



The screenshot displays the ModasSport - MS 3 Sport software interface. The main window shows several parameter windows and a variable list on the right.

**Parameter Windows:**

- CYLCNUMBER:** CYLCNUMBER = 2
- CRANKWHEEL36:** CRANKWHEEL36 = 1
- TDC's:** TDCCYL\_1 = 78.00, TDCCYL\_2 = 438.00, TDCCYL\_3 = 0.00, TDCCYL\_4 = 0.00, TDCCYL\_5 = 0.00, TDCCYL\_6 = 0.00
- MAX Engine Revolution:** REV\_MAX = 12000.00 1/min
- Injector flow rate:** QSTATEV = 400.000 g/min
- Engine Setup OK ?** engsetupOK\_b
- CYLBANK\_CW:** CYLBAN... = 170.00

**Variable list (TDWELLBATTREV):**

Label	Description
TDCCYL_1	Winkel OT Zylinder 1
TDCCYL_2	Winkel OT Zylinder 2
TDCCYL_3	Winkel OT Zylinder 3
TDCCYL_4	Winkel OT Zylinder 4
TDCCYL_5	Winkel OT Zylinder 5
TDCCYL_6	Winkel OT Zylinder 6
tdwell	Zündkreisl. Schliessz...
TDWELLBATTREV	Schliesszeit über B...
TDWELLMAX_OFF	Schliesszeitoffset fü...
TEETHDEBOUNCE1	Zahnentprellung l...
TEETHDEBOUNCE2	Zahnentprellung l...
tex	Auslassgasetemper...
tex_2	Auslassgasetemper...
tex_2e	Auslassgasetemper...
tex_2ec	Auslassgasetemper...
tex_2ee	Auslassgasetemper...
TEX_ZEM	Auslassgasetemperat...
tex_2u	Auslassgasetemper...
TEX_2UMN	Auslassgasetemper...
TEX_2UMX	Auslassgasetemper...
TEX_DEF	Auslassgasetemper...
tex_e	Auslassgasetemper...
tex_ec	Auslassgasetemper...
tex_ee	Auslassgasetemper...
TEX_EM	Auslassgasetemperat...
TEX_LIN	Auslassgasetemper...
tex_u	Auslassgasetemper...
TEX_UMN	Auslassgasetemper...
TEX_UMX	Auslassgasetemper...
texmax	Auslassgasetemper...
texmax_2	Auslassgasetemper...
texmin	Auslassgasetemper...
texmin_2	Auslassgasetemper...
TEXMOD_CW	Codewort Abgase...
texmodel	Abgastemperatur a...
TEXREVATHMOD	Kennfeld Abgastem...
TEXREVATHMOD_FIL	Zeitkonstante für A...
tfuel	Kraftstofftemperatur

**Log-Windows:**

- 11:21:32 Trying to connect to ECU (CCP)...
- 11:21:32 Open driver for MSA-Box... success
- 11:21:32 Load LevelX API-Library for MSA-Box... success

## Modas Sport

## Quick Start Manual

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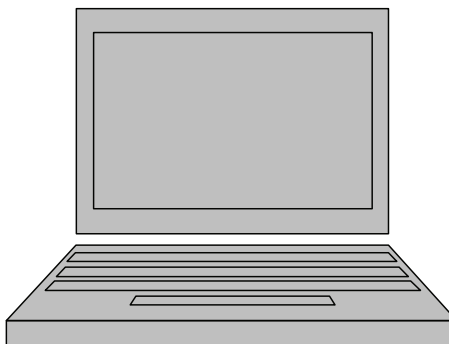
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# 1 Before you begin

The Modas Sport operation and calibrating software allows users to access the control variables and engine maps on Bosch Motorsport control units and then make changes to them. It can also record measurements.

Modas Sport comes on the installation CD supplied with the control unit. Alternatively, you can download the most up-to-date version from our website [www.bosch-motorsport.com](http://www.bosch-motorsport.com).

To work with Modas Sport, you need a computer, preferably a laptop so you can be more flexible.



