insoric
swiss precision measuring

Insoric RealSpeed

Instruction Manual

Dear valued customer

By purchasing **Insoric RealSpeed** you have acquired a high-quality product distinguished by special capabilities and permanent innovation in the field of acceleration measurement. Congratulations on your purchase of this high-quality product and thank you for your trust.

The Insoric Team

Imprint

This instruction manual is a publication by Insoric AG, Hofwisenstrasse 12,
CH-8260 Stein am Rhein, Switzerland / Tel. +41(0)52 742 04 40 / info@insoric.com / www.insoric.com.

The instruction manual is part of the Insoric RealSpeed software. It contains important information on commissioning and operation of the **software for acceleration measurement**. In order to ensure proper and safe operation, all instructions must be precisely followed. The same applies if you pass on the product to third parties.

This instruction manual reflects the technical status at the time of going to print. Later changes that are not included in the instruction manual and further guidance and assistance can be found on our website at www.insoric.com/support > tab “Downloads”.

Contents

1.0 Introduction

Insoric RealSpeed enables precise acceleration measurements. Please also read the complete RealPower instruction manual, which contains complementary details to ensure a correct and safe operation.

2.0 Commissioning software

Insoric RealSpeed will only function in combination with **Insoric RealPower**. A crucial factor for commissioning Insoric RealSpeed is whether it was purchased together with Insoric RealPower or whether it was purchased subsequently as an upgrade.

2.1 Insoric RealPower Speed

You purchased Insoric RealSpeed together with Insoric RealPower. The product comes with an installation CD/DVD. When the CD/DVD is inserted into the DVD drive of your PC, the installation menu for the software and driver is started automatically. When the RealPower software is installed, a link to the RealSpeed software on the desktop is created automatically (see icon).

2.2 Insoric RealSpeed Upgrade

You already had Insoric RealPower and have subsequently purchased Insoric RealSpeed as an upgrade. When you notified us of your licence key, we emailed you a V2C file which allows you to activate Insoric RealSpeed in the RealPower software (path: "Extras ⇨ load V2C file").

3.0 Reading data

3.1 Before road test

A **suitable measured section** is required for the acceleration measurement. Ideally, the roadway should not have any uphill or downhill gradients or curves. There should be a clear view of the length of the entire section of road. When choosing the measured section, it is important to ensure that when **measuring acceleration from zero**, there will be no interference with the normal flow of traffic and that the traffic regulations can be complied with at all times.

Before **attaching the RealPower module to the wheel rim and activating it**, please read **sections 2.3.2 and 2.3.3 of the instruction manual for Insoric RealPower**.

3.2 Road test

Before conducting the road test, it is essential to read the **safety instructions** in **sections 2.4.1 and 2.4.2 of the instruction manual for Insoric RealPower**.

The road test is performed at full throttle for the required speed range. During acceleration, all the data is recorded by the RealPower module. The subsequent evaluation of the data in the RealSpeed software facilitates flexible marking of the acceleration ranges.

3.3 After road test

After completing the road tests, the RealPower module should be switched off using the "ON/OFF" switch (press and hold for approx. 3 sec) and removed from the wheel as follows: Pull on the tab of the fixing system between the RealPower module and the wheel for several seconds. The RealPower module can then be removed easily from the wheel without using force. Afterwards, remove the fixing system from the RealPower module. The RealPower module is **not** designed for continuous use and must be removed from the wheel after completing the road test. **Use only fixing systems supplied by Insoric AG. Use fixing systems once only.**

3.4 Before analysing data

To calculate the acceleration data and to produce the test certificate, the RealSpeed software requires the wheel diameter. The wheel diameter is measured using the wheel measuring device* supplied with the product and subsequently entered in the RealSpeed software program.

The wheel diameter should be measured horizontally, as in that position there is always sufficient space between the wheel and the wheel arch.

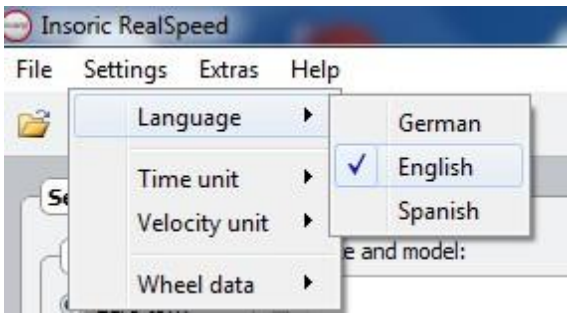
To obtain the precise measurement, the diameter must be measured horizontally though the centre of the hub.

