



## Lambdatronic LT4

### Quick Start Manual

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# 1 Introduction

This guide is a brief explanation on how to get started with calibrating the LT4 Lambdatronic unit. The following information should be considered supplemental to the LT4 Function Manual as it does not cover all aspects of calibration and use. We highly recommend reading the LT4 Function Manual as this contains much more detailed information about the LT4's functions and settings.

Please follow the included steps carefully and in-sequence.

## 2 Software Installation and Startup

### 2.1 Software Installation

Insert the Lambdatronic LT4 Software Tool USB drive into your computer and start the installer "LT4\_Setup.exe" located in the USB drive directory. The Setup Wizard will guide you through the installation procedure for the ModasSport calibration software and the drivers for the MSA-Box interface device. It is recommended that you use the default settings throughout the installation. After the installation procedure, a shortcut to the LT4 Toolbox will be created on your desktop.

### 2.2 Project Folder Installation

A project folder for LT4 setup and calibration has been included on the Lambdatronic LT4 Software Tool USB drive. This folder, named "LT4", can be found within the folder "ModasSport\_examples" in the USB drive's main directory. The LT4 folder should be copied to ModasSport's working directory (typically C:\Bosch\ModasSport).

### 2.3 Setup in ModasSport

Upon opening ModasSport, the first window to appear will be the Project Manager page. Highlight the item "Bosch Motorsport Projects" in the Project List and then select the button "Add existing" in the "Project" group:

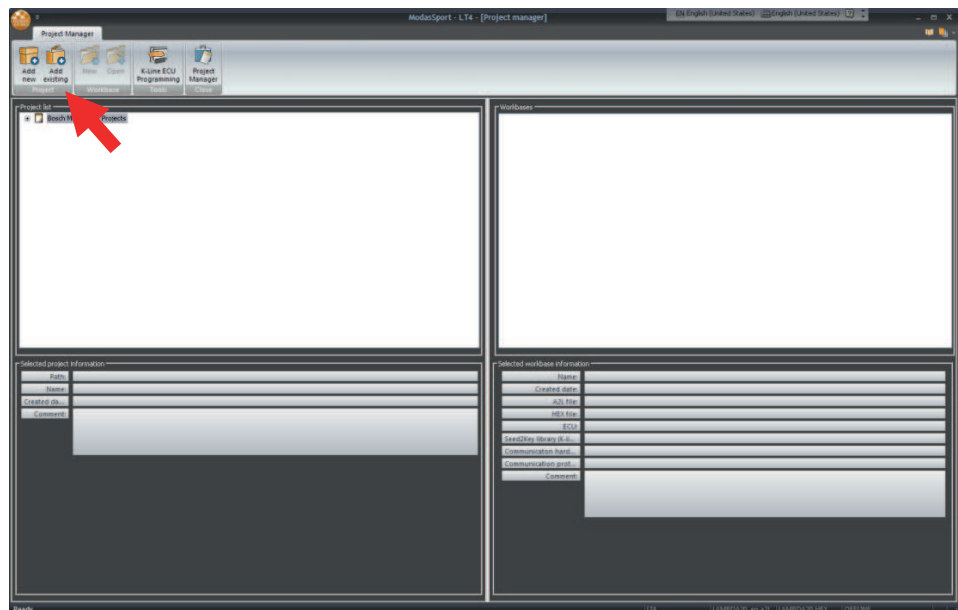


Illustration 1: ModasSport project manager page

Navigate to the working directory for ModasSport as per step 2.2, open the "LT4" folder, and double-click the file named "LT4.mxprj".

The Project Manager page will now list the project "LT4" with a workbase "LT4\_1J".

## 3 Calibration and Live Data Viewing/Recording

### 3.1 Connecting to your computer

Before beginning calibration or data viewing, insure that the LT4 is connected to your computer through the MSA-Box and is powered.

Double-clicking the new workbase "LT4\_1J" will open the project workfolder and begin the connection process to the LT4. Once connected, the status indicator at the top left of the ModasSport window will turn green.