The computer must have a USB port to connect the MSA Box II. The MSA Box II is the communication link between the computer and the diagnosis connector plug in the vehicle's cable tree.



Before using the MSA Box II, your computer must have the relevant drivers installed.

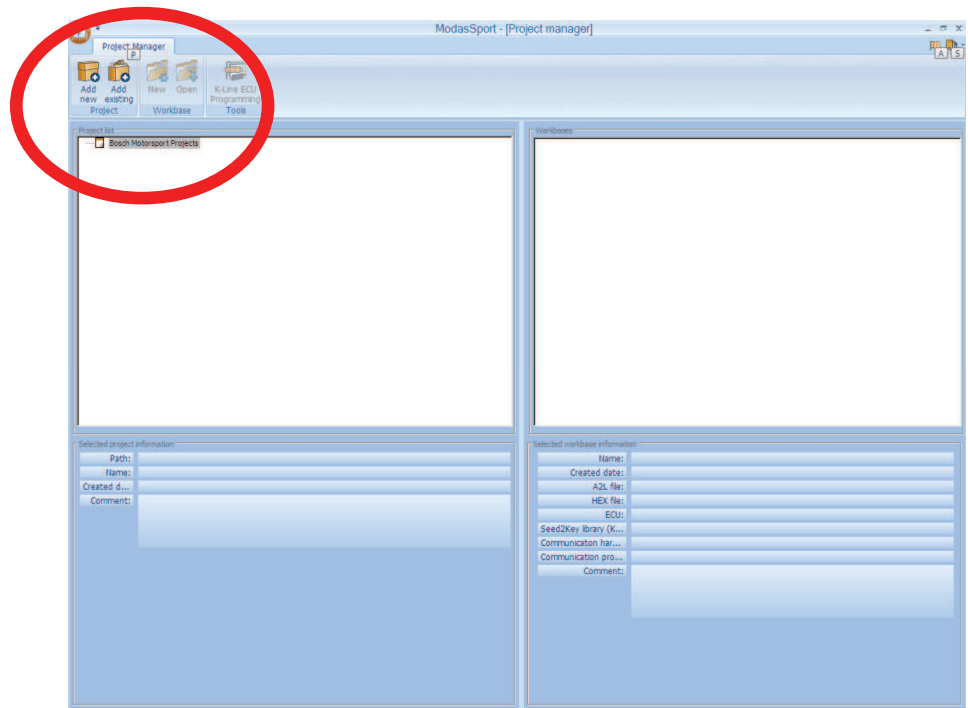
Before installing the drivers:

- Disconnect the MSA Box II from your computer.
- Install the driver.

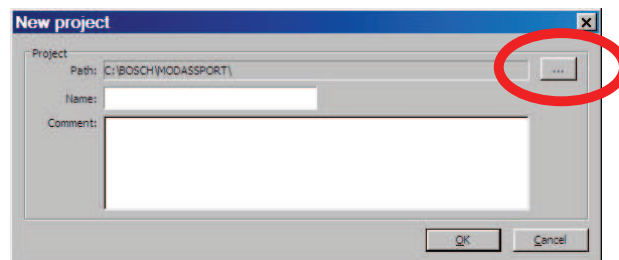
You can download the drivers for free from our website [www.bosch-motorsport.com](http://www.bosch-motorsport.com).

## 2 Creating a workbase

Install Modas Sport on your computer. You can find the program on the installation CD or download it from our website. Open Modas Sport. Click the Bosch Motorsport Projects folder then Add new to create a new project. See the screenshot below:

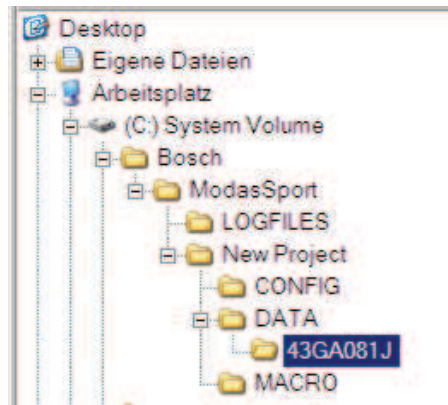


Select a target folder to store your project files. You can change the default path C:\BOSCH\MODASSPORT\ by clicking the dots. Under Name enter the project name. See the screenshot below:

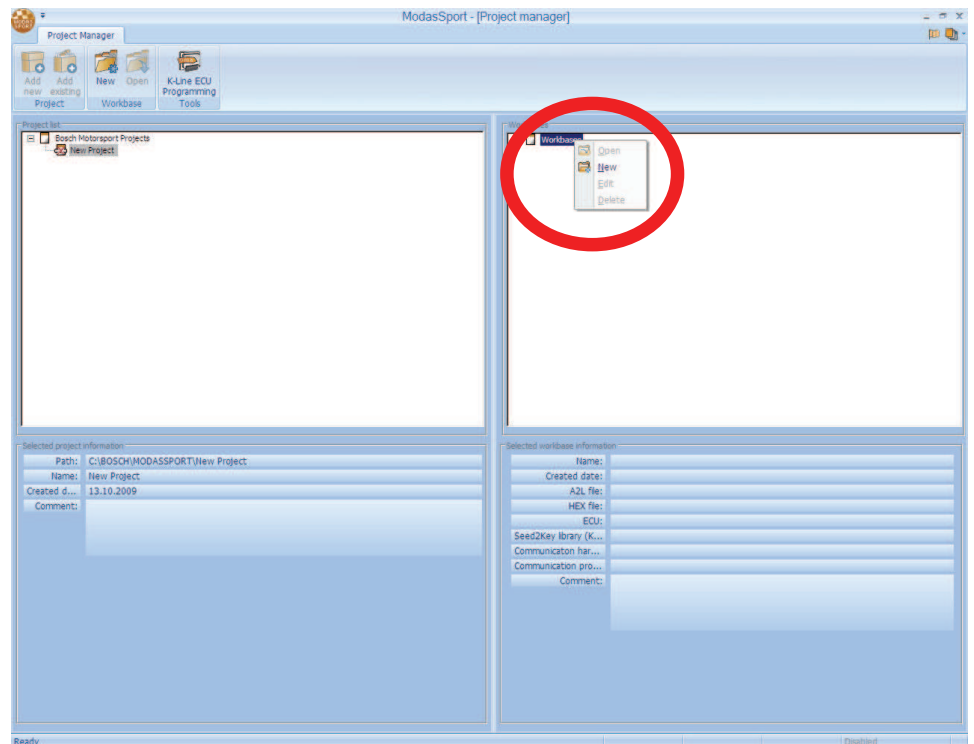


Click OK. Modas Sport creates a target directory in the target folder you selected. This directory has the same name as the new project and contains files and subfolders, including the subfolders DATA and CONFIG.

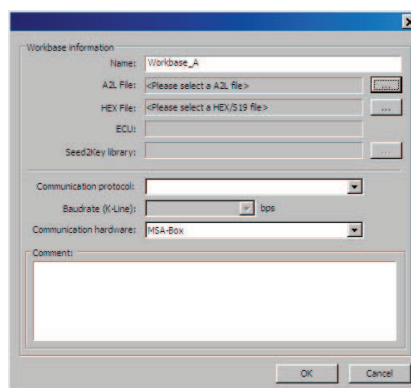
Open the DATA folder and save the ECU program of your control unit. The screenshot below shows the ECU program 43GA081J as an example. You can obtain the ECU program from Bosch Motorsport.



Go back to Modas Sport. To create a new workbase, right-click the Workbase folder and click New.

