



ADVANCED RAIL CONTROLS PVT.LTD



LOCOMOTIVE DIAGNOSTIC SYSTEM (LDS-05)
OPERATIONS AND MAINTENANCE MANUAL

Version *1.0*
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WORKS AT:
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1 INTRODUCTION

1.1 PURPOSE

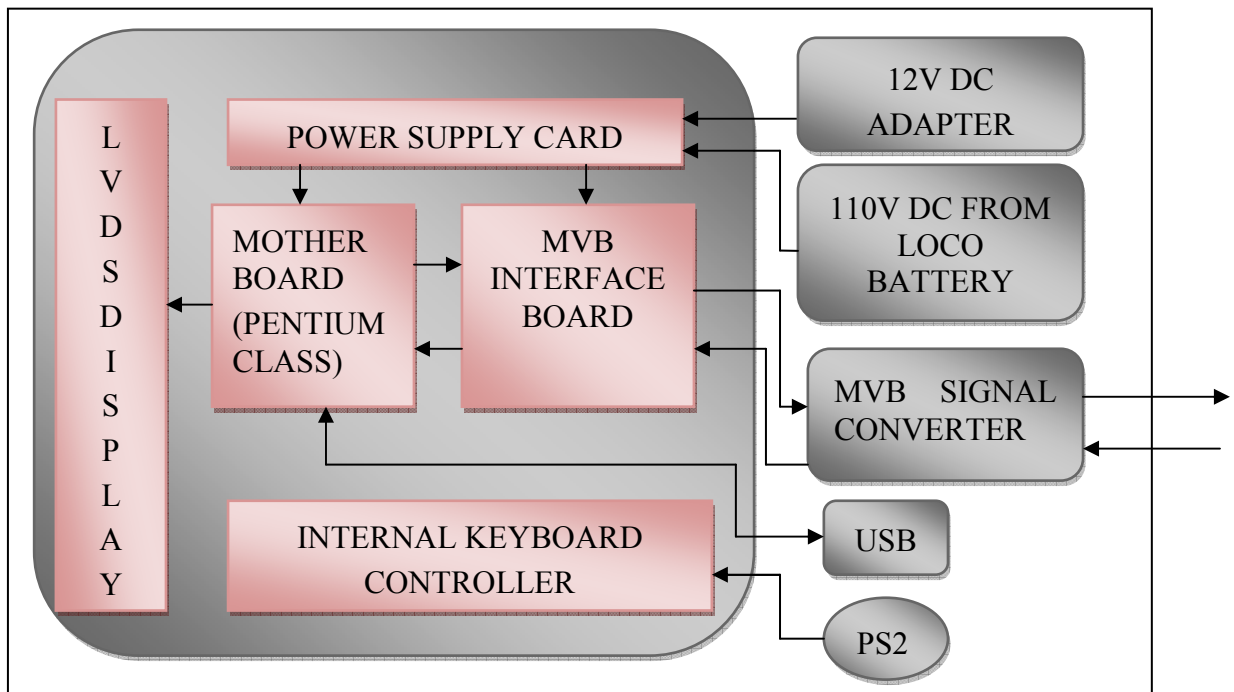
Locomotive Diagnostic System (LDS-05) is a portable tool designed around a Pentium class processor, having MVB interface gateway which can communicate with MICAS-S2 electronics of three phase locomotives. The tool works under DOS operating system needed for the MicTools. File transfer is possible through USB drive under DOS environment. For this purpose, the USB thumb drive has to be inserted before booting so that it is recognized as a drive. The equipment can operate either at 110V DC or at 230V AC 50Hz supply. The 110V DC supply is directly connected through a 3 pin circular connector, whereas, ac input option is through an adapter providing 12V DC.

2 SYSTEM DESCRIPTION

2.1 SYSTEM OPERATIONS

System Architecture

Fig-1



The system architecture is given in Fig-1. The heart of the equipment is a Pentium class processor. The processor is connected with MVB interface gateway, which provides connectivity to the MICAS MVB. The equipment has a RAM of 1GB and solid state hard disk of 4GB capacity. External interfaces include USB, PS2 and MVB. The equipment has been loaded with DOS operating system. If the USB thumb drive is inserted before booting, it will be detected as a drive and file transfer is possible under DOS like any other drive.