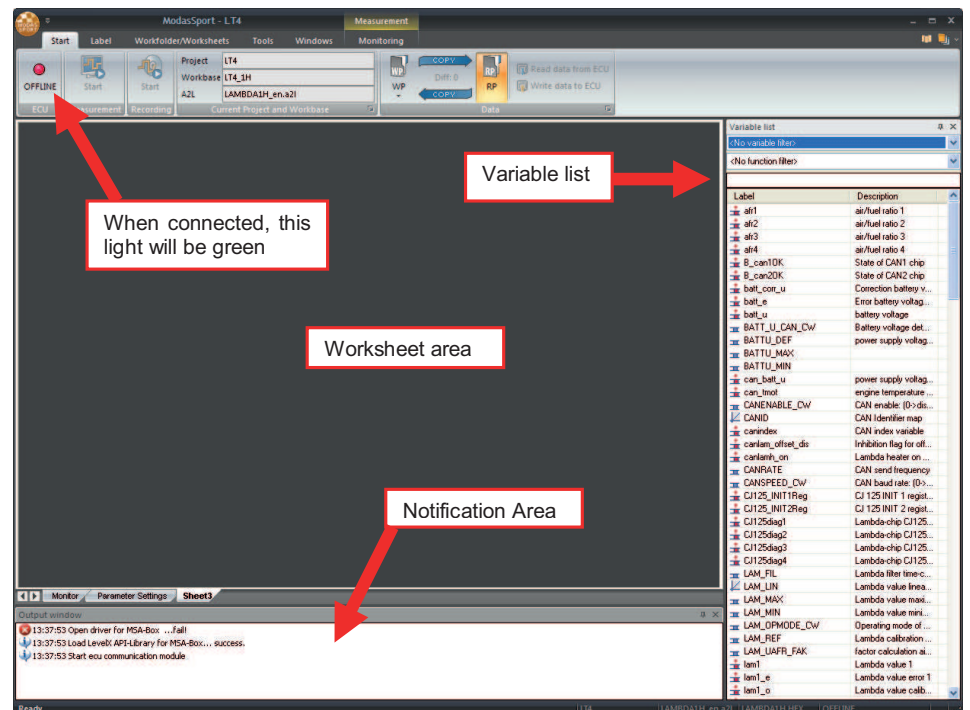
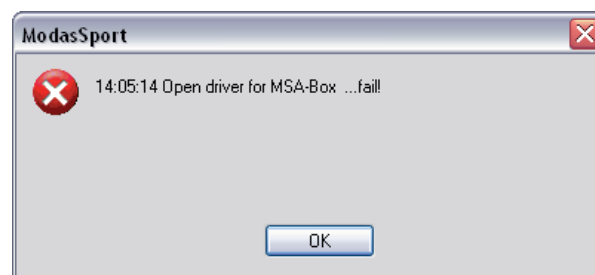


Illustration 2: ModasSport workfolder page

If the connection attempt to the LT4 fails, an error window will be shown:



In this event, check the notification area at the bottom of the window for further information regarding the error.

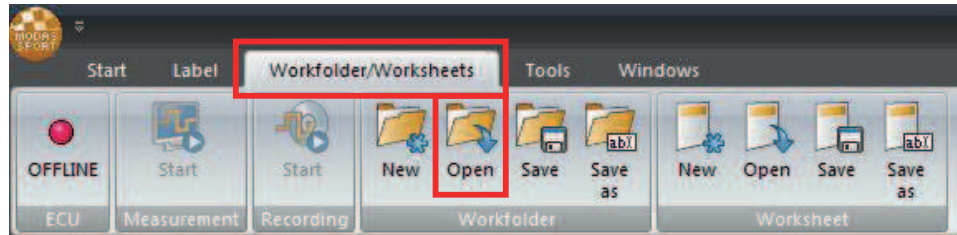
### 3.2 Creating Worksheets

Opening the workbase in step 4.1 creates an empty workfolder. A custom worksheet for calibration and data viewing/measurement can be made by clicking and dragging variables from the variable list to the worksheet area. Certain data types can also be viewed in

