiple operations possible. 2. Inform TLC and record in the logbook. 3. Continue normal operation. LSFI will glow continuously.

*** PTDC (Pneumatic Time Dependent Controller) SET UP**

This feature has been provided in case there is any problem with CCB (**Knorr Bremse**) Brake system. By keeping brake system in this mode, locomotive can move at a restrictive speed of 10 Km/h to clear the section.

PTDC mode would only work until speed is below 10 Km/h. To make PTDC active:

A- Unmodified CCB (Knorr Bremse) loco:

- **Open** Pneumatic Panel MCB (127.2) in SB2 panel; keep Vigilance Circuit Breaker in SB2 ON.
- **Turn PB-BUS** cock on brake panel to vertical position.
- **Turn PER-COS** (Pneumatic equalizing Reservoir Cut out Switch) cock on brake panel to vertical position.
- **Unlock** the Auto/A9 handle in operative cab and lock the same in other cab.
- **Move** and hold the **PTDC** handle, in active driver's cab in the Release position. BP would charge to normal level of 5 kg/cm² and BC should reduce to zero. If BC is not reducing to zero than give brief pulls to quick release lever at bottom of distributor valve. Ensure BC reduces to zero

Apply and release auto brake through PTDC as per requirement by keeping the handle in Apply and Release position (spring loaded) for sufficient enough time by observing the BP pressure gauge.

B- Modified knorr's Computer Control Brake (Knorr Bremse) loco:

- **Open** Pneumatic Panel MCB (127.7) in SB2 panel; one time message of "**Brake Electronics Failed**" will come.

- **Turn PER-COS** (Pneumatic Equalizing Reservoir Cut out Switch) cock on brake panel to **VERTICAL** position and press the BPFA to acknowledge message, the message of “**Brake Electronics Failed**” will not come again.
- **Verify** Auto/A9 handle of Brake Controller UNLOCKED in operative cab and LOCKED in other cab.
- In active driver's cab, move and hold the **PTDC** handle in the position **II**. BP would charge to normal level of 5 kg/cm² and BC should reduce to zero. If BC is not reducing to zero then give brief pulls to quickrelease lever provided at bottom of distributor valve. Ensure BC reduces to zero.
(**Note: If Loco Brake remains applied, press 20TP/16TP (Test Point nipple) of 20CP & 16CP on Pneumatic Panel to Release BC to Zero.**)
- **Apply and Release** auto brake through PTDC as per requirement by moving the handle slightly towards **II** (RELEASE) & **V** (APPLY) positions for sufficient time by observing the BP pressure gauge.
- Now release Parking Brake by Pressing BPPB and operate the loco (take traction).

OTHER IMPORTANT INSTRUCTION FOR DRIVERS

1. Procedure for switching OFF/ON of Electronics (MCE)

When driver desires to switch OFF electronics and switch ON once again to eliminate any transient fault, following sequence should be followed.

- 1) Bring throttle to ‘0’. Stop the train. Open VCB. Lower the Panto.
- 2) Move the BL key from position ‘D’ to position ‘OFF’ and wait for 2 seconds for automatic application of parking brakes.
- 3) Then move the BL key from position ‘OFF’ to position ‘C’ and again to ‘OFF’.
- 4) Wait for 5-10 seconds for electronics to switch OFF completely.
- 5) Check the driver display, it should become blank. Now electronics has been switched OFF completely.
- 6) Attempt switching ON once again by moving BL key from ‘OFF’ to position ‘D’.

2. Instructions to drivers for resetting of MCBs if machine room and corridor light also switch off with switching off of electronics

RDSO have issued Modification Sheet no. RDSO/2011/EL/MS/0403 (Rev.0) dated 30.11.11. The corridor light and cab light are directly connected to battery through MCB 310.4. Corridor light and cab lights remain “ON” after the MCE “OFF” or the locomotive is shutdown. To avoid this circuit is modified, so that the machine room light and cab lights get switched off automatically after a delay of 10 minutes even if MCE is “ON” after the locomotive is shutdown. However this may pose problem in resetting of MCB or doing some trouble shooting in machine room after switching off electronics as machine room light and corridor light will also get switched off. In order to overcome this situation drivers are required to be instructed that to examine machine room BL, key should be kept in driving mode or in cooling mode and for resetting of MCB or for doing some trouble shooting in machine room the BL key should be put in cooling mode again after switching off the electronics with following

sequence so that contactor no.126 gets closed and contactor no.218 does not close in cooling mode.

