

Programmable Speed Switch Monitor

FOR 800 SERIES, 1000 SERIES AND GATEWAY

MANUAL / USERS GUIDE

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Contents

1 INTRODUCTION	4
1.1 ABOUT PROGRAMMABLE SPEED SWITCH MONITOR	4
1.2 ABOUT 800 SERIES	4
1.3 ABOUT 1000 SERIES	4
1.4 ABOUT ENCODER GATEWAY	5
1.5 TECHNICAL AND COMMERCIAL SUPPORT	5
2 INSTALLING THE SOFTWARE	6
2.1 DOWNLOAD AND INSTALL THE SOFTWARE	6
3 FUNCTIONAL DESCRIPTION	7
3.1 DIGITAL LED	7
3.2 CURRENT SPEED	9
3.3 RELAYS	10
3.4 CURRENT STATUS	11
3.5 FUNCTION	12
3.6 SWITCHING SPEED	14
3.7 DIRECTION	17
3.8 RESOLUTION	18
3.9 EDIT, SAVE, CANCEL	19
3.10 TOOL MENU	21
3.11 CONFIGURATION	22
3.12 REMOVE PASSWORD	22
3.13 HELP	23
3.14 ABOUT ENCODER	24
4 PASSWORD PROTECTION	25
4.1 ENABLE PASSWORD PROTECTION	28
4.2 PASSWORD WITH RECOVERY PROTECTION	30
4.3 PASSWORD RECOVERY	32
4.4 PASSWORD WITHOUT RECOVERY PROTECTION	35
5 APPENDIX	40
5.1 CONNECTING THE DEVICES FOR PROGRAMMING THE SPEED SWITCH SETTINGS	40
5.2 ACCESSORIES	40
6 REVISION HISTORY	41

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1 Introduction

1.1 About Programmable Speed Switch Monitor

Leine Linde's Programmable Speed Switch Monitor is a speed detection system that can be integrated in an encoder or a gateway together with a separate input from an incremental encoder. It features four different relay switches which can be manually programmed for optional switching speeds. One of the relays can be set to detect any functional errors in the Speed Switch unit.

The Speed Switch unit is programmed with the help of the PRSS Monitor software. Connection for programming is made via a cable with USB to Type A mini b-plug.

The relays may be connected to maximum 30 Vdc and 2 A.

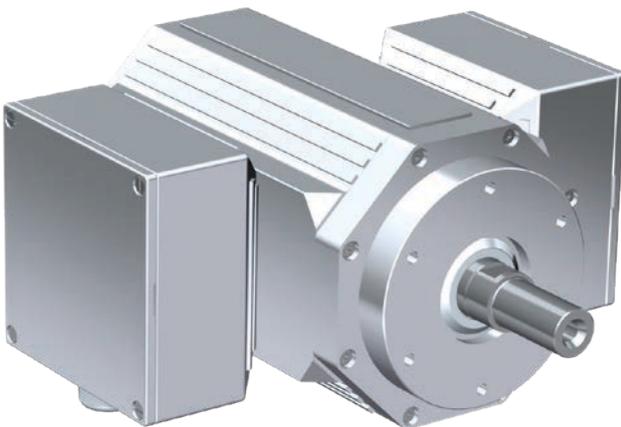
1.2 About 800 series



The 800 is an extreme robust encoder series which comes in various mechanical solutions, hollow shaft or solid shaft.

With the programmable speed switch integrated into the encoder and accessed by a mini-USB through an opening in the rear cover, it is easy configurable when installed or before installation.

1.3 About 1000 series



The 1000-series is designed to meet exceptional requirements in real heavy duty application.

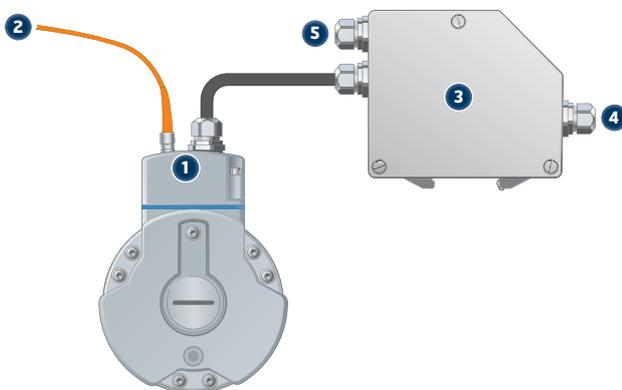
With sturdy bearings and enclosure the 1000-series encoders achieve extraordinary durability towards mechanical stress, shock and vibrations as well as dusty environments with high temperatures.

