



## H6 Motor wizard

## FAQ No.0004

Part	Version	Revision	Date	Status
en	6.2.3.0	001	2019-01-01	Released

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# FAQ COMBIVIS



## Introduction

COMBIVIS 6 contains several wizards, which make the parameterization of KEB-devices much easier. One of these wizards is the Motor-Wizard for COMBIVERT H6. The usage of this wizard will be described in this document.

## Getting started

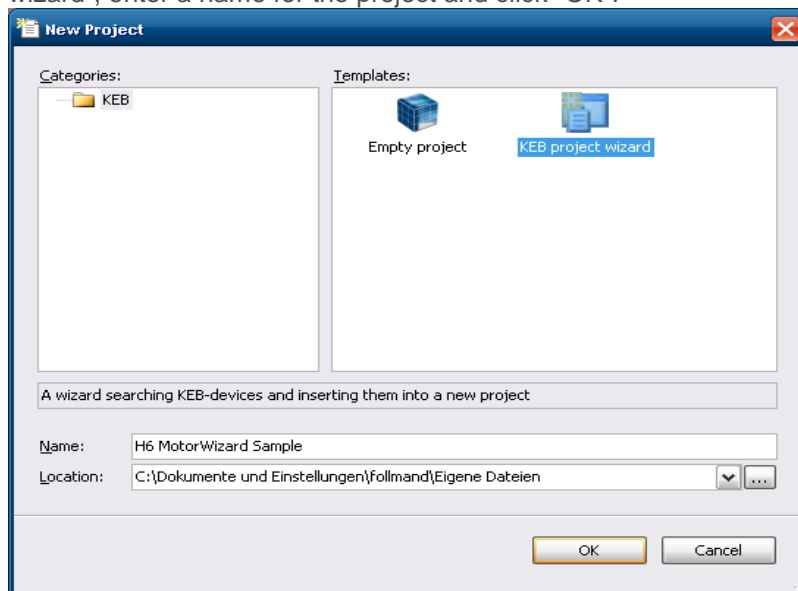
How do you get the wizard started?

At first you will need a COMBIVIS 6 project with a H6 Drive Unit in it.

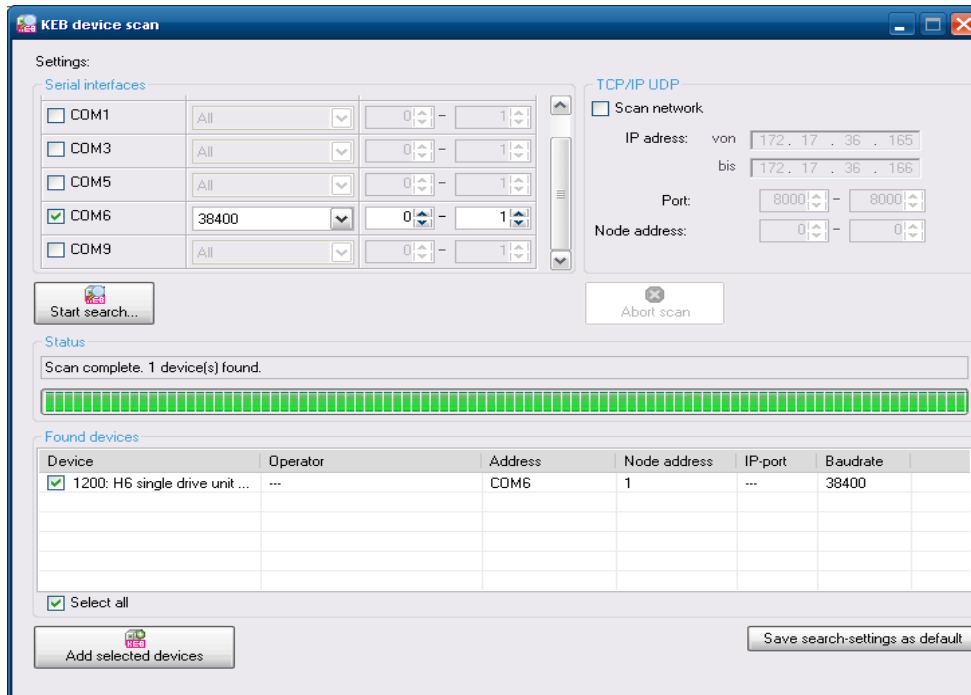
To achieve this, you may either create a new project with the KEB-project-wizard, which performs an automatic device-scan or create an empty project and the device manually.

