

MANUAL  
*MotorManager*



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# Introduction

The MotorManager can be applied for all BLDC motors that are using M51, M60 and C60 type controllers. The software can be used to adjust the controller for the respective application. A variety of parameters are available to the user for this purpose.

Furthermore, the MotorManager offers the possibility to control a motor and visualize process data in real time. The data can be used, for example, to design motors or to detect problems in existing applications.

If this manual leaves any questions unanswered, our support is available to help.

Phone: +49 471 98409-0

Mail: [info@rotek-motoren.de](mailto:info@rotek-motoren.de)

## Requirements

Operating system: Windows 7/8/10, 32 or 64bit

Serial adapters: All common USB to RS232/RS485 converters

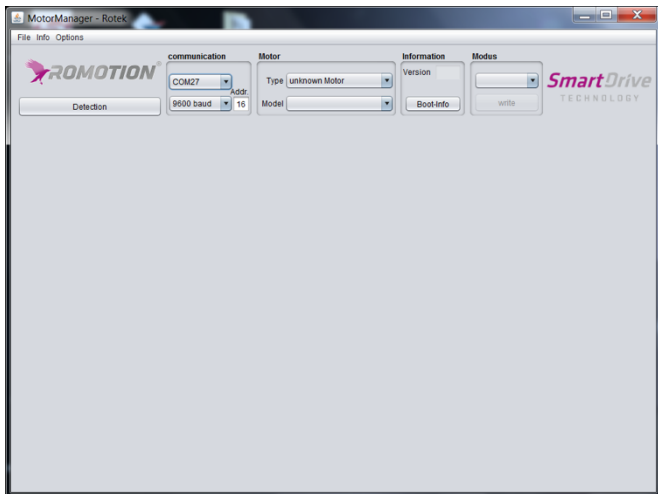
## Installation

To install the software, the latest version of the setup file must first be run. This file can be downloaded from [www.rottek-motoren.de/downloads-2/](http://www.rottek-motoren.de/downloads-2/). The password is available from our support. The installation wizard will then guide you through the installation of the program. An icon is created on the desktop that can be used to start the application.

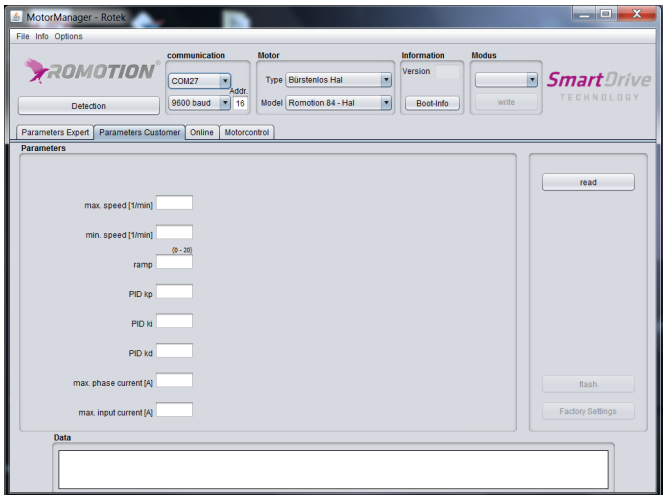
If necessary, a driver for the USB to RS232/RS485 adapter has to be installed. More detailed information can be found in the manual of the respective adapter.

## Establishing a Connection

To parameterize a motor via the PC, it must first be connected to a power source. After that the motor is connected to the PC via the USB to RS232/RS485 adapter. The MotorManager software is then started. In the now opening window, the correct COM port in the "communication" field must be selected. If more than one port is available for selection, the system control can be used to find out which COM port the motor is connected to. Next, the type and model of the motor are set in the "Motor" field. If all parameters are set, the program establishes a connection to the motor. "Bürstenlos Flux" stands for sensorless operated motors and "Bürstenlos Hal" for motors with a rotation sensor. The model designation can be taken from the nameplate of the motor. Depending on the type of motor, it is possible to have these parameters detected automatically. To do this, simply click on "Detection".



If a connection has now been successfully established, a large window with four tabs appears in the lower part of the window. In the "Data" field, the communication history between the PC and the motor can be tracked.



# Parameters Customer

As soon as data has been read for the first time, the software version of the motor is shown in the "Information" field. In the "Modus" field, you can now configure how the motor should be controlled:

„Manuell“: Control via rotational speed (RPM) and direction signal.

„Protokoll“: Control via bus system

Click on the "write" button to save the value in the motor.