1.4 About encoder gateway



The advantages of the gateway concept is that it allows the use of small and very robust incremental encoders, which make the encoder gateway solution suitable in applications where there are space or mechanic limitations.

The programmable speed switch encoder gateway is compatible with 6 channels HTL or HCHTL encoders within the 500, 700 and 800 series (except for FSI 800) but is typically combined with an encoder with two separate outputs, one for feedback to the motor drive system, and the other connected to the gateway itself to control whether speed reaches the critical levels.



1. Dual encoder with two galvanically insulated outputs.
2. Incremental signal for drive system
3. CRG Speed Switch
4. Relay output for speed switch or function alarm
5. Power supply

1.5 Technical and commercial support

Leine Linde is represented by subsidiaries in many countries around the world. In addition, there are many services agencies and distributors located worldwide ready to reply to commercial enquires or technical support.

For more contact information, please visit our web site or contact Leine Linde in Strängnäs, Sweden.

Leine & Linde AB

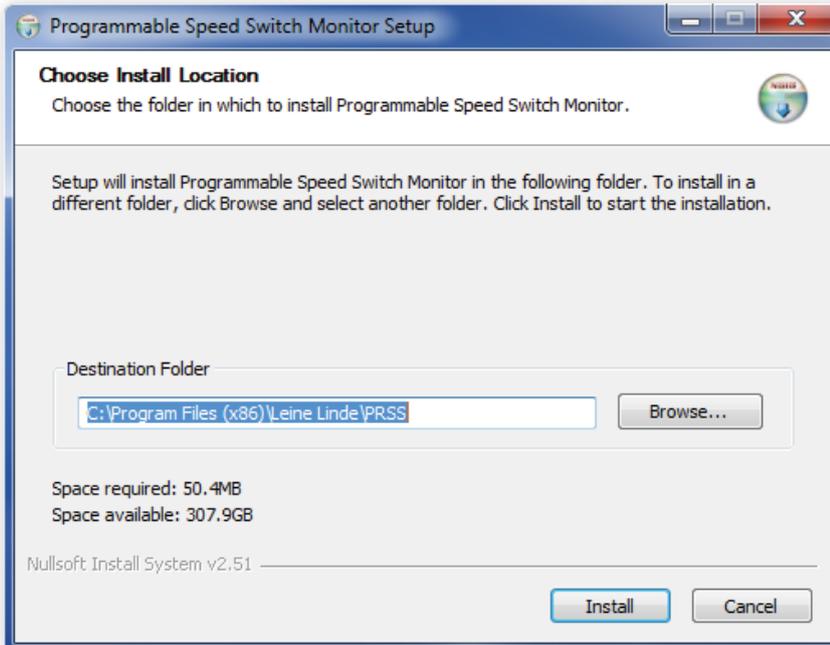
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Web: www.leinelinde.com

2 Installing the software

2.1 Download and install the software

System requirements: Windows Vista, XP, 7, 8 or 10.

Download the programmable Speed Switch PC-software from the website: www.leinelinde.com.



Follow the instructions given to install the PC-software.

To be able to identify the encoder on the PC-software an FTDI driver might need to be installed. This can be found in the Leine Linde folder: Program Files (x86)/Leine Linde/PRSS (CDM21216_Setup).