## Project wizard

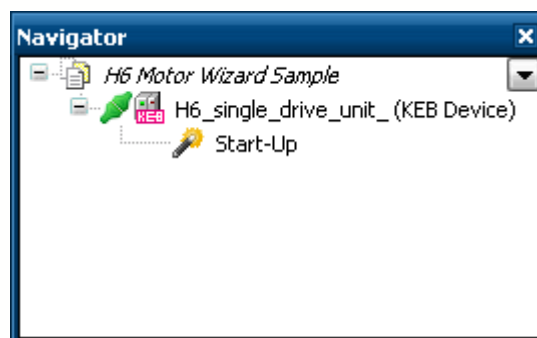
To create a new project with the project-wizard, select “New project” from the menu, “KEB project wizard”, enter a name for the project and click “OK”.



Now the device-scan starts with the settings, which are pre-configured in the options.

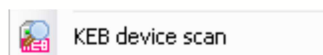


You may also interrupt the device-scan and enter new search-settings during the scan. After the online H6 device was found, select the devices you want to have in the project and click “Add selected devices” (this happens automatically, if you did not interrupt the device-scan before). Now the project is created and the H6 device is available in the device-tree. The green connector indicates, that the device is online. The H6 drive-unit also has a “Start-Up”-wizard below itself in the device-tree:



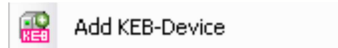
## Add device manually

To add the device manually, select “New project” from the menu, “Empty project”, add a name for the project and click “OK. Of course you can also open an already existing project. Now you can either perform a device-scan just like in chapter 2.1, or add a device manually. To perform a device-scan select “KEB device-scan” from the context-menu of the device-tree or in the toolbar:



To find the device, configure the scanner and perform as described in chapter 2.1.

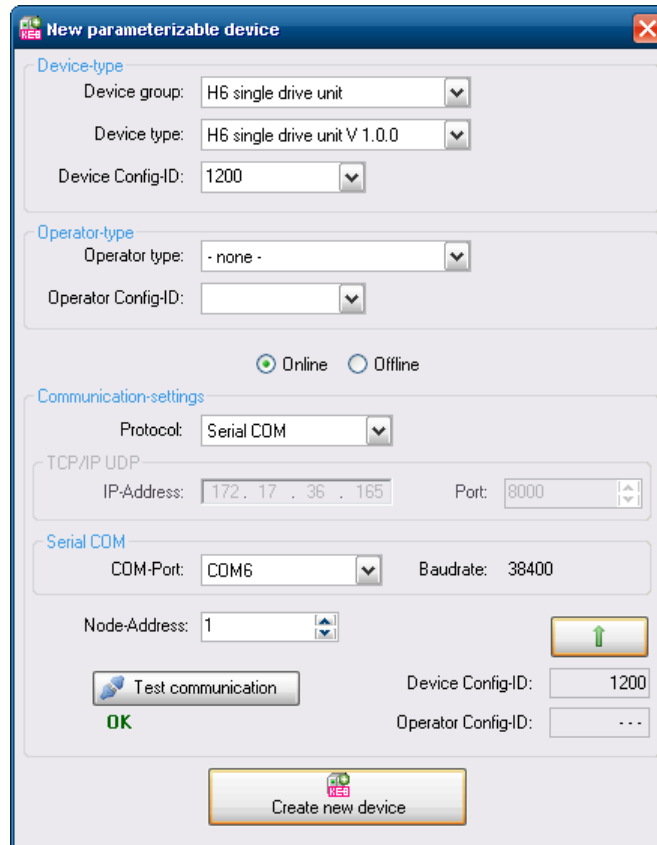
To add an H6 drive unit manually, select “Add KEB-Device” from the context-menu of the device-tree or in the toolbar:



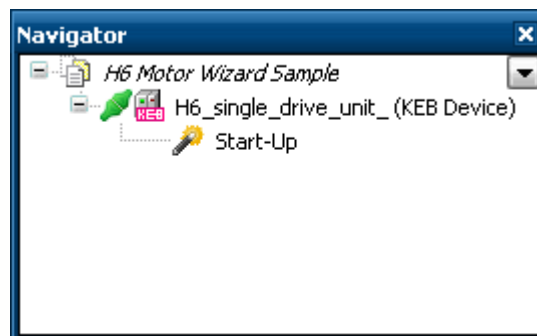
Now a dialogue opens, which helps you to add a parameterizable KEB-Device to the project:



In this dialogue you can select the type of the device you want to add to the project. If you want to add a device, which is already connected to your computer, select “Online”, enter the communication parameters and click “Test communication” to check if the device is available.