* *RealPower Dyno-System Professionell*

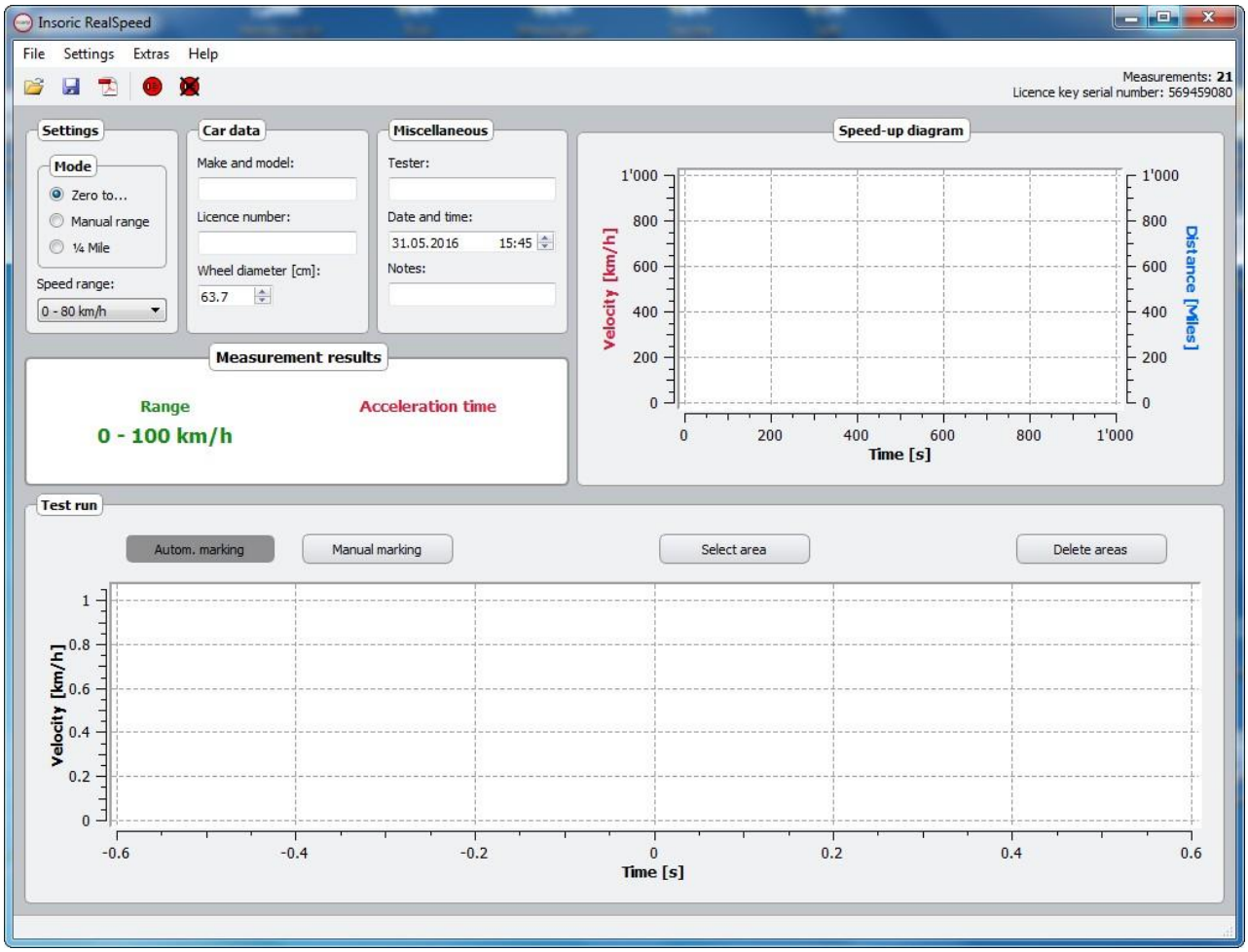
4.0 Analysing data

4.1. Starting software

To start the RealSpeed software you require the licence key (supplied with Insoric RealPower). Plug the USB stick on which the licence key is stored into an available USB port on your PC. Double-clicking the program icon will then start the user interface of the RealSpeed software.

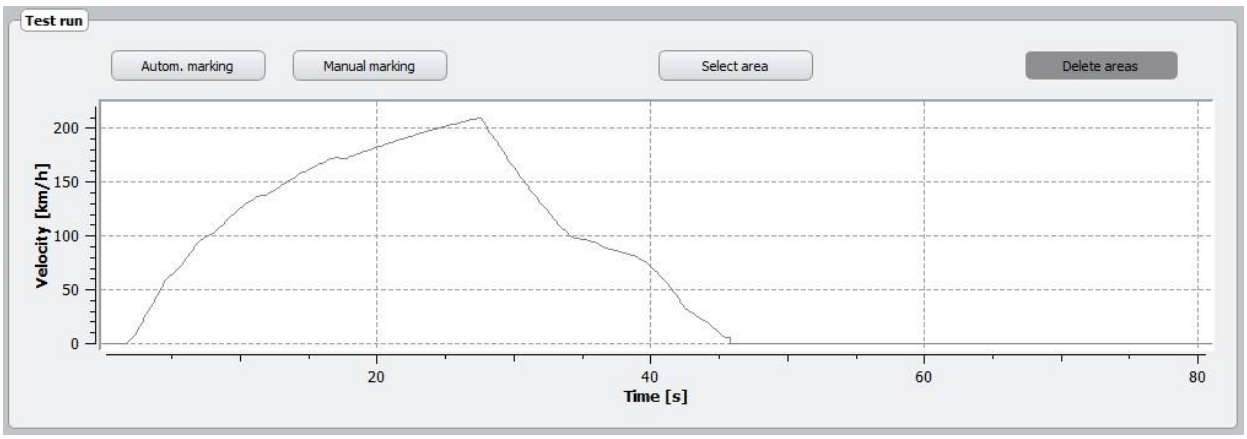


Go to the menu item **"Settings ⇨ Language"** on the pull-down menu and set the desired language.



4.2 Reading data from RealPower module

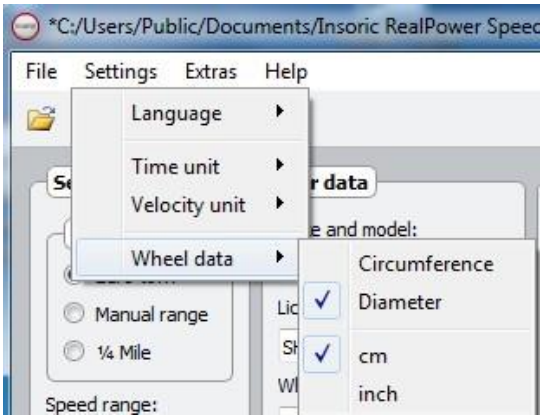
Now connect the RealPower module to the PC using the USB lead supplied and switch it on. Activate the module by clicking the **"Read-out module"** button. The process of transferring the data then starts.



Once all the data has been successfully read from the RealPower module, the power traces recorded appear on the velocity diagram. Choosing **"File ⇨ Save"** saves the data on your PC. The file name and where it is saved are always user-definable.