Driving → Off → Cooling → Off → Cooling

3. Procedure for Resetting of MCB

Some times MCB trips momentarily without any equipment failure. Driver should try to reset MCB once.

(A) For resetting “ABB” make MCB

- 1) Some times resetting screw below the respective phase turns to horizontal position from initial vertical position during tripping.
- 2) Ensure screw below all the three phases in vertical position before resetting MCB. If any screw is in horizontal position then turn it clock wise to vertical position with screw driver.
- 3) MCB handle should be reset by lifting it upside. While lifting the MCB handle, it should be ensured that handle of all the three phases should be lifted at a time.

(B) For resetting “Merlin Gerin” make MCB

Pull handle downward first towards OFF side.
Then pull handle in upward direction towards ON side.

4. Procedure for Bogie isolation:

- i) **If the loco is running.**
 - Bring the throttle to ‘0’ position.
 - Open the VCB. Loco will come in Node No. 550.
 - Select the desired bogie by using configuration switch 154.
 - Bogie will be isolated after 10 seconds.
- ii) **If the loco is stand still.**
 - Bring the throttle to ‘0’ position. Loco will come in Node No. 590.
 - Select the desired bogie by using configuration switch 154.
 - Bogie will be isolated after 10 sec.

5. Procedure for operation of Configuration Switch no. 160 (Shunting Mode) :

Configuration switch No. 160 is provided in SB-1 panel. It has two positions ‘0’ and ‘I’. Normal position is ‘I’. When it is put on ‘0’, the speed is limited to 15 Kmph. For changing the position of this switch ensure that Throttle is at ‘0’, Speed is ‘0’ and Reverser is on ‘0’.

3 Q1 @ (ABB) yklsdsfy, I kll; funk

1. fMLlYsLØhu DDS ij dkbZ QKYV eš st vkus ij ml s/; kui w d i < e l j uk / djus ds mi j kUr gh , Dukyst dja D; k d d n QKYV , d s hkh inf " k r g k r s g s t k s LV k j ugh a g k r s g a
When any fault message display on DDS screen first read carefully and write in logbook before acknowledge the fault. Because few messages are only displayed but not stored as DDS.
2. i k ; V h & 1 ; k i k ; V h & 2 ds f d l h H k h QKYV e a e " k h u : e d h t k b vo " ; d j a r F k k T S D ds v u d k j d k ; b k g h d j a
Must check the machine room when Priority1 or Priority2 faults display and take action according to TSD.
3. f d l h H k h , e l h c h d k s f j l v / d j u s l s i w z l E c f / k r v k D t h y j h @ m i d j . k d h t k b vo " ; d j a ; f n v k D t h y j h @ m i d j . k B h d g k s r k s g h , e l h c h f j l v / d j a
Must check concern auxiliary/equipment before resetting the MCB. If concern auxiliary/equipment found ok, then only reset the MCB.
4. H B - 1 / H B - 2 e a y x h , e l h c h d k s V C B [k s y d j f j l v / @ f v i d j a
Reset/Trip MCB provided in HB1/HB2 after opening VCB.
5. S B - 1 / S B - 2 d h , e l h c h d k s d U V t s y b y D V k f u D I v k Q d j d s f j l v / @ f v i d j a i j U r q L i h M k e h V j M C B 1 2 7 . 9 2 S B - 2) , H e a d l i g h t M C B 3 1 0 . 1 / 1 (S B - 1) , H e a d l i g h t M C B 3 1 0 . 1 / 2 (S B - 2) r F k k M a r k e r l i g h t M C B 3 1 0 . 7 / 1 (S B - 2) d k s V C B [k s y d j g h R e s e t / T r i p d j a
Reset/Trip MCB provided in SB1/SB2 after MCE OFF. However reset MCB 127.92 SB-2), Head light MCB310.1/1 (SB-1), Head light MCB 310.1/2(SB-2) and Marker light MCB 310.7/1(SB-2) after opening VCB.
6. t c d H k h d U V t s y b y D V k f u D I v k Q d j u s d h v k o " ; d r k g k s r k s d k s L V a k e a c y k d l d " k u D y h ; j d j u s d h d k s " k l d j a r F k k A - 9 d k s b e j t w l h i k s t h " k u i j j [k d j g h d U V t s y b y D V k f u D I v k Q d j a r k f d M R i s k j c p k ; k t k l d a
Try to clear block section in coasting whenever MCE OFF required and OFF the MCE after putting A-9 at emergency position to save the MR pressure.
7. f u E u f y f [k r Q K Y V e a ; f n c k s x h v k b l k s y / d j u s d h v k o " ; d r k g k s r k s M C B 1 2 7 . 1 / 1 v F k o k M C B 1 2 7 . 1 / 2 d s } k j k g h c k s x h v k b l k y / d j a
F0104P1- "CATENARY VOLTAGE OUT OF LIMIT"
F0107P1- "PRECHARGE OR MAIN CONTACTOR STUCK ON"
F0107P2- "DEMANDED SPEED CAN NOT BE ACHIEVE"
b l d s v f r f j D r v l ; Q K Y V e š s t e a c k s x h v k b l k s y / d j u s d h v k o " ; d r k g k s r k s f l o p 1 5 4 d s } k j k c k s x h v k b l k s y / d j a
If there is need of bogie isolation in case of following faults, isolate bogie through MCB 127.1/1 and MCB 127.1/2 only:
F0104P1- "CATENARY VOLTAGE OUT OF LIMIT"
F0107P1- "PRECHARGE OR MAIN CONTACTOR STUCK ON"
F0107P2- "DEMANDED SPEED CAN NOT BE ACHIEVE"
If bogie isolation required in other fault messages except above messages, isolate bogie through bogie isolation switch 154.
8. v k b l k s y / c k s x h d k s l f o l e a y k u s d s f y , d U V t s y b y D V k f u D I d k s v k Q d j u k v k o " ; d g a
MCE must be OFF before putting isolated bogie in service back.
9. t c d H k h P T F u s e c n y u s d h v k o " ; d r k g k r k s V C B [k s y s r F k k i Ø V k s y k s j d j u s d s c k n g h P T F u s e c n y a