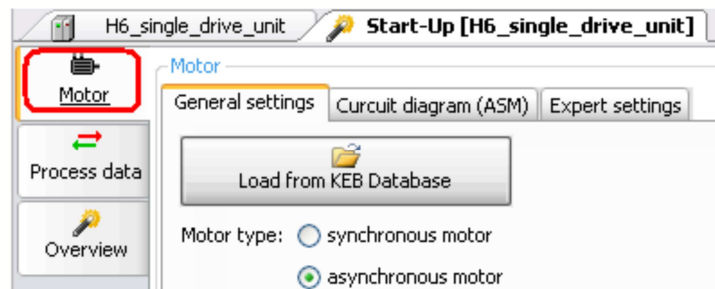


After you did the correct settings, click “Create new device” and assign a name for the device. Now the device is added to the project-tree. If you used the dialogue in “Online”-mode, the green connector indicates that the device is online. The H6 drive-unit also has a so-called “start-up” wizard below itself in the device-tree.



## Motor-Configuration

To open the motor-wizard, double click on the “Start-Up”-object in the project-tree. An editor with several wizards appears. To access a certain wizard, click on the corresponding icon.



## Configuration for KEB-Motor

If you are using a motor from KEB, you can do the configuration the easiest way by just selecting your motor from the KEB database.

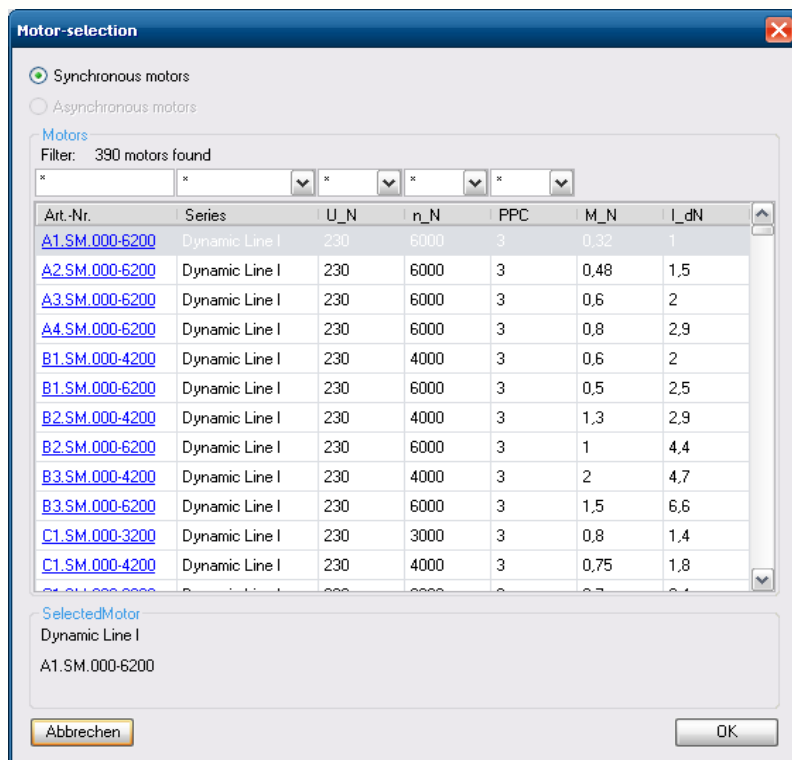
Use the



Or



to open the KEB database:



In the database-dialogue you can select your motor from a list of available motors. Double click on a motor or select it and click “OK” to confirm the selection. After a motor was selected, the relevant data of the motor is automatically inserted in the display of the wizard.

## Configuration for arbitrary motor

### Type plate

If you are using a motor, which is not available in the database, you can enter the motor-data manually. On the first page of the wizard you can select the type of the motor (synchronous / asynchronous) and enter the type-plate data.



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Motor type:  synchronous motor  
 asynchronous motor

Type plate (SM)

<b>KEB</b>	KARL E. BRINKMANN GmbH		
	32677 BARNTRUP		
Art.Nr.: unknown (userdefined data)			
$M_{dN}$	0,80	Nm	$I_{dN}$ 2,9 A $n_N$ 6000 $\text{min}^{-1}$
$f_N$	300	Hz	$\hat{k}_e$ 28,30 $\text{V}/1000\text{min}^{-1}$
			<b>CE</b> Made in Germany

Motor type:  synchronous motor  
 asynchronous motor

Type plate (ASM)