4.3 Entering basic settings

As an example for the following analysing steps we chose a test run with a car that was accelerated **from 0 – 209 km/h**. Please enter the following parameters in the RealSpeed software:

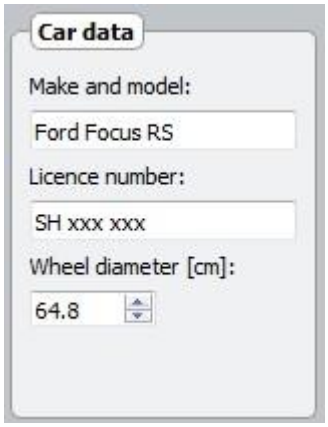


Parameters for Wheel data

The parameters for the wheel data can be set on the **" Settings ⇨ Wheel data"** menu.

The unit for the wheel data can be set to cm or inch.

Car data



In this window you enter the make, model and licence number of the car. Those details will appear on the test certificate later on.

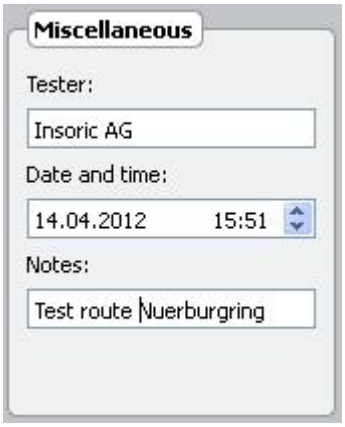
Make and model (free text)

Licence number (free text)

Furthermore the wheel diameter (wheel measuring device is part of Insoric RealPower) is entered.

Wheel diameter Wheel measuring device *

Miscellaneous



In this window you specify the name of the tester, date and time of the test and other details of the road test or the vehicle.

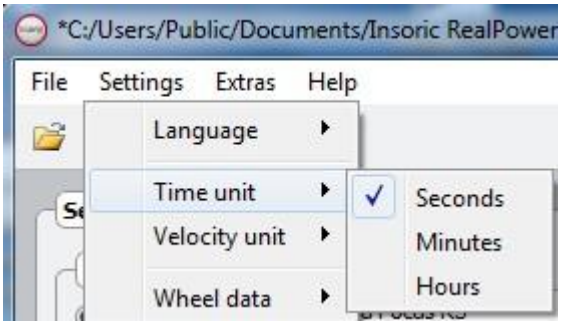
Tester (free text)

Date and time

Notes (free text)

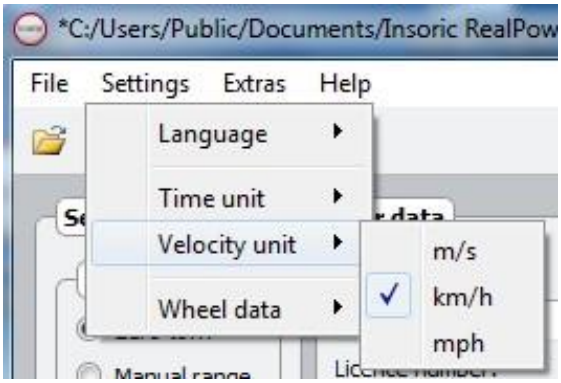
* *RealPower Dyno-System Professionell*

Parameters for X and Y axes



The parameters for the X axes can be set on the **" Settings ⇨ Time unit"** menu.

The time on the X axis can be shown in seconds, minutes or hours.



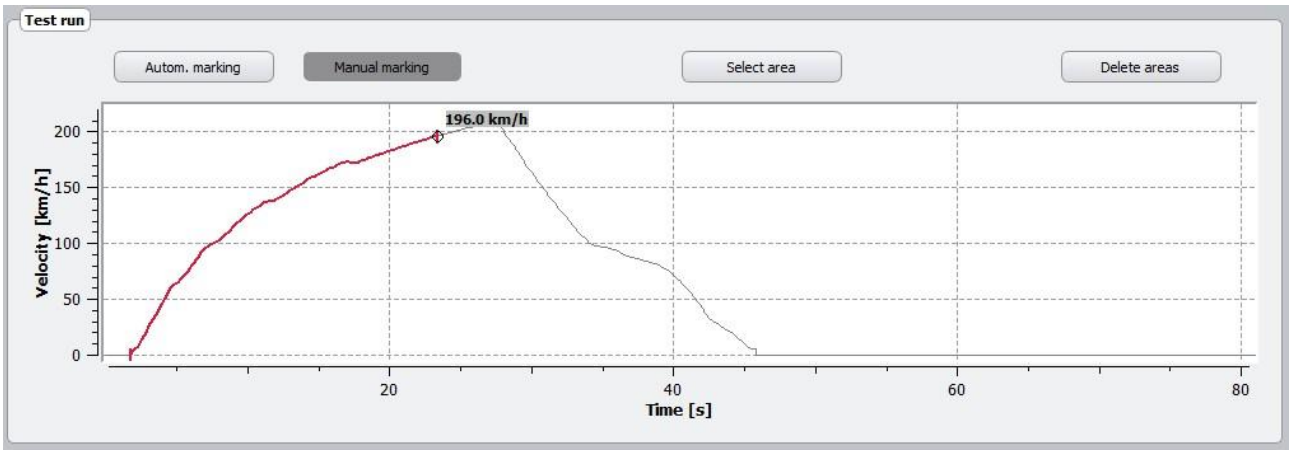
The parameters for the Y axes can be set on the **" Settings ⇨ Velocity unit"** menu.

The unit for the Y axis can be set to m/sec, km/h and mph.

4.4 Acceleration measurement off zero

4.4.1 Automatic marking

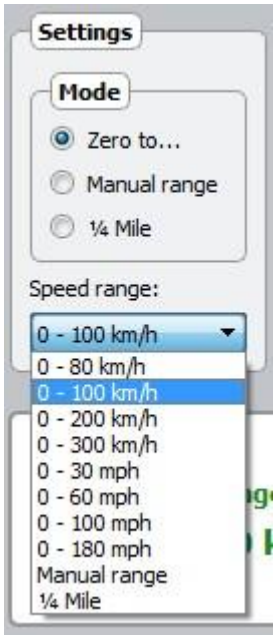
In order to calculate the acceleration from zero, an **acceleration range** can be marked in the **road test diagram**. To do this, click on the **"Automatic marking"** button and then on the acceleration range. The entire range is then **automatically marked in red**. Edges marked accidentally can be undone by selecting the **"Delete ranges"** button: the marking is removed by clicking on the edge. If you have marked several ranges, you can activate individual ranges by clicking the **"Select ranges"** button. The **zoom function** can be used in order to make the layout of the window clearer. Turn the scroll wheel on your mouse to do this.