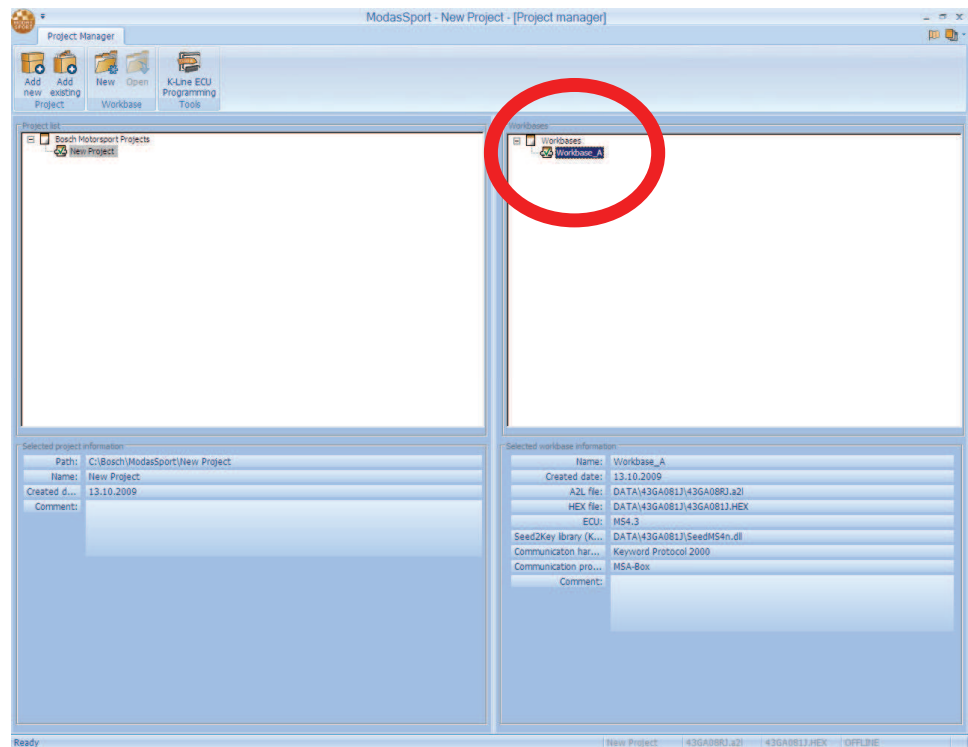


In the window that appears, type in the name of the workbase. The screenshot below shows Workbase\_A as an example. Select an A2L file. There are A2L files in your ECU program folder.

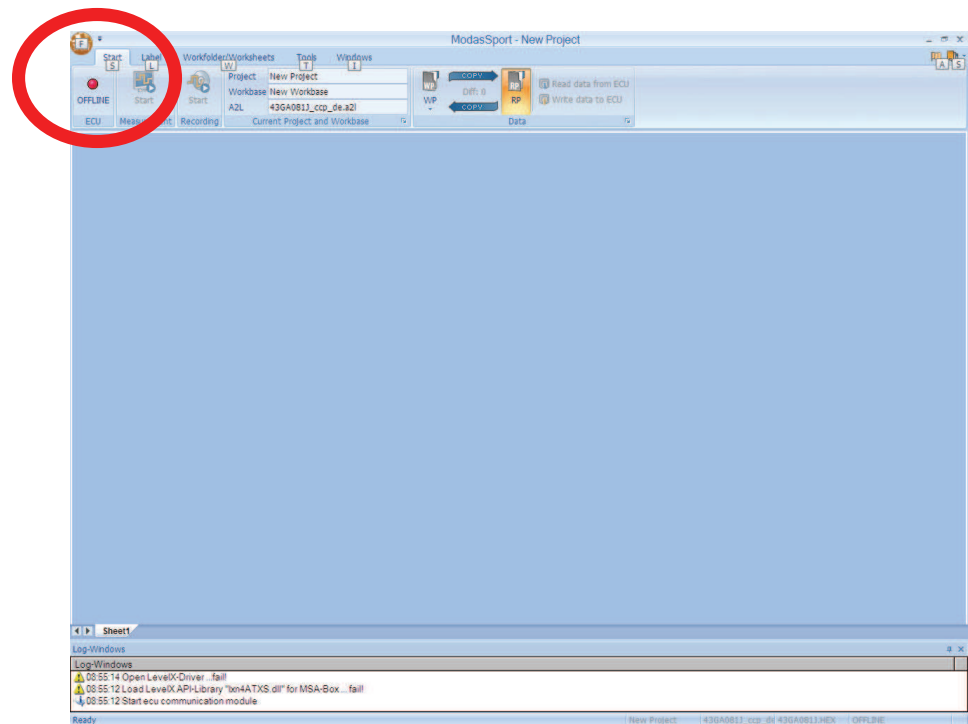


Check the other default entries such as Communication protocol and Baudrate and adjust them if necessary. Confirm your settings by clicking OK. Modas Sport now creates a sub-folder with the name you just entered, in this example, Workbase\_A.