<b>KEB</b>	KARL E. BRINKMANN GmbH		
	32677 Barnttrup		
			Made in Germany
Art.-Nr.: unknown (userdefined data)			<b>CE</b>
$P$	0,50	kW	
$\cos \varphi$	0,80		$I_N$ 2,9 A (Y/Δ)
$n_N$	6000	1/min	
$f_N$	300	Hz	

## ECD

On the second page the Equivalent Circuit Diagram for the selected motor-type is displayed. Use this page to enter detailed data from the motor-data-sheet:

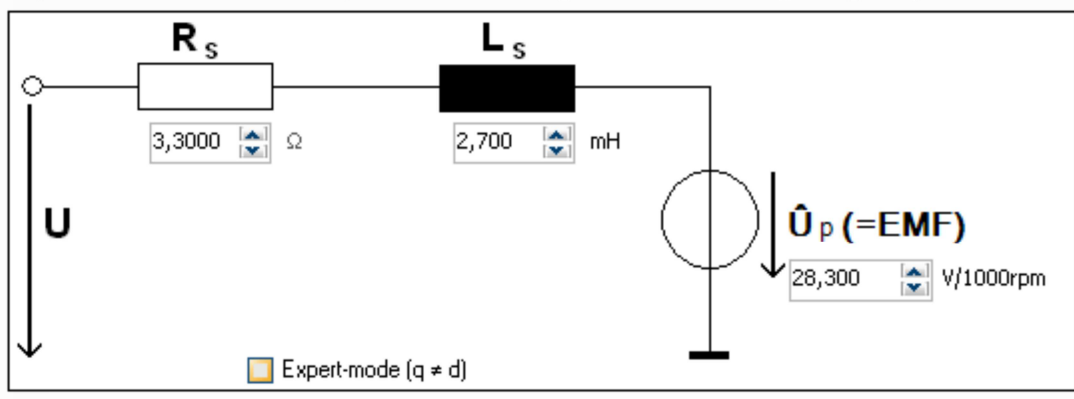
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**⚠ Please note: The entered values are NOT equal to the values that are written into the inverter. The inverter-values will be calculated from the entered values.**

### Equivalent circuit diagram (synchronous motor)

**Important: The values in the equivalent circuit diagram are line-values (phase-ground)!**

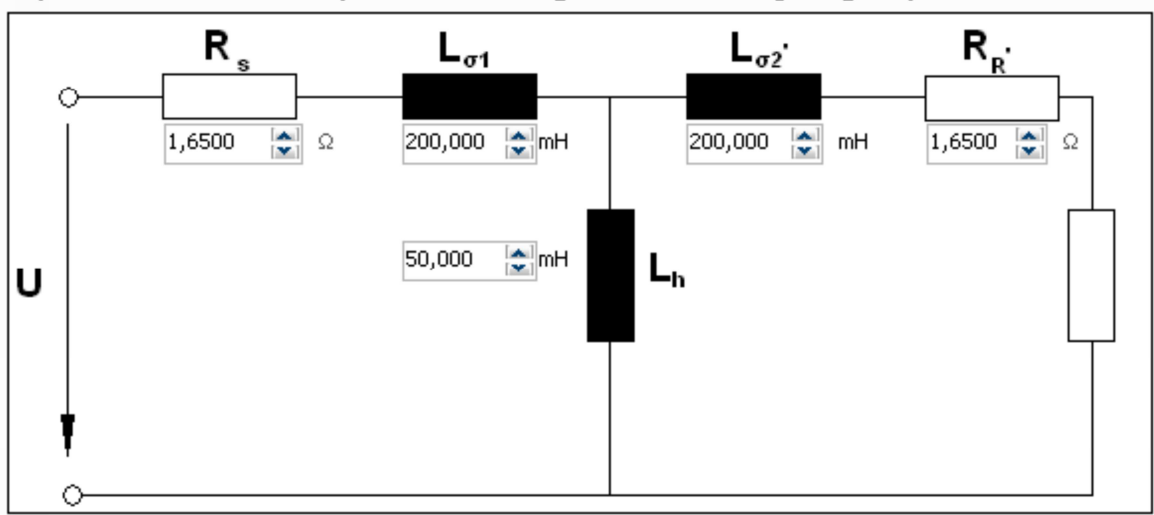


**⚠ Please note: The entered values are NOT equal to the values that are written into the inverter. The inverter-values will be calculated from the entered values.**

- Input-Mode:  Y (Star)  
 D (Delta)  
 U-V (Phase)

### Equivalent circuit diagram (asynchronous motor)

**Important: The values in the equivalent circuit diagram are line-values (phase-ground)!**



**Caution!** If you are configuring an asynchronous motor, please pay attention to the notes, that are displayed in the wizard, regarding the input-mode. (E.g. if the data-sheet-values are listed for Y(Star)-coupling, this input-mode should also be selected in the wizard).  
 The values in the inverter are always U-V (phase) - values. This means, only if the 3<sup>rd</sup> option is selected as input-mode, the values in the ECD equal the parameter-values in the inverter. If another option is selected, the parameter-values are calculated from the entered values.

