

Release 1R

DyRecs – Dynamic Resistor Calculation Program

Technical Documentation

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1 Product description

The software application “DyRecs – Dynamic Resistor Calculation Program” is a development arisen in the course of a project work at the professional school of the hanseatic city of Rostock for electrical engineering and electronics. The program that has been written in C# is based on the Microsoft .net Framework 3.5.

This Product represents a tool for calculating fall of voltage, current drop as well as loss of power in a simple series connection with power supply unit and an internal and external resistor. All input data can be dynamically adjusted.

In course of international globalization and in terms of excellent usability this application is available with a German and English user interface. The standard language for both installation and program is English.

2 System Requirements Specifications

2.1 Requirements to the Software

DyRecs is executable on the following operating systems:

- Microsoft Windows Vista (x86) Home Basic/Home Premium/Business/Enterprise/Ultimate incl. Service Pack 1
- Microsoft Windows Vista (x64) Enterprise/Ultimate incl. Service Pack 1
- Microsoft Windows Server 2003 (x86/x64) Small Business/Standard/Enterprise/Datacenter Edition incl. Service Pack 2
- Microsoft Windows XP (x86/x64) Home/ Professional Edition incl Service Pack 2

In addition you need to have the Microsoft .net Framework 3.5 and Adobe Reader 8 installed on your system.

2.2 Requirements to the Hardware

- Intel Pentium III Processor working at 1 GHz or similar AMD CPU
- Minimum of 512 MB RAM
- 20 MB hard disk space (250 MB with .net Framework 3.5)
- CD-ROM drive with a minimum of 16x speed
- Screen resolution with a minimum of 1024 x 768 pixels

Additionally please refer to the system requirements specifications of your operating system.

3 Installation

“DyRecs – Dynamic Resistor Calculation Program” can either be installed from an installation media or can be downloaded on the vendor’s website which is <http://www.zaschke.eu>.

The setup process will start automatically after inserting the DyRecs CD-ROM into your CD/DVD/BluRayDisc drive. In case your auto start functionality is disabled press [Windows Key] + [R] on your keyboard. Now type in the following line and verify with [RETURN].

„D:\setup.exe“

Please adjust the letter of your optical disk drive to your system configuration.

If you have downloaded DyRecs from the Internet you will need to extract the content of the .zip file to a directory of your choice. Then start “setup.exe”. Hint: In that version there is no included .net Framework 3.5 but it can be obtained under the following address:

<http://download.microsoft.com/download/6/0/f/60fc5854-3cb8-4892-b6db-bd4f42510f28/dotnetfx35.exe>

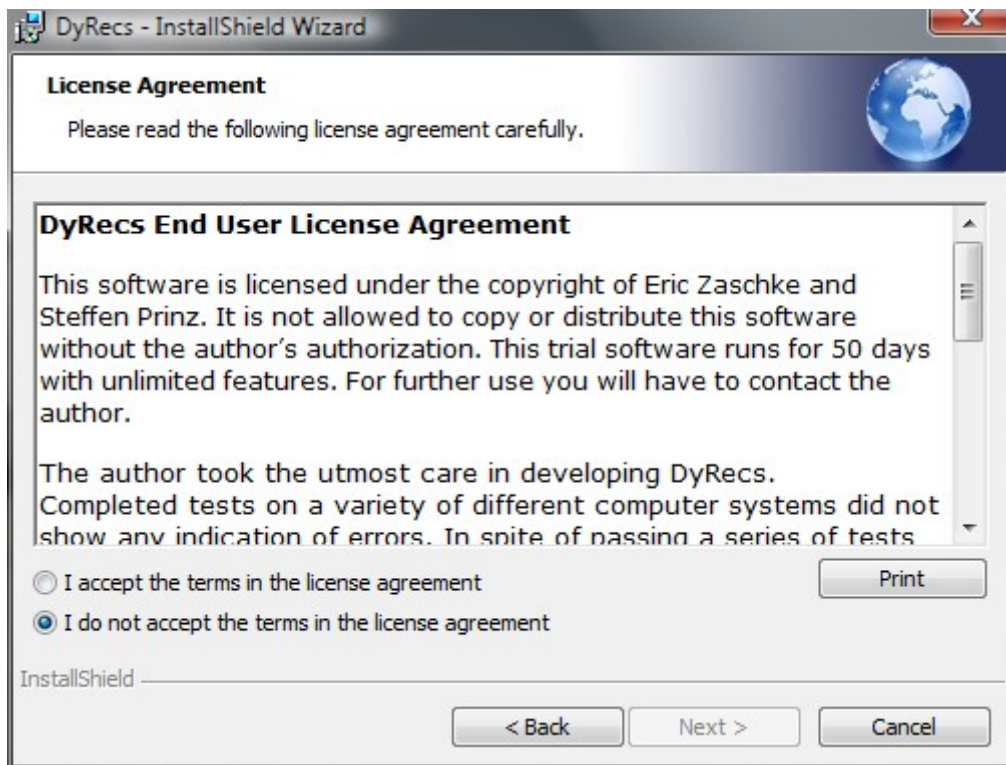
Please choose you language after Setup has been started. You can choose between German and English.



