RideAnalyzer

User Manual

Content

1. Device

1.1 Front view with touch display

Picture 1

1	Power Button
2	Power indicator
3	Battery charging indicator
4	Orientation marker
5	Touch screen
6	Microphone with connecting cable

1.2 Rear view

Picture 2

7	USB charger / computer connector
8	USB Host to connect USB stick or external soundlevel-meter
9	Microphone jack
10	Hardened standoff

2. Battery and Charging

Before the first use and in case the battery meter shows an empty battery, please charge the device for at least 12 hours, to be sure the battery is fully charged and the device has recognized a full charge at least once!

The built in battery is a Li-Ion battery type. Please refer to the Safety regulations for the appropriate transport and shipping regulations.

The battery power duration will be approx. 6 to 8 hours, depending on usage.

3. Noise measurement with integrated sound level-meter

For noise measurement with the integrated soundlevel-meter just connect the according microphone. The integrated soundlevel-meter is a hardware option. If your device is not equipped with, please contact your vendor.

4. Noise measurement with external sound level meter

For noise measurement, a sound level meter can be connected optional via the USB host connector. The RideAnalyzer supports the sound level meter AZ8922 and PCE-MSM4. An optional connected sound level meter will be detected automatically, a configuration is not necessary. For the proper use of the sound level meter please refer to the according user manual.

5. Operating Instructions

5.1 Power ON/OFF

To power the device on, press the Power Switch (label 1, *Picture* 1) on the front face of the device for approx. 4 seconds until the power indicator (label 2, *Picture* 1) lights up green. The startup process will take approx. 30 seconds, a progress bar shows the status of the startup process. The startup process is finished when the main screen (see *Picture* 3)
To power down the device press the Power switch again for one second. The internal shutdown process will take approx. 5 seconds, even if the display turns black more quickly.
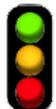

Picture 3

5.2 Main control buttons

 Start measurement   Setup

 Setup limits   Transfer measurements
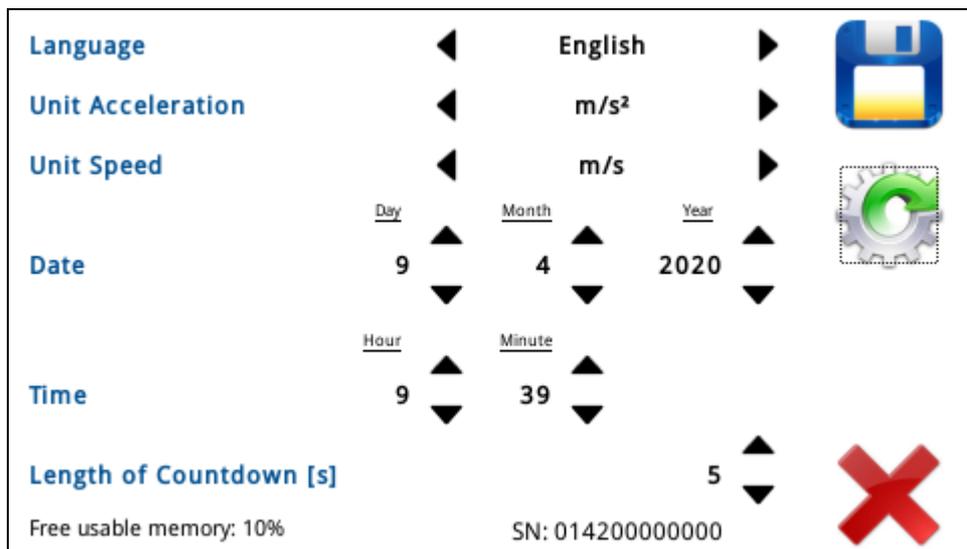
 Review stored measurements   Battery status indicator

5.3 Setup Parameter

By pressing the ⚙ button, the setup screen (see *Picture* 4) is activated to set up the basic device parameters:
- Language
- Units
- Date and Time
- Length of countdown before measurement start