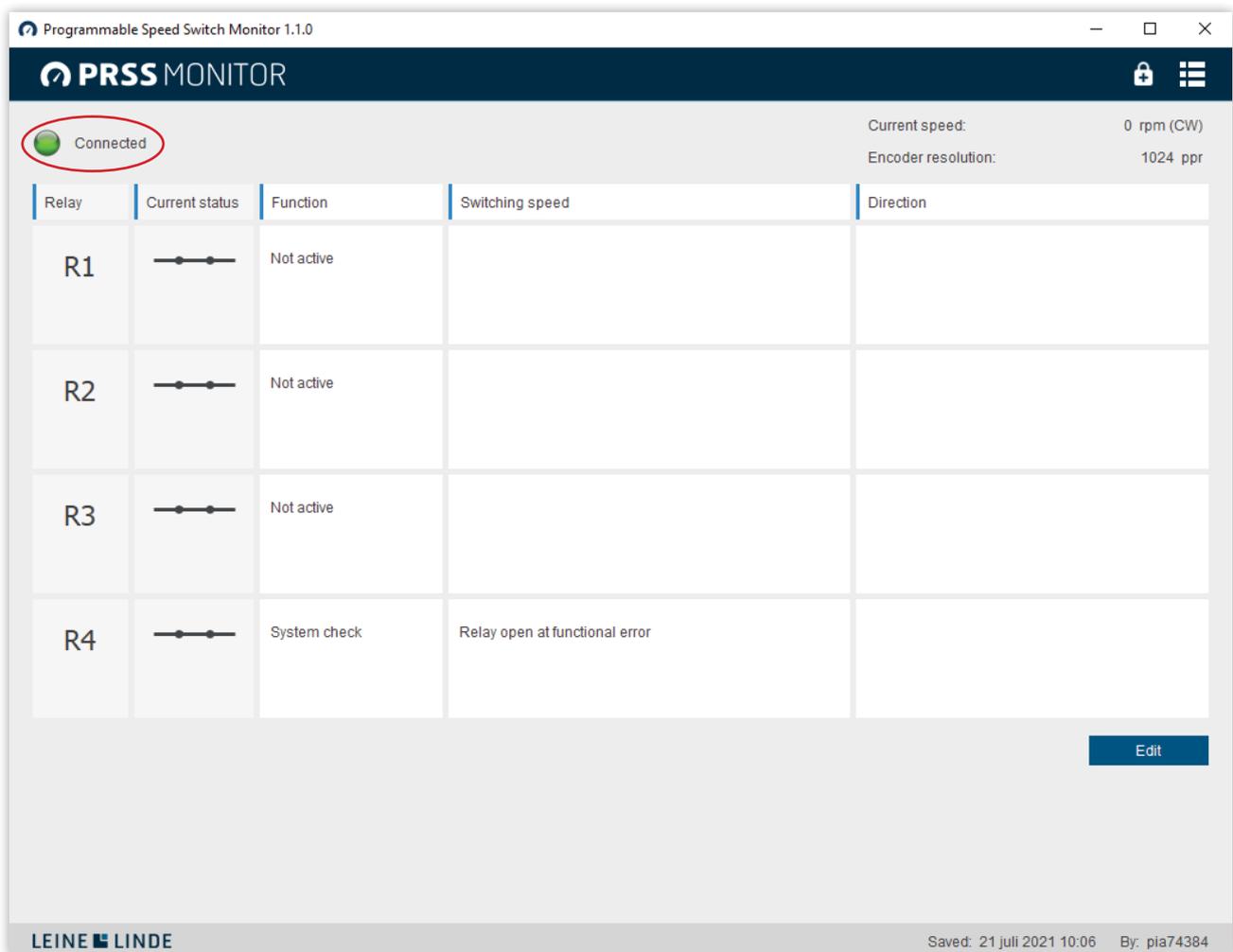
3 Functional description

A description of each available feature in the Speed Switch unit is made in this chapter. The title of each section in the text below refers to a graphical element in the PC software.