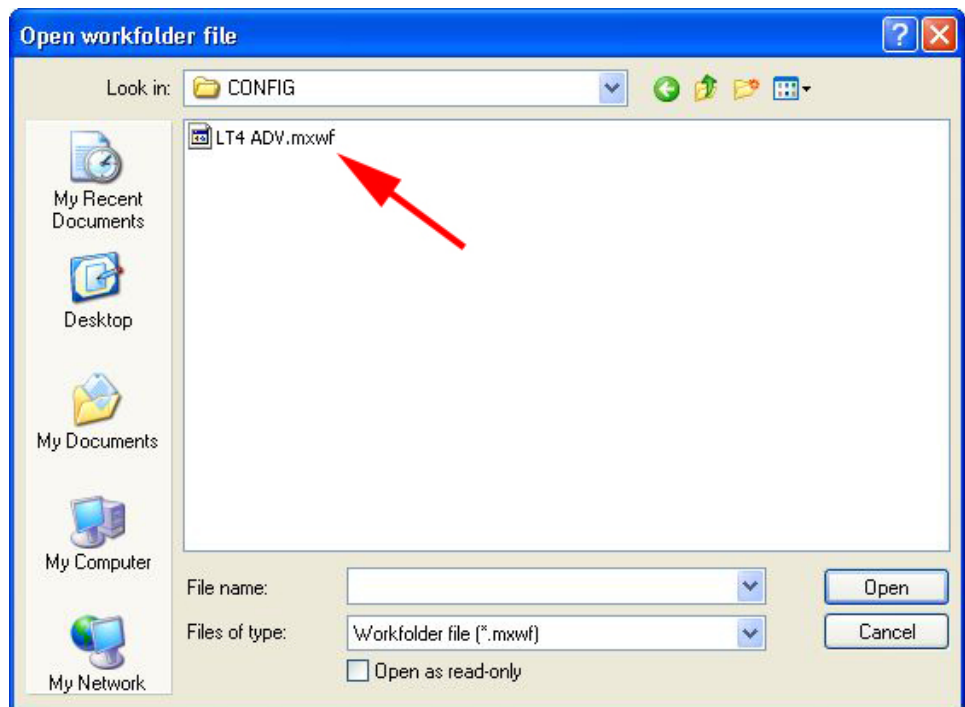
an oscilloscope; this can be done by right-clicking on the desired variable and selecting the option "New oscilloscope". If you wish to create multiple sheets within the workfolder, right-click in the worksheet tab area and select "New".

### 3.2.1 Loading the Pre-Made Workfolder

Included in the LT4 project folder is a workfolder file with pre-made worksheets. These have been configured with the most important variables to enable quick calibration and data viewing. To load this workfolder, select the tab "Workfolder/Worksheets" at the top of the ModasSport window and select the "Open" button in the "Workfolder" section of the ribbon:



The "Open workfolder file" dialog should automatically open the folder "CONFIG" within the LT4 project folder. If this does not happen, navigate to your LT4 project folder directly and open the folder "CONFIG". Once here, select the file "LT4.mxwf":



The worksheet area should now be populated and two worksheet tabs should appear in the lower left corner of the area. The sheet "Monitor" will allow you to monitor sensor status, sensor readings, and LT4 communication. The sheet "Parameter Settings" will allow you to perform calibration and device setup tasks.