Language	◀	English	▶	💾
Unit Acceleration	◀	m/s²	▶	
Unit Speed	◀	m/s	▶	⚙

| | Day | Month | Year | |
| Date | 9 | 4 | 2020 | |

| | Hour | Minute | |
| Time | 9 | 39 | |

| Length of Countdown [s] | | 5 | ❌ |
| Free usable memory: 10% | SN: 014200000000 | |

Picture 4

To change a value, just press the corresponding arrow button ▼ ▲ ◀ ▶ .

The parameter can be permanently saved by pressing the 'Save' 💾 button. To close the screen without saving the data press the 'Cancel' button ❌.

5.4 Setup Limits

Before starting any measurement it is recommended that the correct limits for the evaluation are set. Press the 'Setup Limits' button 🚦 to open the screen.
After entering the correct password, the user is able to parameterize up to 6 limit sets. Those limit sets can be renamed (max. length one character) by tapping the head of the appropriate column.

	A	B	C	D	E	F
ISO X P/P	0.030	0.027	0.055	0.100	0.150	0.020
ISO X A95	0.025	0.015	0.030	0.098	0.120	0.010
LP 10Hz X-axis P/P	0.040	0.038	0.030	0.025	0.200	0.017
BP 10-75Hz X-axis P/P	0.365	0.280	0.650	0.485	0.200	0.900
ISO Y P/P	0.100	0.110	0.250	0.090	0.200	0.350
ISO Y A95	0.050	0.060	0.070	0.040	0.030	0.020
LP 10Hz Y-axis P/P	0.200	0.300	0.400	0.500	0.600	0.700
BP 10-75Hz Y-axis P/P	0.150	0.200	0.320	0.110	0.095	0.100
ISO Z const. P/P	0.500	0.500	0.600	0.090	0.100	0.450
ISO Z const. A95	0.200	0.200	0.200	0.120	0.340	0.250
LP 10Hz Z-axis const. P/P	0.600	0.600	0.500	0.500	0.300	0.400
BP 10-75Hz X-axis const. P/P	0.600	0.600	0.500	0.500	0.400	0.300
ISO Z non-const. P/P	0.900	0.700	0.400	0.550	0.300	0.100

Picture 5

Choose the value you want to change by touching the corresponding value in the table and change the value in the pop up number pad.

The limits are saved by pressing the 'Save' 💾 button. To close the screen without saving the data press the 'Cancel' button ❌.

The default password on delivery is *rideanalyzer* or *hra* and can be changed by the user.

The 📋 button is used to change the password. The keypad appears to enter the new password.

Caution! After confirming the keypad with the 'OK' ✔ button, the newly entered password is immediately active!
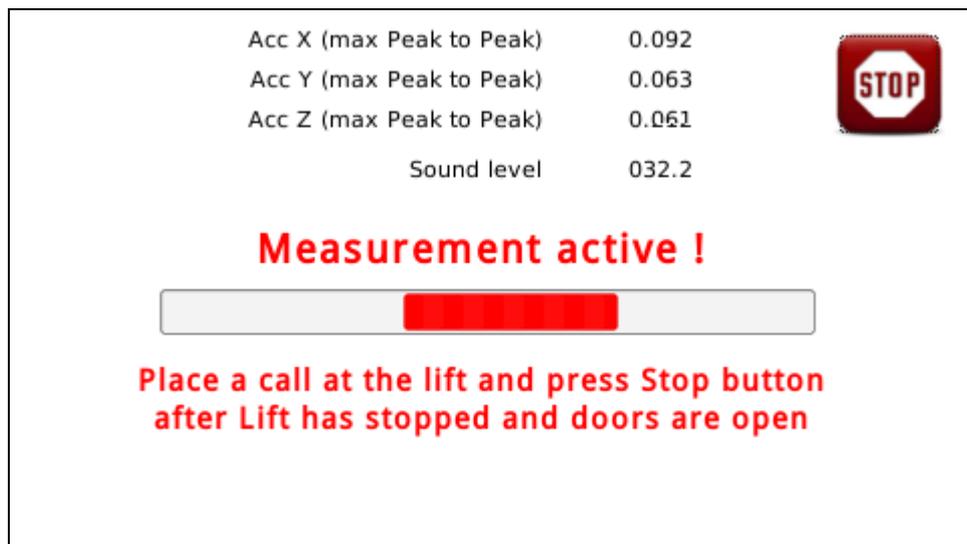
5.5 Measurement