The equipment has provision to connect to locomotive battery at 110V DC (variation permissible is 77V to 137.5V) or it can be connected to 230V AC 1 Phase 50Hz through an external adapter. The adapter output is 12V DC 4A, and fed through a circular connector. The ON/OFF switch cuts off both 110V DC supply (when connected to loco) as well as 12V DC.

The MVB is connected to the control electronics through a signal converter externally. One set of MVB cables with signal converter are supplied along with each equipment.

2.2 FIRST-TIME USERS

Please note that the equipment houses dedicated electronic devices with complex interface. The equipment can be opened and serviced only by trained persons. Any attempt by untrained persons to open and service can permanently damage the equipment. Hence, it is strongly advised not to open the warranty seal. Warranty will become null and void if the seal is broken.

2.3 EXTERNAL INTERFACES

All the external interfaces are provided at the rear panel. The details of connectors are given at Fig-2.

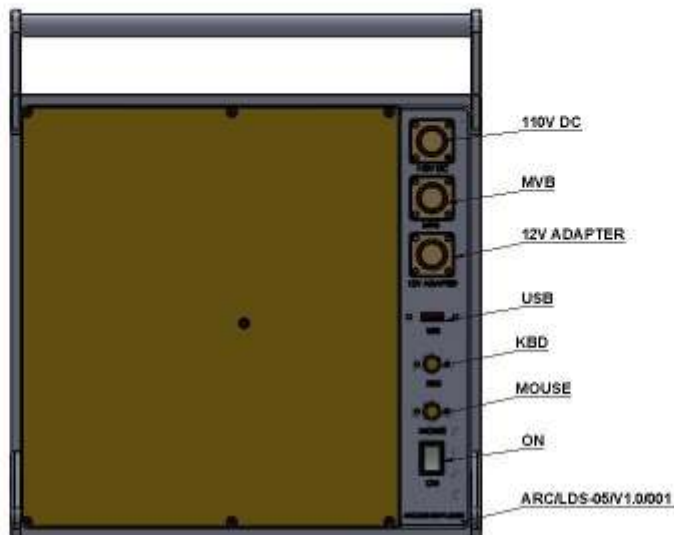


Fig.2

2.4 CONFIGURATION

PATH & DIRECTORY SETTING

Path Setting in <autoexec.bat> file:

Path = C:\Loco\tools\nc50; c:\loco\mict380; c:\loco\util; c:\loco\mict380\asm;

<config.sys> setting

In the <CONFIG.SYS>, set <FILES=90>

2.5 STARTING THE SYSTEM




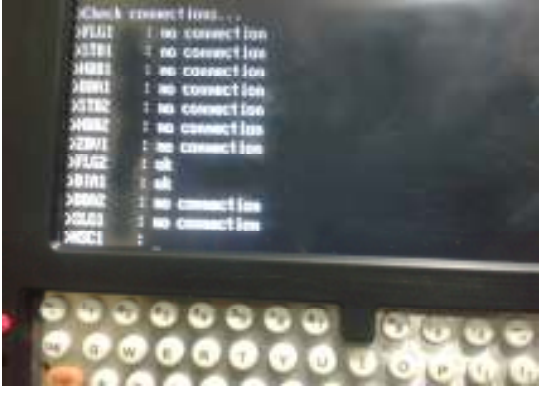
Prepare the MVB cable first. For this purpose, connect the MVB cable (long 5.5m) and MVB cable (short 0.5m) through the signal converter supplied along with this equipment. Provide the MVB cable between equipment and the electronic rack (in bus coupler stub line). Provide power supply, either 110V DC (if the equipment is inside locomotive) or 12V DC through the supplied adapter (in case the equipment usage is outside the locomotive). Switch ON the equipment using ON/OFF switch. The equipment will boot under DOS. Run the Norton commander for easy file handling. Change the working directory to <LOCO> for working with MicTools.