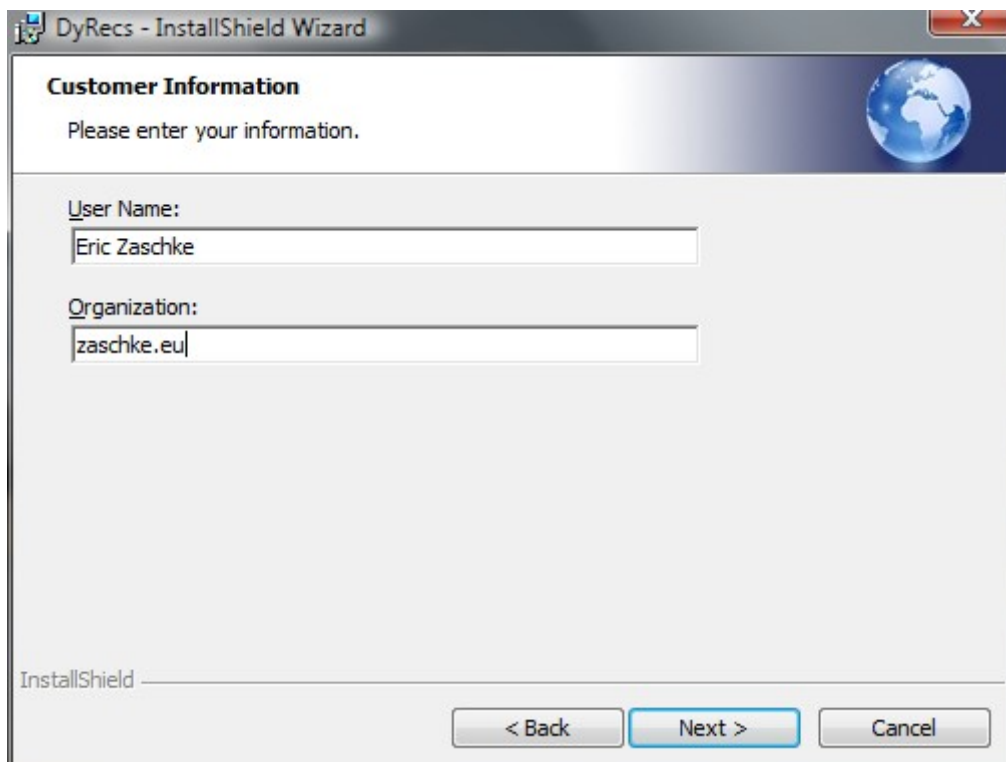
If you are running a system that is older than Windows Vista and you do not have .net Framework 3.5 installed the installer detects this and will start the setup for that component. Hint: This option is exclusively available if you are installing from the CD-ROM.

To be able to read the user manual and the documentation you will need to install Adobe Reader 8. This application can be found on the installation media.