To start a measurement, press the button .
If your device is equipped with an internal sound level meter, the user will be asked to confirm whether to measure with or without sound. After confirming or denying, a screen with a countdown will appear. Please place the device on the elevator floor and follow the instruction on the screen.
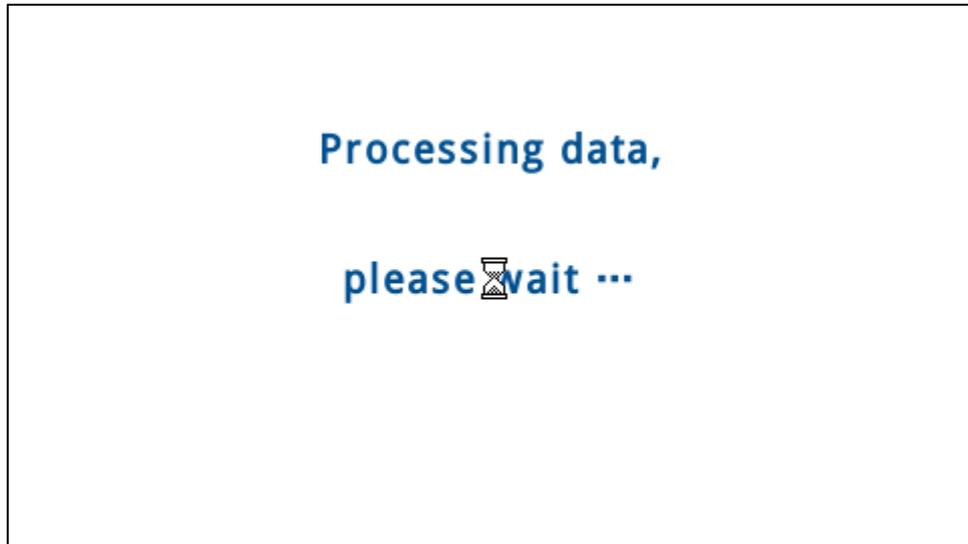

Picture 6

The measurement process can be canceled by tapping the 'Cancel' button.
After the countdown reaches zero, the data acquisition will start automatically, and the measurement screen appears.

Picture 7

Call the lift to start a ride. After the ride, stop the measurement by pressing the 'STOP' button ⬛ on the devices touch screen.