You can evaluate accelerations from zero with reference to a particular final speed ("zero to…") or with reference to a fixed distance of a ¼ mile.

4.4.2 Analysis „Zero to…"

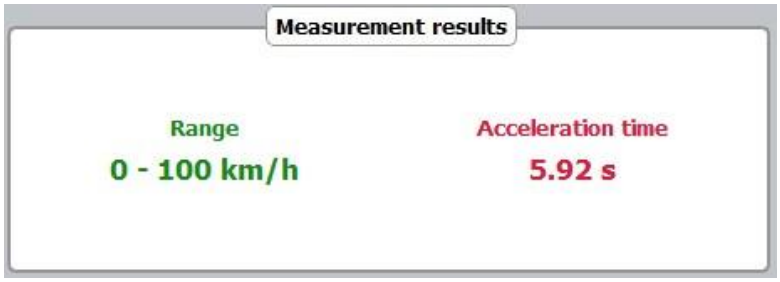
Settings

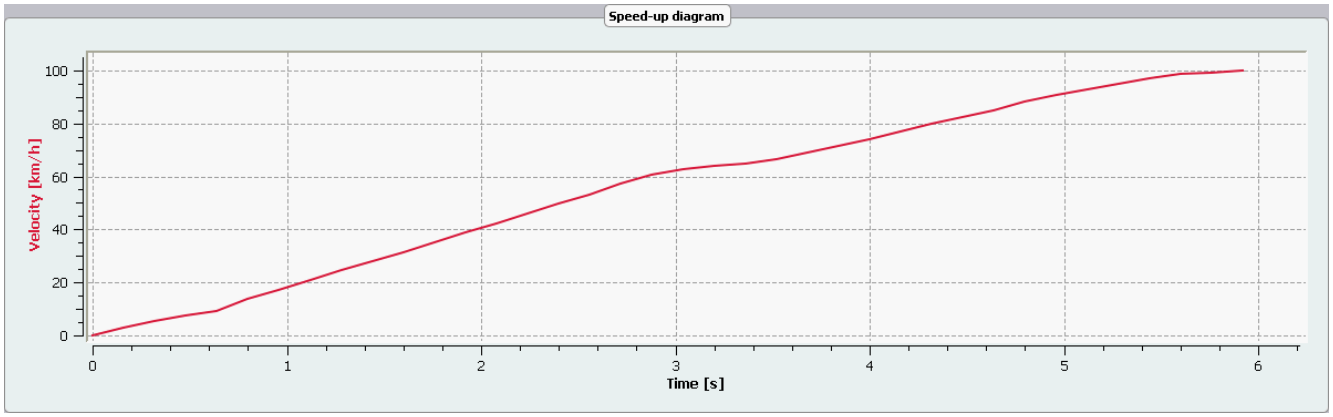


Choose mode: „Zero to…"

Select the required speed range (e.g. 0 – 100 km/h)

The **measurement results** are now shown as acceleration values and as a **curve on the speed-up diagram**.

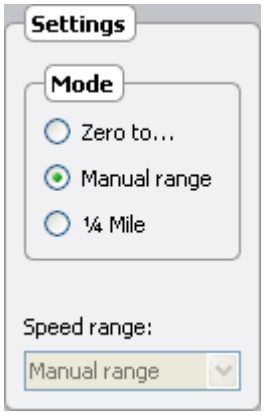




4.4.3 Analysis „Zero to final point"

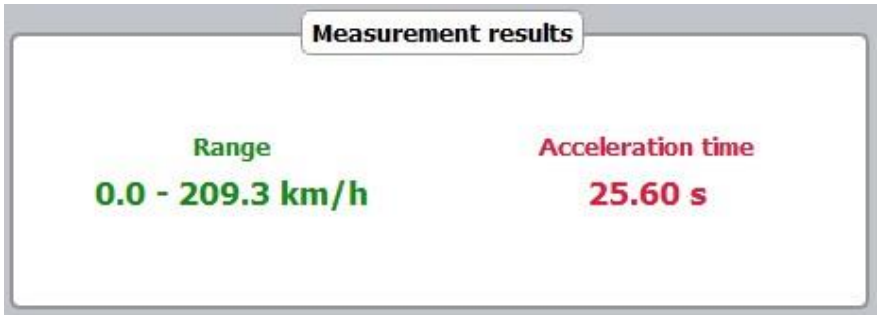
This function enables you the automatic analysis of the complete acceleration range from zero to the final velocity.

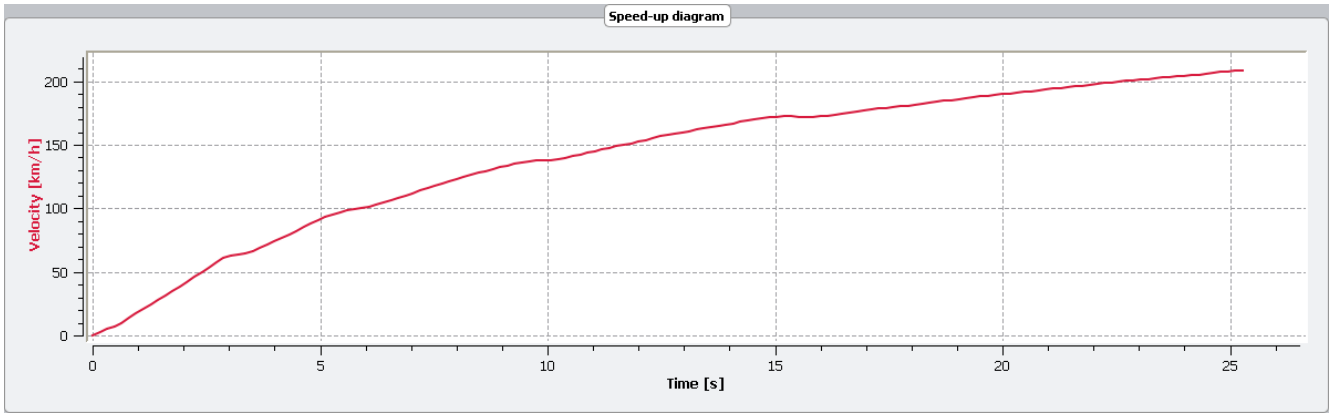
Settings



Choose mode: „Manual range"