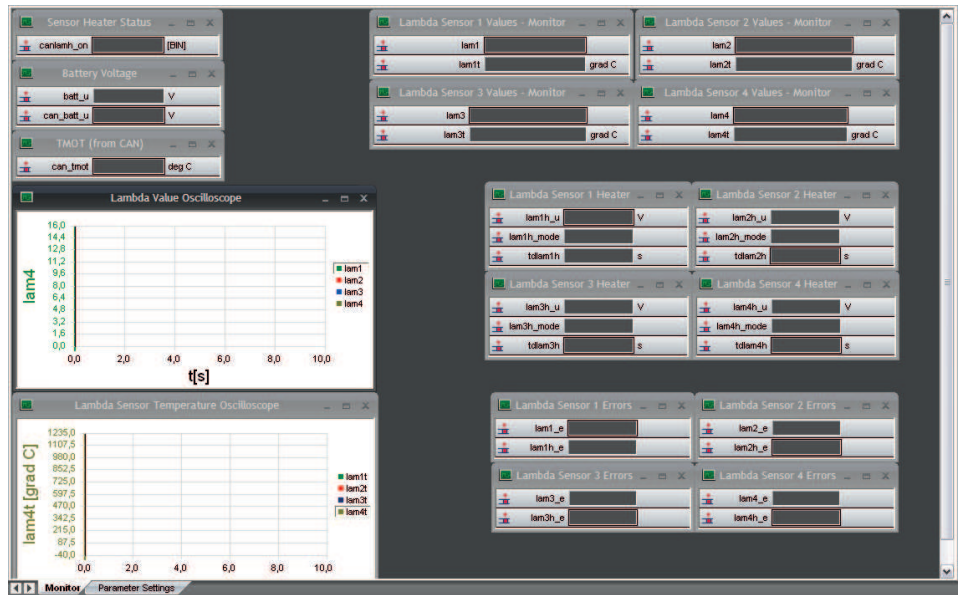


Illustration 3: „Monitor“ worksheet

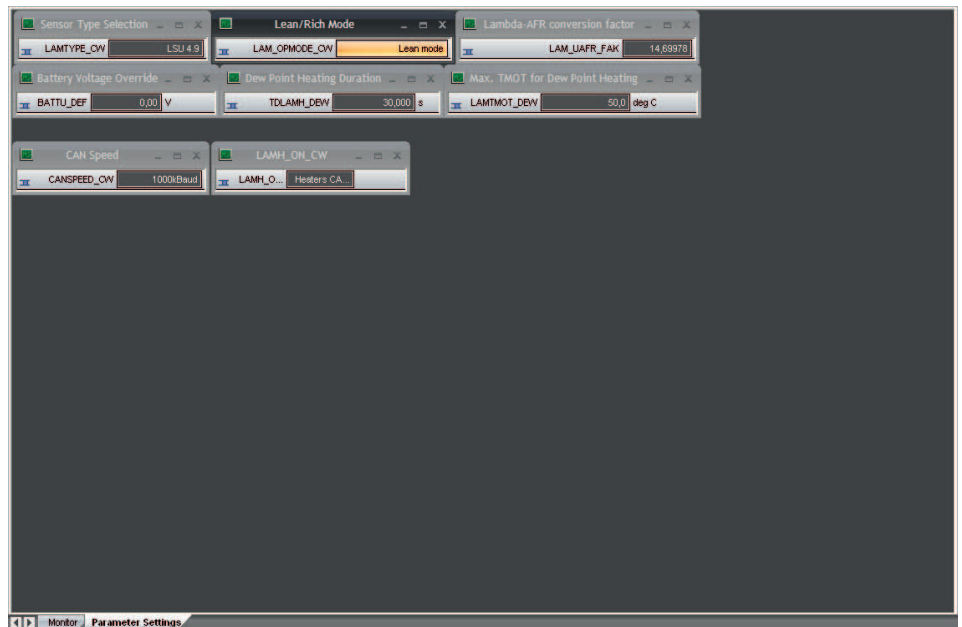
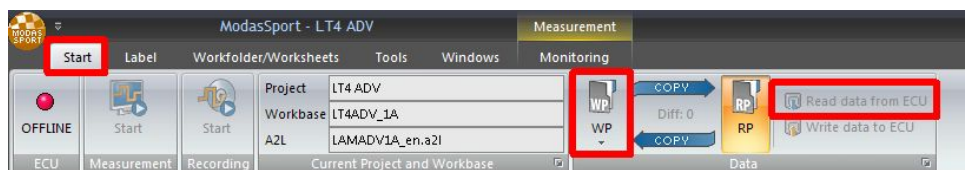


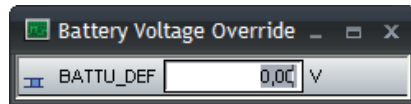
Illustration 4: „Parameter Settings“ worksheet

### 3.3 Changing Calibration Values

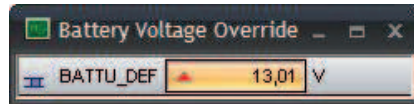
In order to change calibration values in the “Parameter Settings” worksheet, the working page must be loaded. To do this, select the “Start” tab at the top of the window and select the button “Read data from ECU” in the ribbon. Once data has been read, the working page can be loaded by selecting the button “WP”:



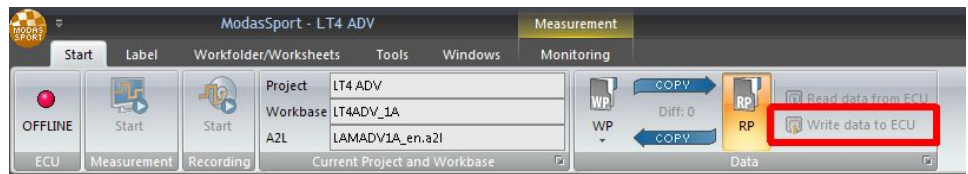
To change a value, double-click the value, type in the desired new value, and then hit the Enter or Return key. Some variables can be changed through drop-down boxes as well.



Once a variable is changed, an arrow will appear next to the value to indicate the direction in which the variable was changed.