The device starts processing and evaluating the recorded data. This can take up to 20 seconds, depending on the duration of the measurement.
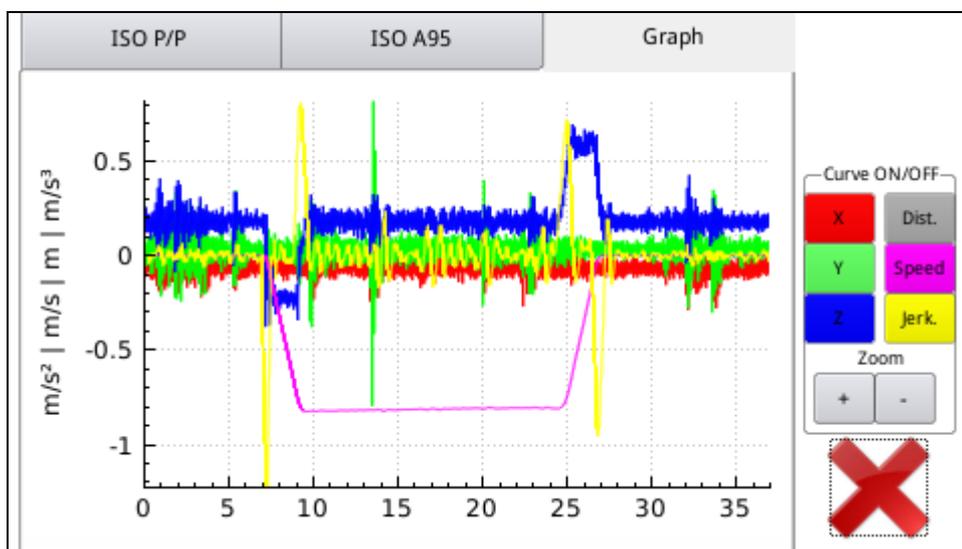

Picture 8

After evaluation of the data without any error, the result screen will appear.

5.6 Measurement Results

The results screen shows different views on separate tabs. To select a view, press on the according tab.

The result screen starts automatically with the 'Graph' view

Picture 9

ISO X	Enable/Disable X view	Speed	Enable/Disable Speed view
ISO Y	Enable/Disable Y view	Jerk	Enable/Disable Jerk view
ISO Z	Enable/Disable Z view	+ −	Curve Zoom in / out

To move the graph, press on the trace and move it with a finger or pen.

By clicking on the tab 'ISO A95' the A95 values, speed, travel height and the sound data (optional) will be displayed.

Picture 10

With the dropdown box 'Select Limit Set' , the limit set for the evaluation can be selected. For the settings of the limit sets, refer to chapter 5.4

The tab 'ISO P/P' shows the recorded peak to peak exceedances for the three axis.

Picture 11

By using the buttons ▼ ▲ the values of the exceedances and the corresponding height can be displayed.

To discard the measurement, press the 'Cancel' button ✖.

By pressing the 'Save' button 💾 the results can be stored in a file. A screen with a virtual keyboard appears to enter a file name for the measurement.
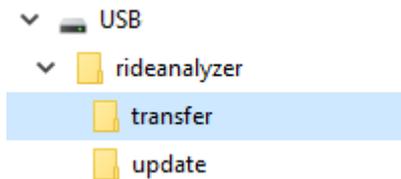