Double-click the Workbase\_A folder. See the screenshot below. Modas Sport now tries to establish a connection to the control unit.



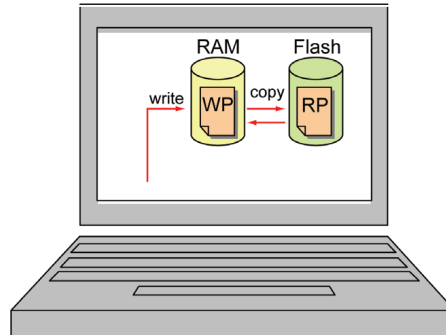
To do this, Modas Sport switches to measuring and calibration mode for the new workbase. The ECU status light is green if connection to the control unit has been established. The ECU status light is red if connection to the control unit has failed. See the screenshot below.



### 3 Connecting and synchronizing

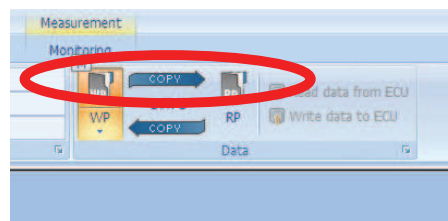
With Modas Sport you can open, edit and save data on your computer. You can upload this edited data to the control unit at a later date.

Modas Sport has two data memories: a temporary RAM memory, to which the user can write directly, and a non-temporary, indirectly programmable Flash memory. Each data memory contains one dataset: the RAM dataset is called Work page WP; the Flash memory dataset is called Reference page RP. You can only enter and change datasets on the RAM memory workpage WP. The only way to access the Flash memory reference page RP is indirectly under your WP access. Only complete datasets can be copied from the WP.

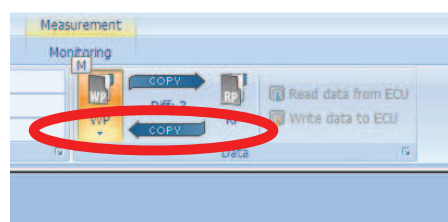


Changes to control unit settings on your computer must be made in the following order:

1. Open WP.
2. Change parameters.
3. Copy WP to RP. See the screenshot below.



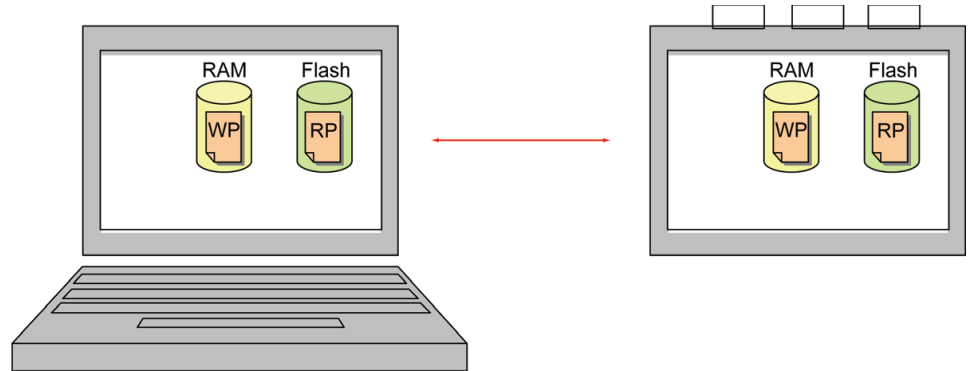
If you do not want to save the edited dataset, you can reset to the original ECU program before quitting Modas Sport, by copying the reference page RP back to the workpage WP. To do this, click COPY. See the screenshot below:



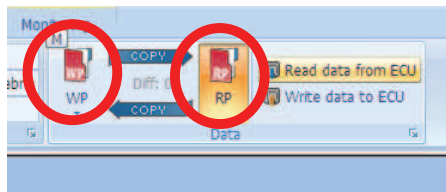
## 4 Calibration with control unit

With Modas Sport you can calibrate the ECU program directly, even when the ECU is working.