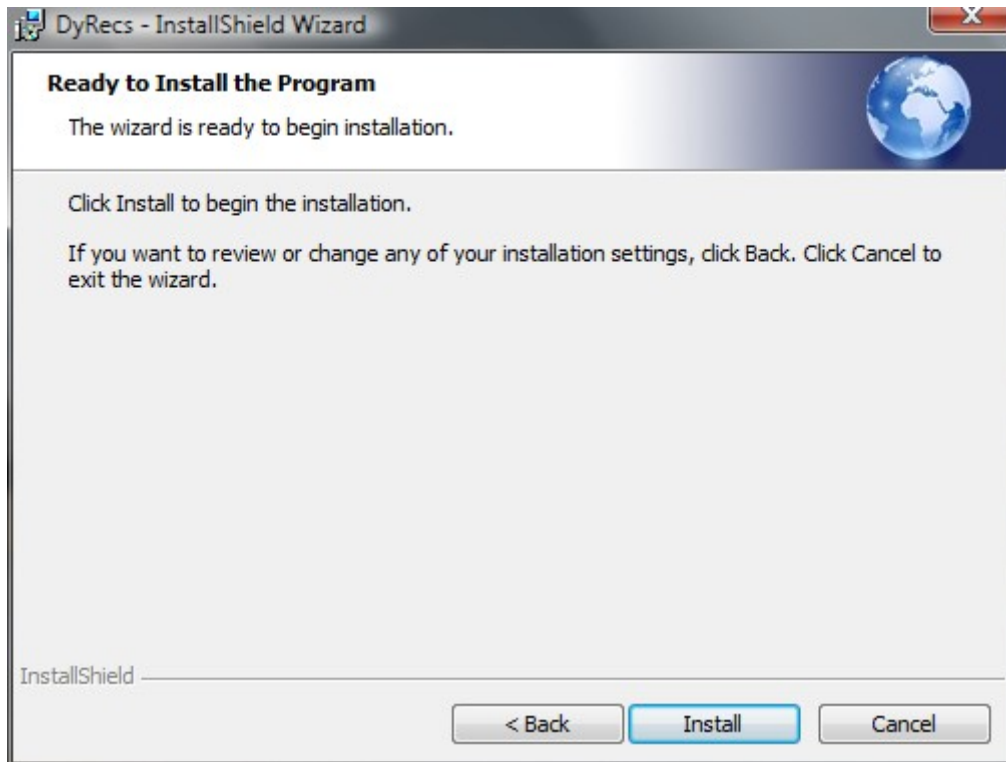
Please accept the license agreement and click on “Next”.



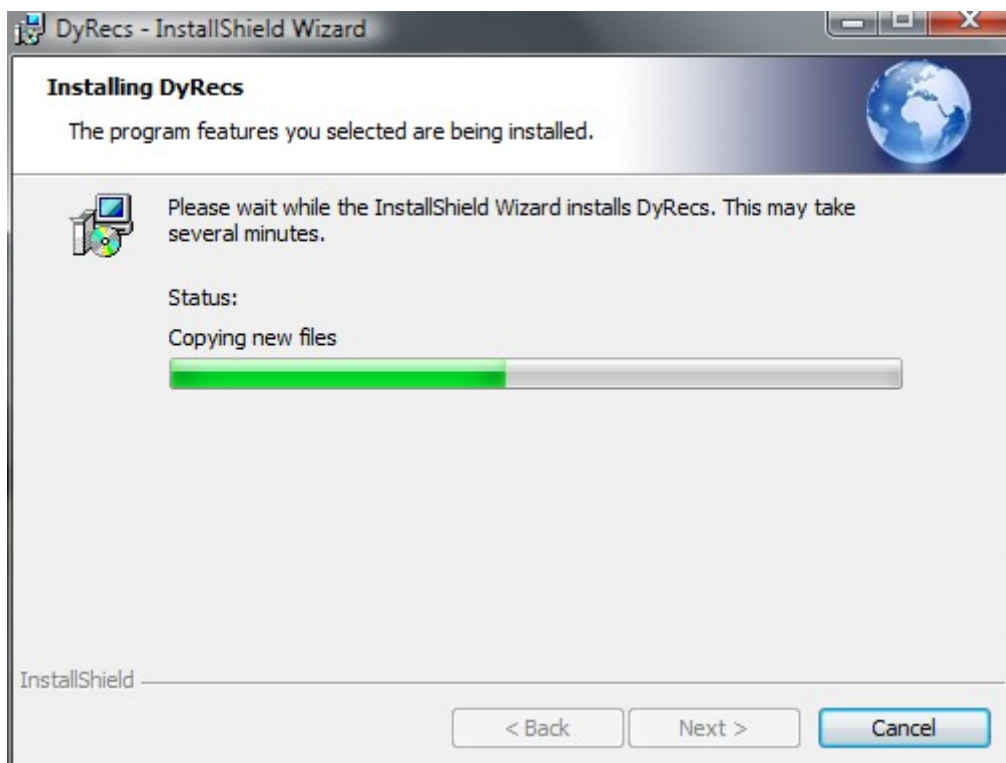
Enter the customer information in the following window and click “Next”.