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## Expert settings

For advanced settings and to check the parameters, that will finally be written into the inverter, you may use the third page of the wizard ("Expert settings"). Also settings regarding the motors temperature-sensor and magnetising current can be made here.

General settings	Curcuit diagram (SM)	Expert settings
<b>Common Parameters</b>		
rated current:	2,90	A
rated speed:	6000,0000	1/min
rated voltage:	230	V
rated frequency:	300,000	Hz
magnetising current %:	0,0	%
rated torque:	0,800	Nm
max torque %:	625,0	%
max. current %:	200,0	%
stator resistance UV:	3,3000	$\Omega$
field weak. speed %:	150,0	%
motorprotection curr. %:	200,0	%
Temperature sensor type:	KTY	
<b>Asynchronous motor</b>		
rated cos( $\varphi$ ):	0,80	
head inductance UV:	100,000	mH
head inductance 50% flux %:	100,0	%
Sigma inductance stator %:	100,0	%
Sigma inductance rotor %:	100,0	%
Field weak. curve %:	100,0	%
Prot. mode:	Separated cooling	
u/f boost:	0,0	%
rotor resistance UV %:	100,0	%
<b>Synchronous motor</b>		
EMK [Vpk/1000rpm]:	28,300	
Inductance q-axis UV:	2,700	mH
Inductance d-axis %:	100,0	%
prot. time min. Is/Id:	8,0	s
prot. time Imax:	1,0	s
prot. recovery time:	1,2	s
prot. min. Is/Id:	150,0	%

**Note:** Some parameter-values on the page "Expert settings" are declared in '%'. These parameter-values are always depending on a reference-parameter. For example the magnetising current or max. current are declared in % of the rated current, the max. torque is declared in % of the rated torque, the sigma-inductances are declared in % of the head-inductance and so on.

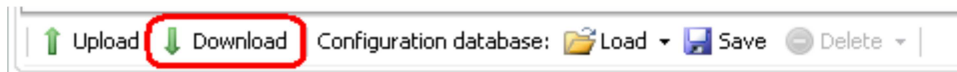
## Download to device

The wizard provides three different methods to download the configured motor-data into the device:

- Direct download
- Combined download (with other wizard's configurations)
- Combined parameterlist for later download

### *Direct download*

To download the configured motor-data directly into the device, select “Download” from the wizard's tool-menu:

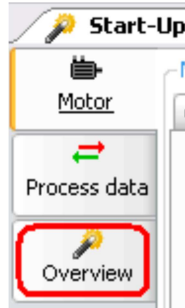


The configured data will immediately be downloaded to the device and after successful completion of the download the wizard indicates, that it's data is equal to the data in the device:

Data is equal to inverter settings

## Combined download / Parameterlist

To combine your motor-data with the configured data of other wizards, select "Overview":



On the overview-page you can select the configurations, which should be included in your download:

**Overview**

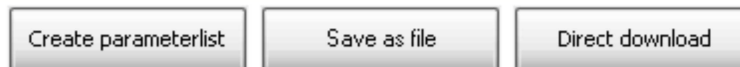
The following functions are available:

- To apply the settings to the device, click "Direct download"
- To save the settings for later access in the project, click "Create parameterlist"
- To save the settings as single file (\*.cvxpl) on your harddisk, click "Save as file"

You may use the "Include"-checkboxes in the summary to select the settings, you would like to include or leave out.

Wizard	Include	State
Motor	<input checked="" type="checkbox"/>	OK
Operation modes	<input checked="" type="checkbox"/>	OK
Process data	<input checked="" type="checkbox"/>	OK
Protection/Warning	<input checked="" type="checkbox"/>	OK
Velocity mode	<input type="checkbox"/>	Velocity mode is disabled!

After this, you have three options at the bottom of the Overview-page:



- **Create parameterlist:**  
Creates a parameterlist with the configured parameter-values and adds it to the project. You can download this list, whenever you want.
- **Save as file:**  
Allows you to save the configuration as an external parameterlist file, which can be imported in this or other projects
- **Direct download:**  
Downloads the configured parameter-values of all selected wizards immediately to the device

## Disclaimer

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