If it is required to change PT fuse, Change PT fuse after opening VCB and lowering pantograph.

10. Whenever the MCB of Oil cooling Blower (OCB1/2) or Traction Motor Blower (TMB1/2) is reset, before the closing of VCB assistant Loco Pilot must stand near the concern auxillary. After closing VCB, If any abnormality (Abnormal sound, Bad smell etc.) felt, then isolate concerne auxillary.

Whenever the MCB of Oil cooling Blower (OCB1/2) or Traction Motor Blower (TMB1/2) is reset, before the closing of VCB assistant Loco Pilot must stand near the concern auxillary. After closing VCB, If any abnormality (Abnormal sound, bad smell etc.) felt, then isolate concerne auxillary.

11. Fault No. F0201P1 and F0301P1, wait for 5 minits to ON the MCE.

If the MCE OFF required due to fault No. F0201P1 and F0301P1, wait for 5 minits to ON the MCE.

12. If VCB opens with DDS blank & Pantograph lowered and LSFI & BPFA glows then act according to fault no F0103P1.

If VCB opens with DDS blank & Pantograph lowered and LSFI & BPFA glows then act according to fault no F0103P1.

13. IGBT (ABB Make) Loco BL Key OFF to D position in IGBT (ABB Make) Locos.

Train configuration starts after 90 seconds when BL key put OFF to D position in IGBT (ABB Make) Locos.

14. If regenerative brake fails or no tention (OHE not available) or VCB open during regenerative braking in ABB locos then press PVEF immediately and apply A9 because wheel may skid due to application of Loco brake.

If regenerative brake fails or no tention (OHE not available) or VCB open during regenerative braking in ABB locos then press PVEF immediately and apply A9 because wheel may skid due to application of Loco brake.

15. If VCB trips during cooling mode before reclosing of VCB, check the machine room, OCR-78 and transformer oil if every thing have normal then close the VCB.

If VCB trips during cooling mode before reclosing of VCB, check the machine room, OCR-78 and transformer oil if every thing have normal then close the VCB.

16. If MCB of any Auxillary again trip after ressetting then act according to Troubleshooting for Repeated Tripping of MCBs of Auxiliary Motors given after F0804P1.

If MCB of any Auxillary again trip after ressetting then act according to Troubleshooting for Repeated Tripping of MCBs of Auxiliary Motors given after F0804P1.