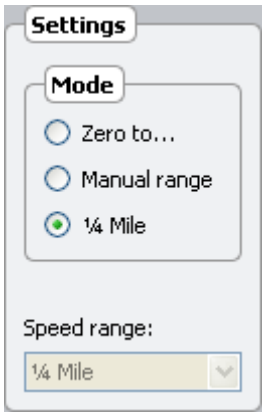
The **measurement results** are now shown as acceleration values and as a **curve on the speed-up diagram**.





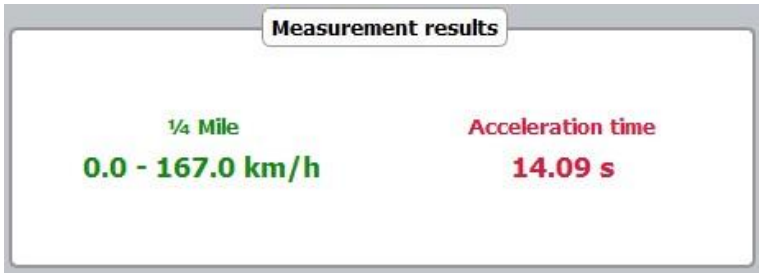
4.4.4 Analysis „¼ Mile"

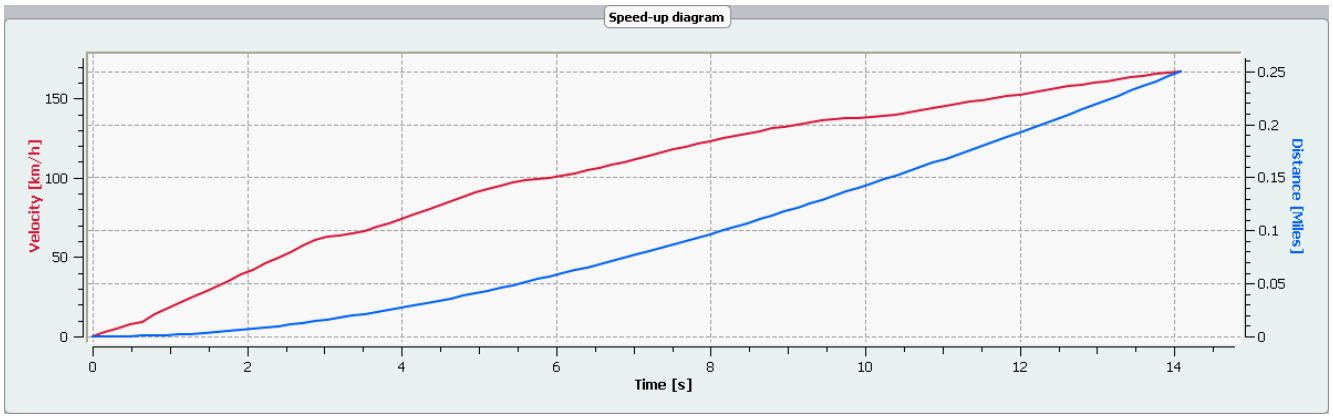
Settings



Choose mode: „¼ Mile"

The **measurement results** are now shown as acceleration values and as **curves on the speed-up diagram**.

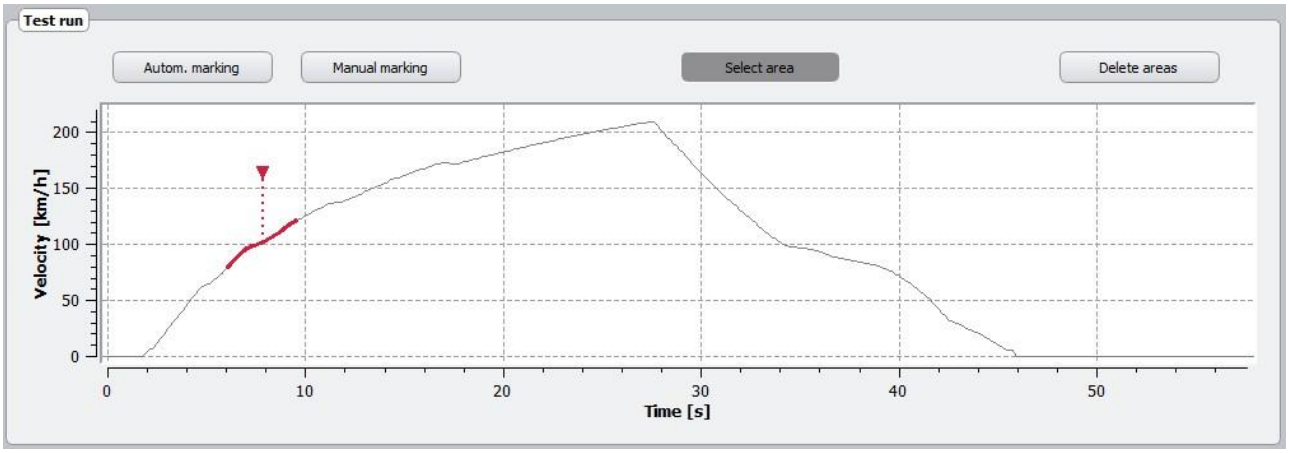




4.5 Acceleration measurement variable ranges

4.5.1 Manual marking

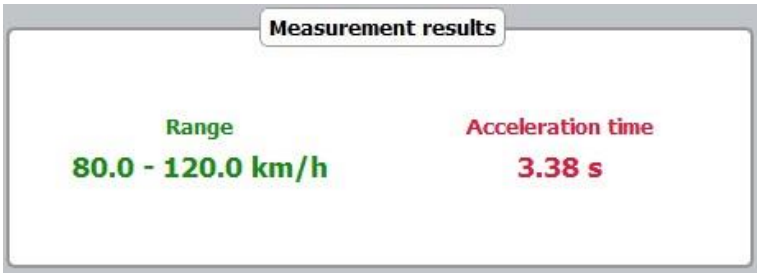
In order to be able to calculate acceleration within any range, an **acceleration range** is marked manually in the **road test diagram**. To do this, click on the **"Manual marking"** button and then quickly click on the starting point for the required acceleration range **only once**. Now use the mouse to move the cursor to the final point of the required range and quickly click on it again **once only**. The required acceleration range is now **marked in red**.