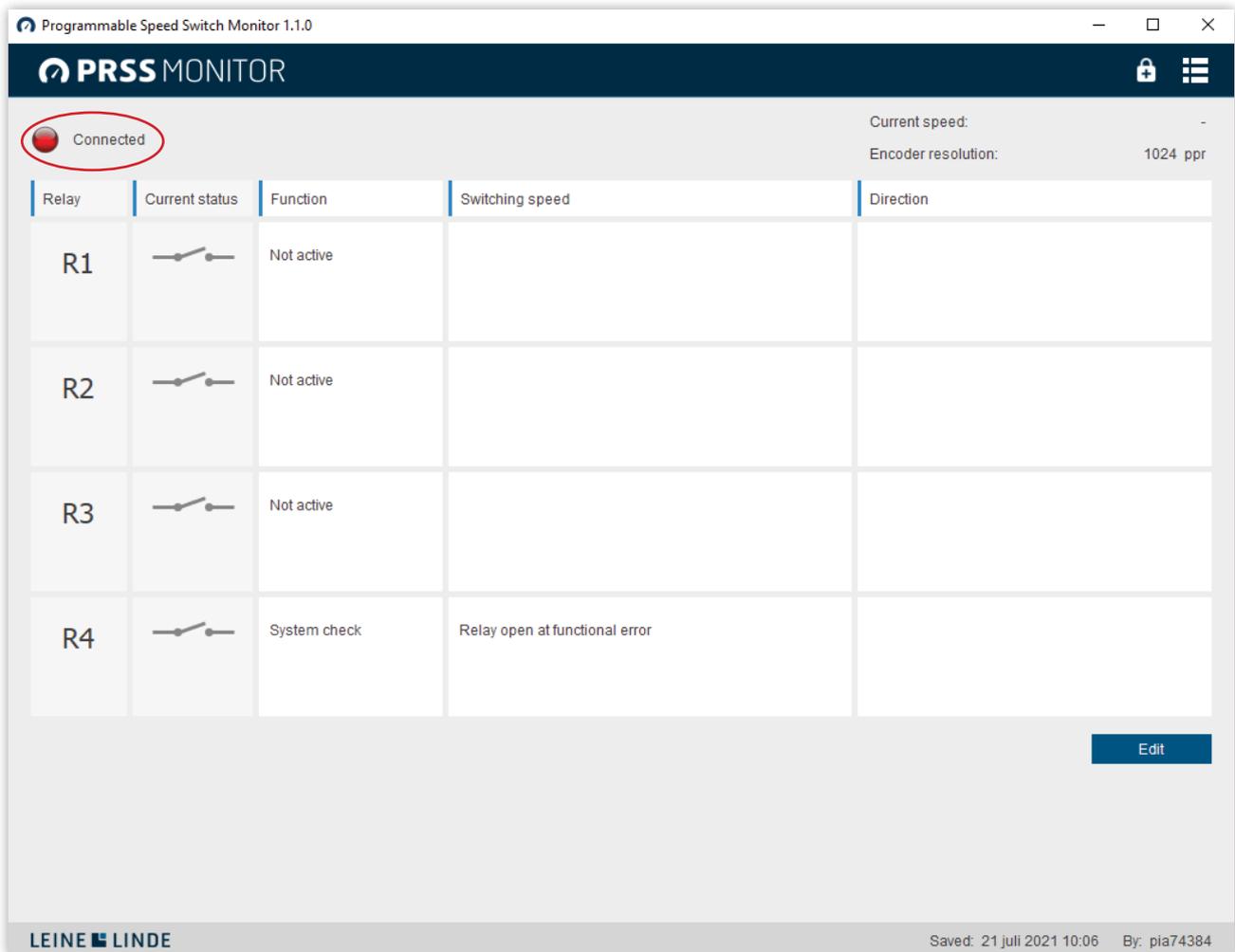
3.1 Digital LED

In the top left corner of the PC software a digital LED indicates the status of the Speed Switch unit. A green LED indicates that the Speed Switch unit is powered and fully operational. A red LED indicates an error or that only the programming mode is active. If the LED is grey, the unit is not connected to the PC or no serial port has been chosen.

For the Speed Switch function to be operational (green LED) the unit needs to be powered via an external power source of 9-30 Vdc.



For using the device in programming mode (red LED) only, it is enough to power the unit via the USB connection. Note that in the programming mode the unit is not able to detect the current speed or operate the switches.



A red LED may also indicate that a functional error is detected in the speed switch unit. If R4 is set to alarm mode the relay will open and an error description will be given on the R4 row.

3.2 Current speed

The value in the top right corner indicates the current speed and direction of rotation of the shaft. This can be used as a help to test settings when configuring the unit. The shaft speed is expressed in revolutions per minute (rpm) and the direction of rotation as clockwise (CW) or counter-clockwise (CCW) seen from encoder shaft end.

The encoder resolution is shown below the current speed. In case of use of a separate Speed Switch gateway, this field is empty by default. Enter the encoder resolution value by using edit mode (see chapter 3.8-3.9).