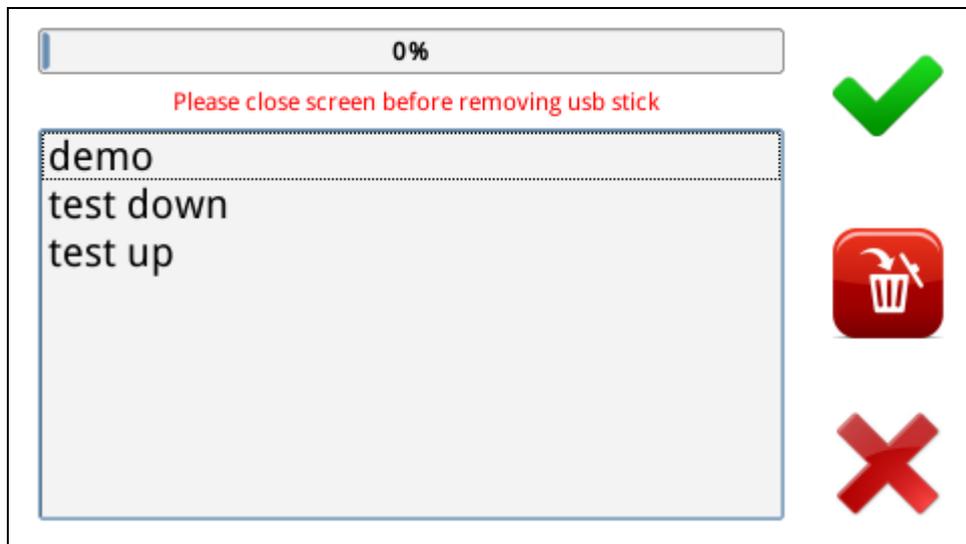*Picture 12*

5.7 Review Measurement

By the use of the button 'Review' previous measurements can be recalled and displayed. A screen will pop up where a previous measurement can be selected and by pressing 'OK' , the selected measurement will be displayed in the appropriate screens.

5.8 Transfer Data

A USB-Stick is required to transfer the stored measurements to a desktop computer for printing out reports using the Henning Suite,. The USB-Stick has to have a particular folder structure. It is necessary to create a folder *rideanalyzer* and below this a subfolder *transfer* manually on the USB device. Please consider the case sensitivity of the folder name (e.g. *F:\rideanalyzer\transfer*).

By pressing the 'Transfer' button in the main screen (Picture 3), a screen with the list of all stored measurements shows up. The <#> marker shows data already transferred .
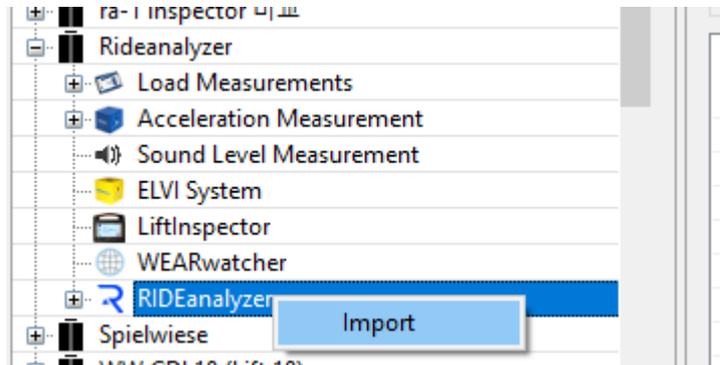

Picture 13

Measurements are selected for transfer by tapping on them, this highlights that entry. To unselect a measurement, tap on a highlighted measurement.

If measurements are selected, the transfer starts by the use of the 'OK' button .

To import the data into the HenningSuite, plug in the USB-Stick into the computer and open the Henning-Suite. From the tree menu with the listed projects select the project and expand it by clicking on the + next to the project name. Select the device RideAnalyzer and do a click with the right hand mouse button, a popup 'Import' appears.

Picture 14

While selecting it, a file open dialog appears. In the file-open dialog, search for the USB-Stick and select the folder /rideanalyzer/transfer.
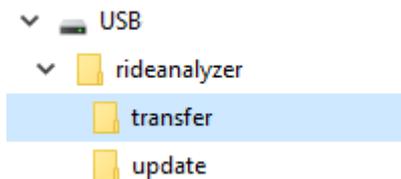

Here the files can be selected for the import.