The screenshot shows the MotorManager - Rotek software interface. The top menu bar includes File, Info, and Options. The main window is divided into several sections:

- communication**: COM27 (dropdown), Addr. 16 (dropdown), 9600 baud (dropdown).
- Motor**: Type Bürstenlos Hal (dropdown), Model Romotion 84 - Hal (dropdown).
- Information**: Version 37, 12345678, Boot-Info (button).
- Modus**: Manuell (dropdown), write (button).

Below these sections are buttons for Detection, Parameters Expert, Parameters Customer (selected), Online, and Motorcontrol. The Romotion logo and SmartDrive TECHNOLOGY logo are also visible.

The **Parameters** section contains the following fields and buttons:

- max. speed [1/min]: 4500
- min. speed [1/min]: 250
- ramp: 1 (range 0-20)
- PID kp: 20
- PID ki: 5
- PID kd: -5
- max. phase current [A]: 10
- max. input current [A]: 8
- read (button)
- flash (button)
- Factory Settings (button)

The **Data** section at the bottom shows a log of communication: SEND, RECEIVE, and COM27 CLOSED.



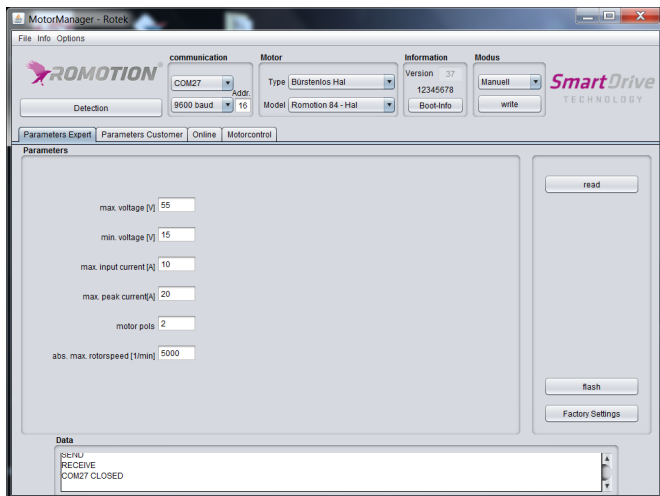
In this tab, parameters relevant for the customer can be set. The parameters are:

Parameters	Description
max. speed [1/min]	Maximum settable RPM of the motor
min. speed [1/min]	Minimum settable RPM of the motor
ramp	Acceleration ramp
PID kp	PID Controller proportional part
PID ki	PID Controller integral part
PID kd	PID Controller differential part
max. phase current [A]	Maximum phase current
max. input current [A]	Maximum total current of the motor

Additionally, the following buttons can also be found on this tab:

Parameters	Description
read	Reads all parameters from the controller
flash	Saves the parameters in the controller
Factory Settings	Resets all parameters to default settings

# Parameters Expert



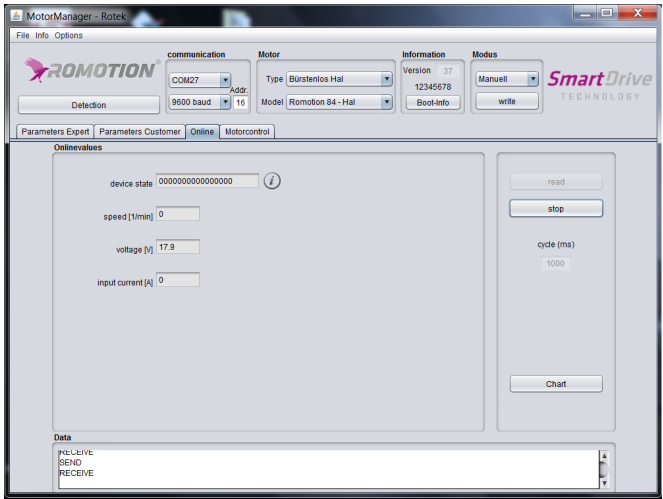
The parameters in this tab are set by the manufacturer and should only be changed by the user upon consultation.

Parameters	Description
min. Voltage [V]	Maximum permissible operating voltage
min. input current [V]	Minimum permissible operating voltage
max. input current [V]	Maximum total current of the motor
max. peak current [A]	Maximum current for short-term peaks
motor poles	Number of pole pairs
abs. max rotnspeed [1/min]	Total maximum RPM

Additionally, the following buttons can also be found on this tab:

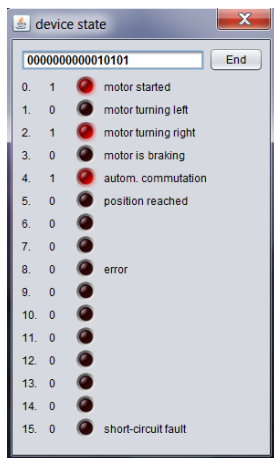
Parameters	Description
read	Reads all parameters from the controller
flash	Saves the parameters in the controller
Factory Settings	Resets all parameters to default settings