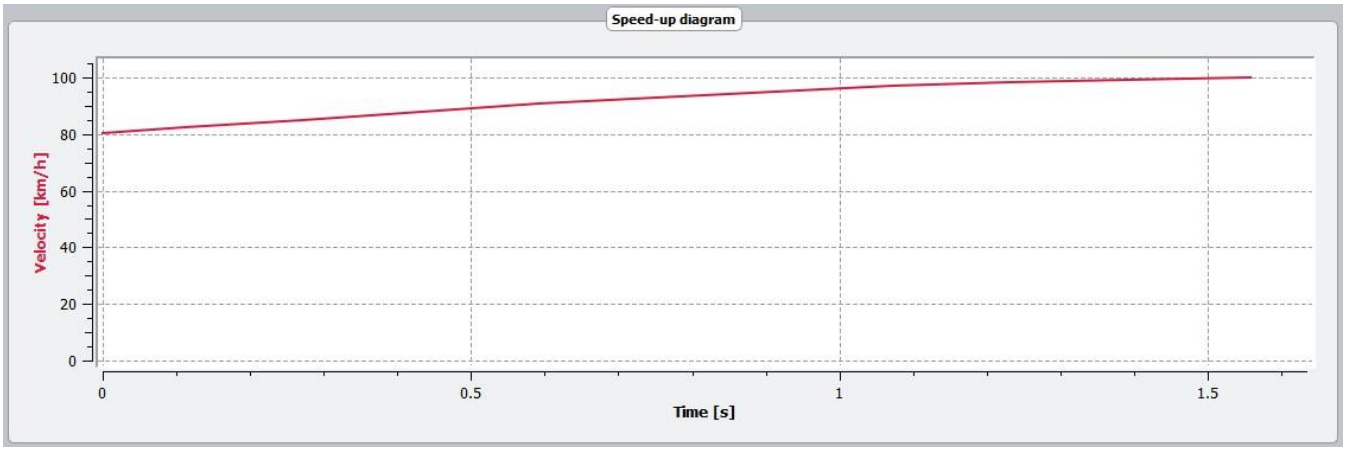


(In this instance a range of 80 – 120 km/hr was selected. From the acceleration curve it is very easy to identify the gear change "knee" which leads into the next gear four times.)

4.5.2 Analysis variable ranges

The **measurement results** are now shown as acceleration values and as a **curve on the speed-up diagram**.





4.6 Producing a test certificate

Choosing the icon **"Print PDF"** generates a PDF-document via the program Acrobat Reader®. After saving the document it will be shown on the screen and can be printed out.

Test certificate

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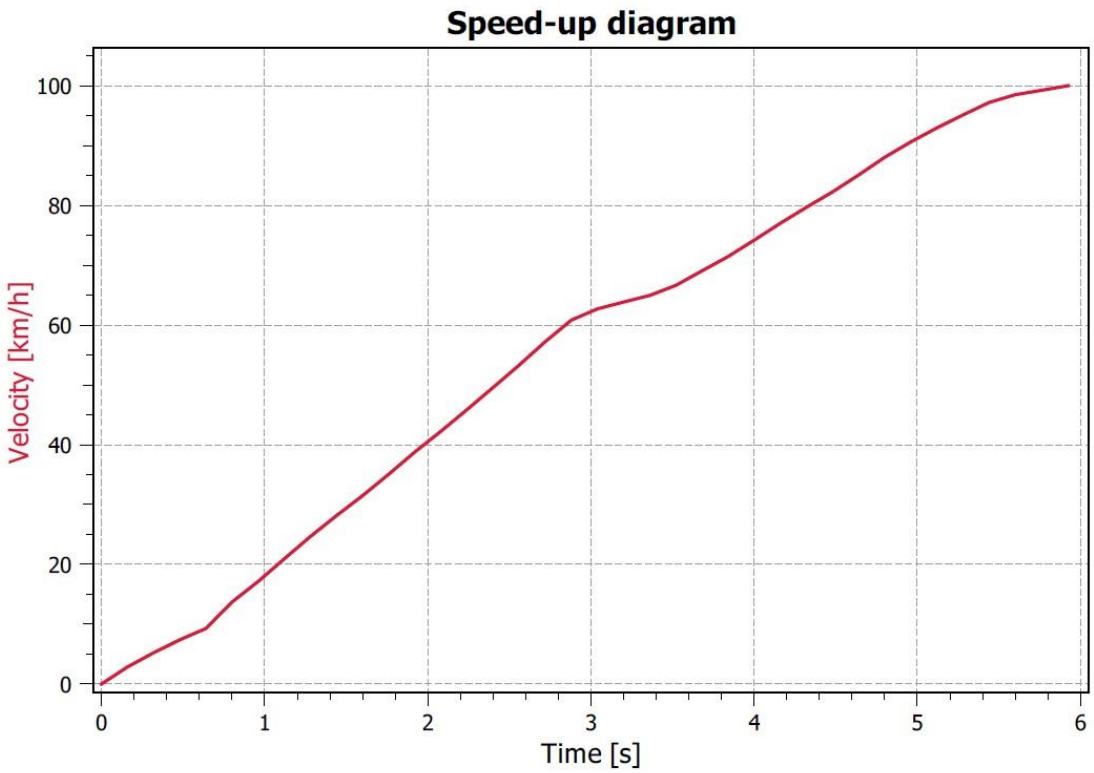
Car details		Date and tester	
Make and model:	Ford Focus RS	Measure date:	14.04.2012 (15:51)
Licence number:	SH xxx xxx	Tester:	Insoric AG
Wheel diameter:	64.8 cm		