5.9 Option Bluetooth

Optionally, saved measurement files can be transferred to another end device (e.g. mobile phone, tablet, laptop, ...) via Bluetooth. The so-called OBEX Push Service is used for this. The end-device must support this service accordingly.
If the RideAnalyzer is equipped with the appropriate hardware and the option is enabled on the end-device, a Bluetooth symbol also appears in the transfer dialog.
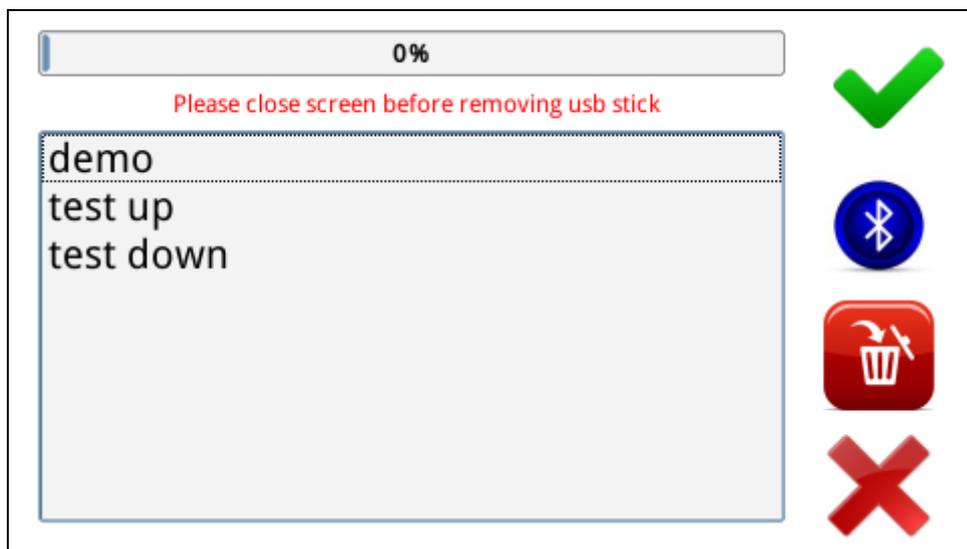
Picture 15

In order to transfer files via Bluetooth, at least one file must be selected, then press the Bluetooth button.
A new window appears in which the last used device is displayed. If this list is empty or if the end-device has changed, the device must be searched by using the "new BT search" function. The end-device must be set to be visible on Bluetooth.

Picture 16

The corresponding end device must be selected from the displayed list, the transmission starts with OK. A message is displayed on the end-device asking the user to start the data transfer. This message appears on the end-device for each file to be transferred and must be confirmed accordingly.
The files are stored on the device in the device-specific download folder.

5.10   Software Update

The RideAnalyzer software can be easily updated with the implemented update function. The new version has to be copied to a USB-Stick into the folder "update" which is a subfolder of "rideanalyzer" located at the top level of the USB-Stick (e.g. *G:\rideanalyzer\update*).
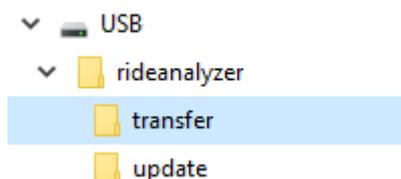
In most of the cases, the update is a zip-archive. First you need to unzip this archive to the folder on the USB-Stick as described above.

The update is started by accessing the 'Setup Parameter' screen by pressing the ⚙ button.

To proceed with the software update, press the button 🔄 . After a few seconds, a message will appear that the update was successful. After the restart, the new software is activated, please check this by looking at the Version number on the main screen below the RideAnalyzer logo (e.g. V1.47).

6. Specification

6.1 Flow Chart Screens

RIDEanalyzer Application

6.2 Technical Specification

6.2.1   Data Acquisition

Measuring Axis:	X/Y/Z
Sensor Output Bandwidth:	66Hz – 100Hz
Sensor Sensitivity:	0.25mg
Sample Rate:	200Hz
Range X/Y/Z:	+/-2.0g
Resolution X/Y/Z:	< 0.25mg

6.2.2   Evaluation

Acceleration:	Peak to Peak detection
Speed:	Maximum speed at constant run
A95 X/Y/Z:	According to ISO 18738
Distance:	Position of Peak exceedance
	Total travel height
Sound level (optional):	Max peak and a-weighted sound pressure level for pre-, post-, constant- and full-run

6.2.3   Device

User Interface:	Touch Display
Storage Capacity:	approx. 5000 measurements
Max. measurement length:	60 minutes
Temperature Range:	0 - 50°C
Size (W x L x H):	150 x 93mm x 30mm
Weight:	0.4kg
Battery:	Li-Ion 8700mAh / 3.6V
Charging Voltage:	5 V DC