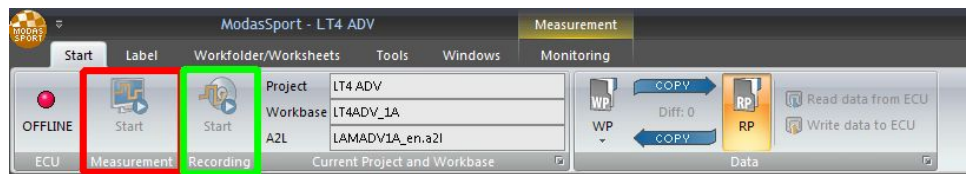


To write new values to the ECU, select the button "Write data to ECU" from the ribbon under the "Start" tab:



### 3.4 Live Viewing of Measurements

To start live viewing, select the button "Start" in the "Measurement" section of the ribbon under the "Start" tab (red box in the figure below):



If you are using the pre-made workfolder and worksheets, measurements are shown in the "Monitor" worksheet.

To record data, select the "Start" button in the "Recording" section of the ribbon under the "Start" tab (green box in the figure above). Selecting this brings up a prompt where a save location can be specified. To stop the recording, click the "Start" button in the "Recording" section again. Recordings can be opened in Bosch Motorsport's WinDarab analysis software.



## 4 Firmware Updates

Should a firmware update be required for your LT4, you will receive files with the suffixes “.A2L” and “.HEX”. The “.HEX” file contains the LT4 firmware while the “.A2L” file is a variable description file. These files should be copied to the “CONFIG” folder in the LT4 project folder (typically C:\Bosch\ModasSport\LT4\CONFIG).

In ModasSport, click the circular menu button in the top left corner of the window and select the option “Flash Tool”:

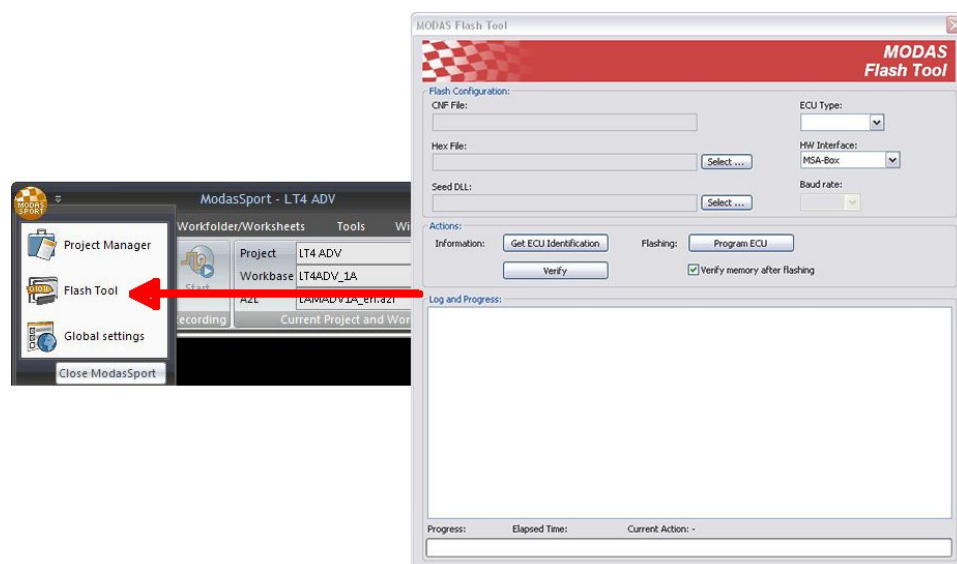


Illustration 5: Flash Tool selection and Modas Flash Tool window

The Modas Flash Tool window will appear. The following points describe the actions to be taken for each parameter in the flash tool:

- HW Interface: MSA-Box II
- Hex File: Click the “Select...” button and navigate to the “.HEX” file which was moved into the “CONFIG” folder of the LT4 project folder
- Seed DLL: Click the “Select...” button to locate the Seed DLL file. This is also located in the “CONFIG” folder. Usually, this field will populate automatically as long as the Seed DLL file is in the same directory as the “.HEX” file.

Once these settings have been set, click the “Program ECU” button.



### NOTICE

#### Do not interrupt this procedure

It is very important that the power and communication to the LT4 is not interrupted during this time. Do not disconnect the MSA-Box from the computer or from LT4 and do not shut off power to the LT4.

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