Measurement results	
0 - 80 km/h	4.34 s
0 - 100 km/h	5.92 s
0 - 200 km/h	22.65 s
0 - 30 mph	2.34 s
0 - 60 mph	5.39 s
0 - 100 mph	13.14 s
0.0 - 209.3 km/h	25.60 s



Notes

Messstrecke Nuerburgring

RealSpeed Software Version: 1.1.1.2 / 569459080 www.insoric.com 1/1

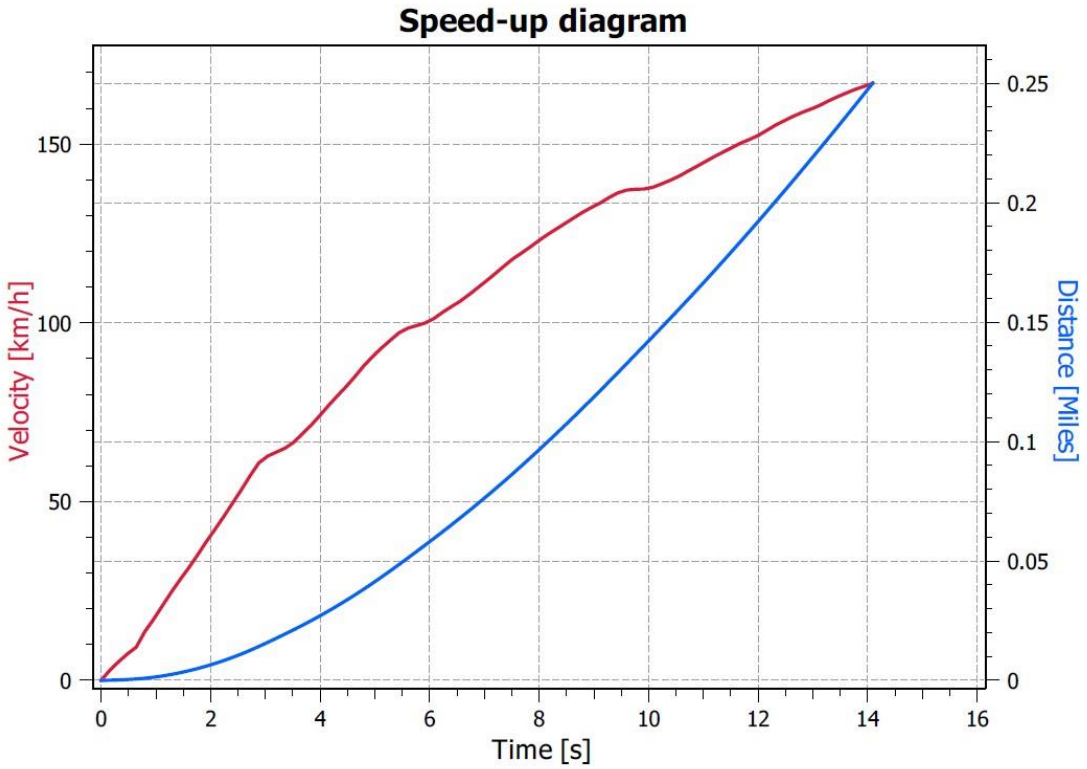
(Example analysis 0 – 100 km/h)

Test certificate

insoric
swiss precision measuring

Car details		Date and tester	
Make and model:	Ford Focus RS	Measure date:	14.04.2012 (15:51)
Licence number:	SH xxx xxx	Tester:	Insoric AG
Wheel diameter:	64.8 cm		