# Online

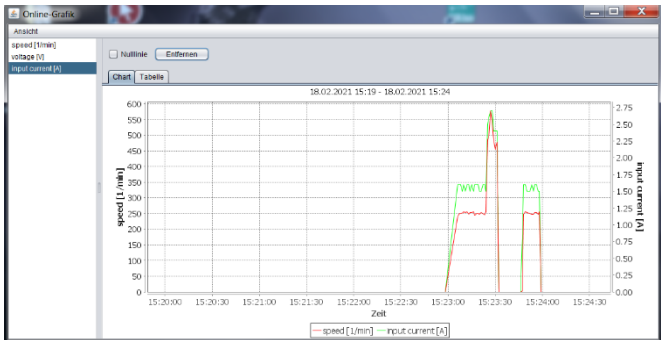


This tab is used for live monitoring of the motor. By clicking on the "read" button, the current status of the motor is read in regular intervals and displayed in the left-hand window. This can be stopped via the "Stop" button. The parameter „cycle“ is used to set how often a new value should be read. The minimum value is 100 ms.

The current RPM, the operating voltage, the current consumption of the electronics and the device status are read. With a click on the i-symbol the description and the state of the status bits is displayed in a separate window.



With a click on the "Chart" button, the current data is plotted in a graph.

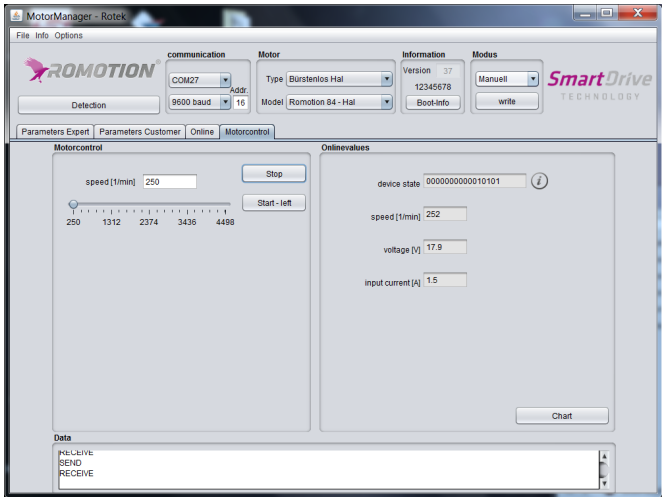


Additionally, the data can be displayed and exported as a table.

The screenshot shows the 'Online-Grafik' window with the 'Tabelle' tab selected. The table displays the following data:

Zeit	voltage [V]	input current [A]	speed [1/min]
18.02.2021 15:19:55	17.9	0	0
18.02.2021 15:19:57	17.9	0	0
18.02.2021 15:19:59	17.9	0	0
18.02.2021 15:20:01	17.8	0	0
18.02.2021 15:20:03	17.9	0	0
18.02.2021 15:20:05	17.9	0	0
18.02.2021 15:20:07	17.9	0	0
18.02.2021 15:20:09	18.1	0	0
18.02.2021 15:20:11	18.2	0	0
18.02.2021 15:20:13	18.1	0	0
18.02.2021 15:20:15	18.2	0	0
18.02.2021 15:20:17	18.2	0	0
18.02.2021 15:20:19	19.2	0	0
18.02.2021 15:20:21	19.9	0	0
18.02.2021 15:20:23	20.4	0	0
18.02.2021 15:20:25	21.3	0	0
18.02.2021 15:20:27	21.4	0	0
18.02.2021 15:20:29	21.4	0	0
18.02.2021 15:20:31	21.4	0	0
18.02.2021 15:20:33	21.5	0	0
18.02.2021 15:20:35	21.5	0	0
18.02.2021 15:20:37	21.5	0	0
18.02.2021 15:20:39	21.4	0	0
18.02.2021 15:20:41	21.6	0	0
18.02.2021 15:20:43	22.8	0	0

# Motorcontrol



The motor can be controlled via this tab. The rotational speed as well as the direction of rotation can be specified. Furthermore, the current state of the motor is displayed in the field "Onlinevalues" on the right side of the window.

**ROTEK GMBH & CO. KG**

Coloradostr. 11+13  
27580 Bremerhaven

**TEL** +49-471-984 09-0

**FAX** +49-471-984 09-29

**MAIL** [info@rotek-motoren.de](mailto:info@rotek-motoren.de)

**WEB** [www.rotek-motoren.de](http://www.rotek-motoren.de)