Setup informs you that all required information is collected. The setup process starts by clicking the button “Install”.



The time to install the application varies and is depending on you system hardware.



Finally click on “Finish”. The Setup of Dyrecs has been completed successfully. At this point of time there is no restart required.

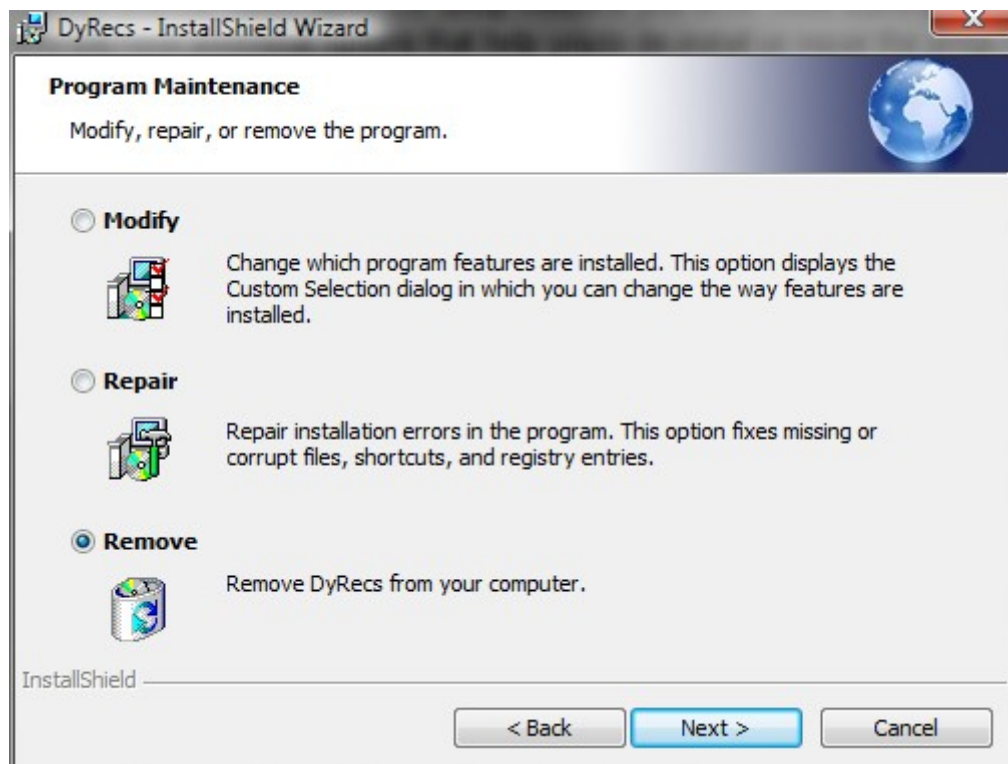


4 De-installation/Repair of the application

4.1 De-installation/Repair under Windows Vista

For a de-installation/repair of Dyrecs you will need to open the start menu by clicking the Windows button in your taskbar. Then select “Control Panel” and open “Programs and Features”. Now select DyRecs and click on “de-install”. Follow the instructions on the screen.

Alternatively you can insert again the setup media in you drive. After starting setup a second time you will have additional options that help you to de-install or repair the program.



4.2 De-installation/Repair under Windows XP/Server 2003

To de-install/repair DyRecs under Windows XP or Windows Server 2003 you will need to open the start menu by clicking the Start button in your taskbar. Then select “Control Panel” and open “Software”. Now select DyRecs and click on “de-install”. Follow the instructions on the screen.