Measurement results	
¼ Mile	14.09 s



Notes

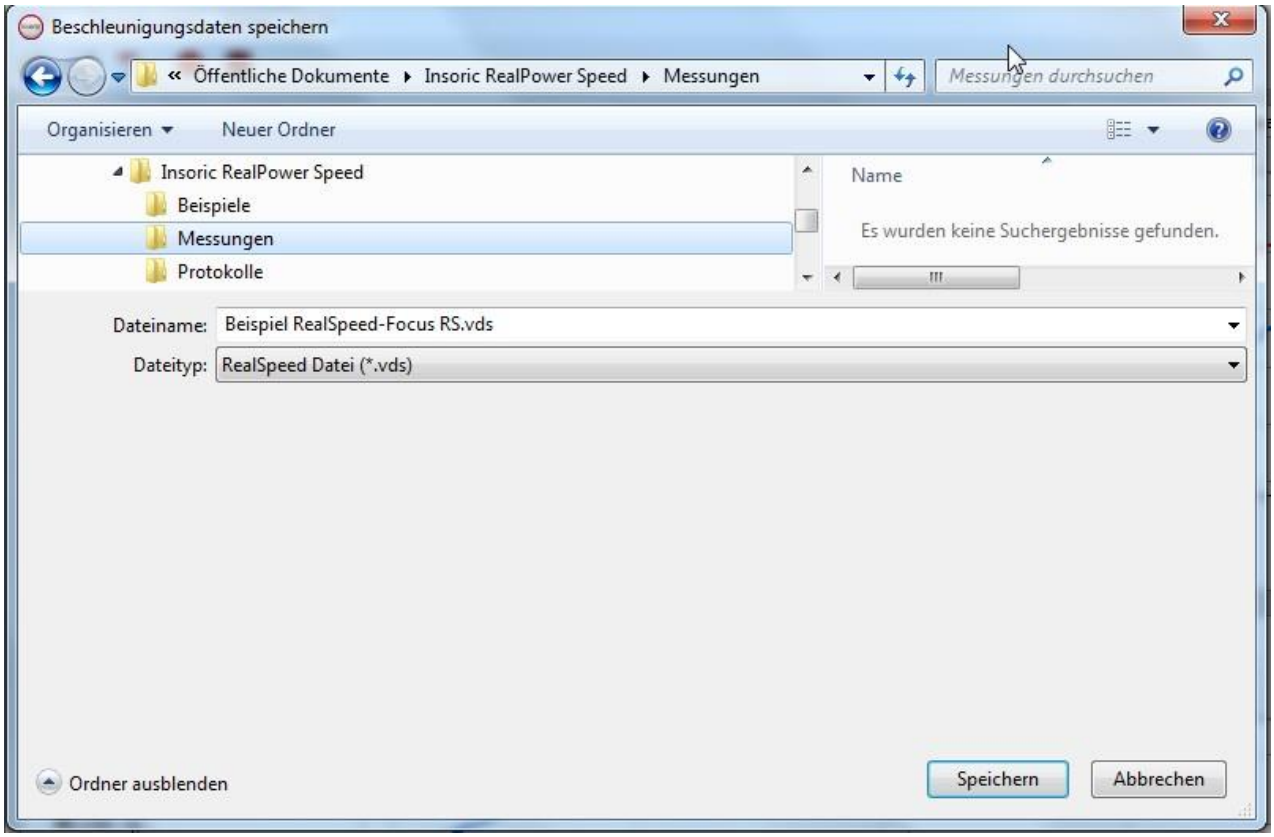
Messstrecke Nuerburgring

RealSpeed Software Version: 1.1.1.2 / 569459080 www.insoric.com 1/1

(Example analysis ¼ Mile)

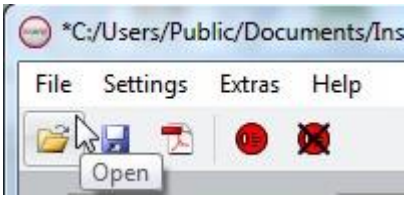
4.7 Saving the measurement results

Analysed test data can be saved to your hard disk by pressing the **"Save"** button or by Choosing **"File ⇨ Save As"**.



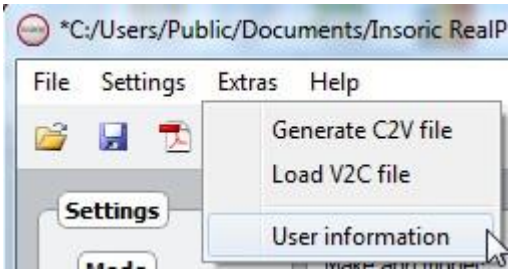
The RealSpeed software suggests a clearly identifiable name for the file. That name is made up of the registration number, date and time. You can change the file name and where it is saved as you wish.

4.8 Opening measurement results

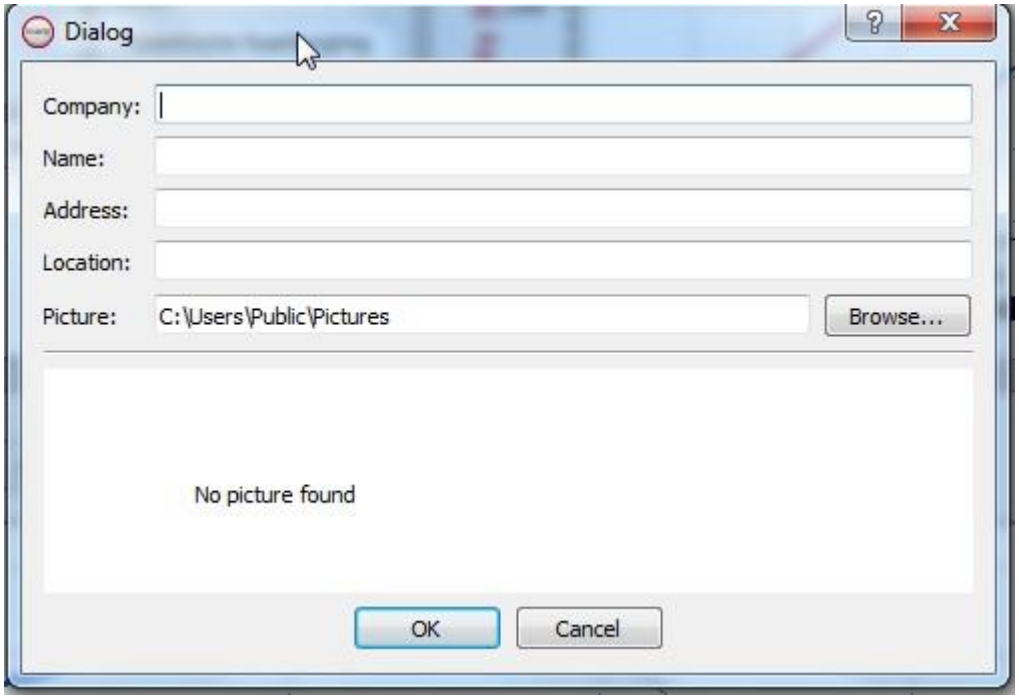


You can open previously saved test data or test certificates by choosing **"File ⇨ Open"** or clicking the **"Open"** button.

4.9 User informations



Choosing **"Extras ⇨ User information"** opens a window in which you can enter general details that are to appear on the test certificate.



*The other items on the **"Extras"** menu are not required for normal use of the RealSpeed software. They relate to individual customer service.*

CE Conformity
The product in the form as delivered is in conformity with the provisions of the following European Directives:

204/108/EC	Electromagnetic compatibility (EMC) – (successor of 89/336/EEC with amendments)
1999/519/EC	Limitation of the public exposure to electromagnetic fields (council recommendation)
2002/95/EC	Restriction of hazardous substances (RoHS)
72/245/EEC	Radio interference (electromagnetic compatibility) of vehicles (Last updated by CE-Conformity 2009/19/EC)

A copy of the original declaration of conformity can be downloaded from www.insoric.com.

RealSpeed Software and RealPower Hardware certification
Microsoft®, USB, Dynamic Test Center and Metas certifications:

Notizen