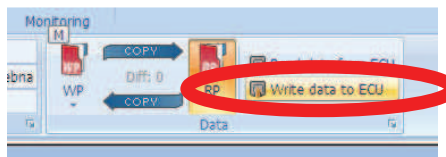
Connect your computer with the ECU via MSA Box and switch on the ignition. As on your computer there are also two different ECU programs on the ECU: the Work page WP and the Reference page RP. Modas Sport compares the datasets from the computer and from the control unit every time the connection between the two is made.



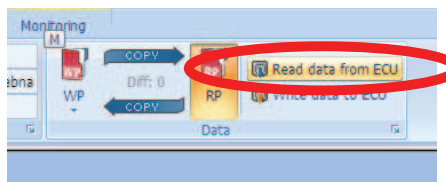
If Modas Sport finds discrepancies between the two datasets, the relevant icon buttons are displayed in red. See the screenshot below:



You now have the choice of working with the computer dataset or the control unit dataset. If you have amended data on the computer, you will want to continue working on this updated dataset. In this case, you can upload this updated dataset to the control unit by clicking Write data to ECU. See the screenshot below:



If you use Modas Sport regularly, you will often find that you want to continue working on the control unit dataset. In this case, you can read out the control unit dataset and edit it on the computer. To do this, click Read data from ECU. See the screenshot below:



### NOTICE

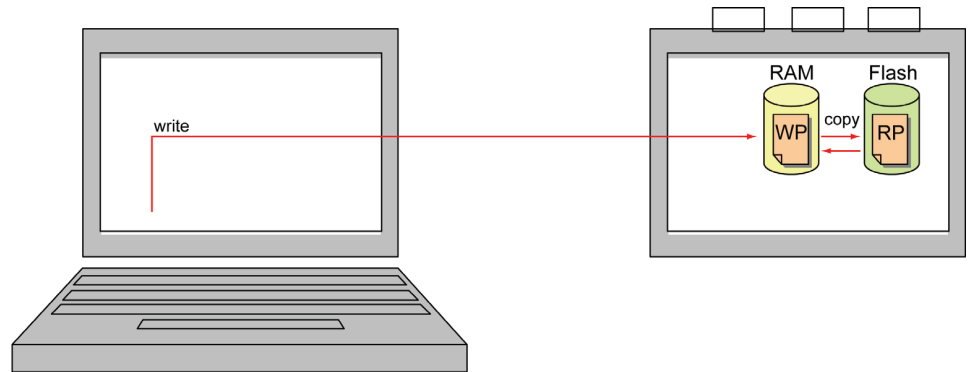
#### Choose the dataset.

Modas Sport compares the datasets from the computer and from the control unit every time the connection between the two is made. If they differ, decide which dataset you want to continue working on.



## 5 Calibration with engine running

Once you have decided which dataset to work with, the computer and control unit datasets are synchronized. You can handle the now identical files as one single dataset. You can run the engine with the workpage or reference page dataset. With the control unit connected and the motor running, you can now make the changes to the workpage. On the test bench, check how the engine reacts to the parameter changes. Switching from WP to RP and back again lets you compare two datasets and carry out individual changes.



### NOTICE

#### Synchronize computer and control unit datasets.

Synchronize computer and control unit datasets when the two are connected. You can change parameters when the engine is running.

Use the F2 key to show/hide the calibration values and measurements. If not already available, drag and drop the calibration values and measurements into the reading window. See the diagram below:

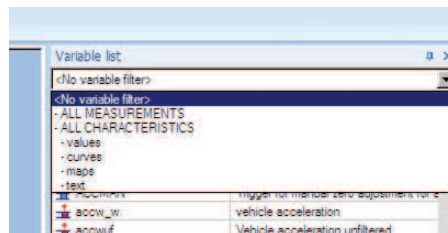
## 6 Change options

After entering your data offline on the computer and online on the control unit, you can start finetuning (applying) with the engine running. You can change your calibration values on the workpage WP. Press the F2 key to show/hide the list of variables.