Alternatively you can insert again the setup media in you drive. After starting setup a second time you will have additional options that help you to de-install or repair the program.



5 Program limitation

On the one hand limitations of the application are based on the minimum system requirements, which can be referred to in section 2 “System Requirements Specifications”.

On the other hand there are limitations while the program is running. These are mainly based on the hardware that is built into your computer. Important are CPU and size of the main memory.

The program can be adjusted to calculate a maximum of 1 Million values. In this process nearly 800 MB of main memory is used to perform the desired calculations. In case the RAM of your machine is too small a part of the program is using space of your hard drive either. But please note that this causes a slowdown of your system.

6 Product lifetime

The service period of DyRecs is limited to 10 years, as you can assume that a longer usage is little reasonable according to future modifications in hard and software platforms.

7 Considerations of incompatibilities

Currently there no known incompatibilities with the supported operating systems or any other software that might be installed on your machine.

8 Software validation

8.1 Introduction

This chapter defines and describes the validation process of the DyRecs software, including a testing strategy, requirements for the test run as well as the test environment.

The entire validation has to be performed twice in a productive environment and includes functional as well as compatibility tests.

8.2 Test environment

The current test environment consists of a notebook running Windows Vista Ultimate and using the following hardware:

- Intel Centrino Core 2 Duo T9500, 2,6 GHz
- 2 GB RAM
- nVidia GeForce 8400 GT
- 200 GB hard disk space

8.3 Validation tests

8.3.1 Test 1 – Installation of DyRecs and program execution

Result

The program will be installed and started without any errors.

Requirements

- As described in section 8.2
- Additionally you will need to have the DyRecs installation media handy

Test run

	Expected Result	Result	Deviations
Reading of installation media	No error	No error	None
Setup start	No error	No error	None
Program installation	No error	No error	None
Program start with desktop shortcut	No error	No error	None
Program start with start menu	No error	No error	None
Program start by direct file access	No error	No error	None

Evaluation

Installation and program start have been tested successfully.

8.3.2 Test 2 – Calculation

Result

A calculation with different input values will be performed error-free.

Requirements

- As described in section 8.2

Test run

	Expected Result	Result	Deviations
Entering input data	No error	No error	None
Entering values > 1000000	Correction to the value of 1000000	Correction to the value of 1000000	None
Entering letter in input field	Input denied	Input denied	None
Execute calculation (value table)	No error	No error	None
Execute calculation (diagram)	No error	No error	None
Execute calculation with invalid values	No error	No error	None
Calculation with 1000000 values	Result in less than 10 minutes	Result in less than 4 minutes	None

Evaluation

All calculations have been performed successfully. Wrong inputs have been corrected or have been denied. Calculations with invalid values have been intercepted. The program runs stable at any time.

8.3.3 Test 3 – Extra features

Result

All extra features can be used error-free.

Requirements

- As described in section 8.2

Test run

	Expected Result	Result	Deviations
Minimize to Tray	No error	No error	None
Reopen by double-click	No error	No error	None
Reopen by context menu	No error	No error	None
Exit program	No error	No error	None
Reset all fields	No error	No error	None
View circuit diagram	No error	No error	None
Switch language	No error	No error	None
Open user manual	No error	No error	None
Open technical documenta- tion	No error	No error	None
Show program information	No error	No error	None

Evaluation

All extra features are running error-free.

8.3.4 Test 4 – De-installation

Result

The application will be removed without any trace.

Requirements

- As described in section 8.2

Test run

	Expected Result	Result	Deviations
Starting the de-installer	No error	No error	None
De-instaling DyRecs	No error	No error	None
Removal of all program files including folders	No error	No error	None

Evaluation

The application has been completely removed.

9 Legal note

An external component has been used for the graphical presentation of the calculated values. The usage of this component is allowed free of charge under the GNU license.

According to the above mentioned license the author points out explicitly that there have been not changes to the source code of this component.

The Name of the used component is “ZedGraph”. Please refer to the following website to get more detailed information.

<http://sourceforge.net/projects/zedgraph/>