If the USB thumb drive is inserted before booting, USB will be identified by the system as a separate drive and file transfer is possible from / to the USB drive using Norton commander or DOS commands.



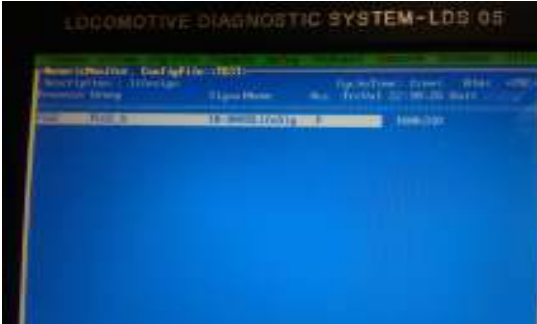
3 SERVICE MANAGEMENT

Please note that the equipment houses dedicated electronic devices with complex interface. The equipment can be opened and serviced only by trained persons. Any attempt by untrained persons to open and service can permanently damage the equipment. Hence, it is strongly advised not to open the warranty seal. Warranty will become null and void if the seal is broken.

4 QUICK START COMMISSIONING

Action		Details
Before power up during downloading or uploading in the Loco	Ensure: <ul style="list-style-type: none"> • Power cable connected between LDS-05 and assistant driver desk D panel port(110V) • External Keyboard connected to LDS-05. • MVB cable (Long) connected between LDS-05 and Signal Converter. • MVB cable(Short) connected between Signal Converter and stub line of the VCU rack(W slot Sub-D 9 female) 	
Power up the System	Ensure: <ul style="list-style-type: none"> • Red LED Glowing • System boots up normally • C:\ appears on the screen 	
Initialization of MVB	To test MVB card initialization, <ul style="list-style-type: none"> • Type C:\mvbinit /check and enter. • "Configuration successful" message should appear. 	
Connection check with VCU rack	To test Connection check, <ul style="list-style-type: none"> • Load Norton Command C:\nc enter • Go to Loco folder then enter, <app_sw> enter, select loco type like Wag-9 or Wap-7 <P5_G9> or <WAP_7> • Select present version folder like <R_3100> or <R_4100> • !DL folder select <connchk.bat> and enter • All the present processor cards of the VCU rack should show OK. 	

LOCOMOTIVE DIAGNOSTIC SYSTEM (LDS-05)

<p>Uploading Fault DDS</p>	<p>To upload DDS,</p> <ul style="list-style-type: none"> • After Connection check, come back and type<C:\MWD> • Go to <KOM Communication with Destination System> and <Transmitting communication data>enter. • All DDS should transfer and "All DDS have been transmitted" message should appear on the screen. 	
<p>Downloading Fault DDS</p>	<p>To download DDS,</p> <ul style="list-style-type: none"> • Go to <AWD Evaluation of Diag.raw data> • Two menu will come Viz.Diagn.data and Condition data. Select Diagn.data and enter. • Select the files which to be seen by pressing spacebar and press F8 for start converting. • Find the fault DDS generated. 	
<p>Signal parameter View</p>	<p>To check signal parameters,</p> <ul style="list-style-type: none"> • Go to <C:\Loco/app_sw/P5_G9 orWAP_7/present version(Ex.R_3100 or R_4100)/MV • Run MicView and Creat a new Config file and save. • Go to Signal Menu, Select the signals and save. • Execute the file and relevant Signal parameter should appear on screen. 	
<p>Downloading on Processors</p>	<p>To download on the Processor cards,</p> <ul style="list-style-type: none"> • Go to <C:\Loco/app_sw/P5_G9 orWAP_7/present version(Ex.R_3100 or R_4100)/DL • Select the processor DL file which to be download (Ex.To download Bus admin of VCU1 select FBV1.DL) and press enter. • If download successful "Download successfully terminated" message should appear on the Screen. • After that restart the Loco and start downloading other processors. 	