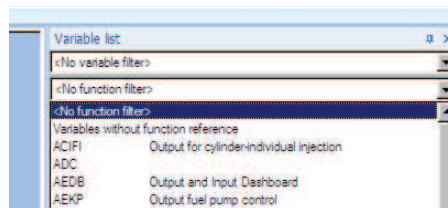
You can filter the lists by measurement (- ALL MEASUREMENTS) and tuning values (- ALL CHARACTERISTICS).

You can filter the tuning values again, by:

- \* Single values (- values)
- \* Curves (- curves)
- \* Engine maps (- maps)
- \* Text fields (- text)



You can also filter by function.

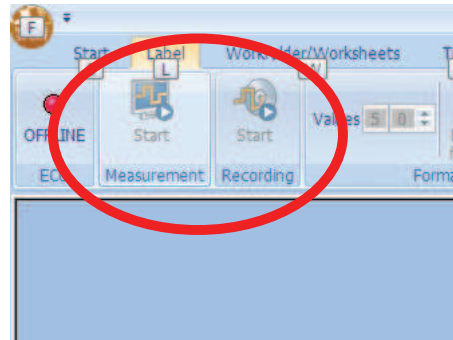


The functions in the function filter go by the same names and categories as described in the functional framework. When you filter by function, the screen shows only those measurements and calibration values that are required in or influence the function.

You can also obtain information on the variables by right-clicking the variables in the label list. In the measurement window, calibration values on the workpage are shown in white (only these are editable) and measurements are shown in grey. This allows you to differentiate between the two.

## 7 Measurements

Start and stop online measurements by clicking "Measurement". If the computer is connected to the control unit, the oscilloscope and measurement window display the current values. Click "Record" to create measurement files that you can then open and analyze with WinDarab or WinDarab-Free. The measurement file stores all the values shown in the worksheet.



## 8 Shortcuts

Table View	Select all	Ctrl + A
	Switch to Binary format	Ctrl + B
	Switch to Hexadec. format	Ctrl + H
	Switch to Decimal format	Ctrl + D
	Switch to Physical format	Ctrl + P
	Tog. Hex/Dec/Bin/Phys format	Ctrl + F
	Variable Information	Ctrl + I
	Increment selected values	M
	Decrement selected values	N
	Divide selected values	/
	Multiply selected values	*
	Add offset to selected values	+
	Set selected values	=
	Restore selected values	Ctrl + R
	Set working point values	Ctrl + Return
Remove label from view	Delete	
Measurement View	Select all	Ctrl + A
	Switch to Binary format	Ctrl + B
	Switch to Hexadec. format	Ctrl + H
	Switch to Decimal format	Ctrl + D
	Switch to Physical format	Ctrl + P
	Tog. Hex/Dec/Bin/Phys format	Ctrl + F
	Variable Information	Ctrl + I
	Increment selected values	M
	Decrement selected values	N
	Divide selected values	\
	Multiply selected values	*
	Add offset to selected values	+
	Set selected values	=
	Restore selected values	Ctrl + R
	Remove label from view	Delete
Select previous label	Up	
Select next label	Down	
Variable list	Variable list show/hide	F2
	Add label to worksheet	Return
	Refresh list	F5
Application	Variable list show/hide	F2
	Log-Windows toggle	F3

Extended Memory	F6
Switch to Project-Manager	F7
Toggle WP <-> RP	F8
View Shortcuts of Ribbon bar	F10
Start/Stop measurement	F9
Start/Stop recording	Ctrl + F9
Save as work folder	F12





**Bosch Engineering GmbH**

Motorsport

Robert-Bosch-Allee 1

74232 Abstatt

**Germany**

[www.bosch-motorsport.com](http://www.bosch-motorsport.com)