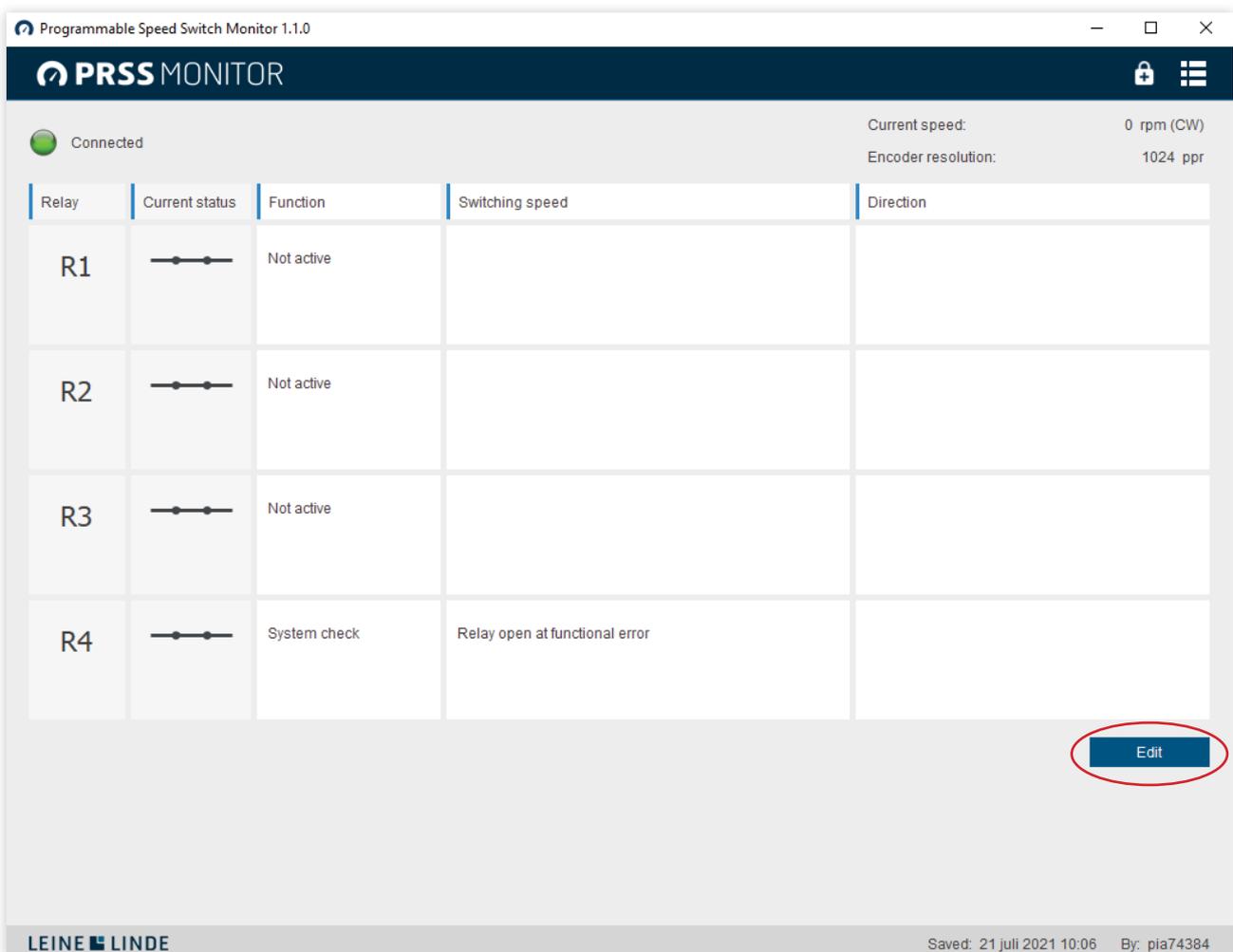
The screenshot shows the PRSS MONITOR software interface. At the top, it displays 'Connected' and 'Current speed: 38 rpm (CCW)'. Below this, the 'Encoder resolution' is set to '1024 ppr'. The main part of the interface is a table with four columns: Relay, Current status, Function, Switching speed, and Direction. The table lists four relays (R1, R2, R3, R4) with their respective functions and switching speeds. An 'Edit' button is located at the bottom right of the table area. The footer shows 'LEINE LINDE' and 'Saved: 21 juli 2021 12:56 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		Overspeed	Relay open at > 75 rpm	CW/CCW
R2		Underspeed	Relay open at < 100 rpm	CW/CCW
R3		Overspeed	Relay open at > 25 rpm	CW/CCW
R4		System check	Relay open at functional error	

3.3 Relays

The Speed Switch unit has four output relays R1-R4, each configurable with its own separate settings. By clicking Edit the switching speed can be manually programmed to switch state at a desired rotational speed and direction of rotation.

The relay R4 is by default set to alarm mode and will then open in case of functional error. To use R4 as relay for switching speed, fill in the desired values and settings and press save. To again use the R4 as alarm relay, press deactivate button and press save.

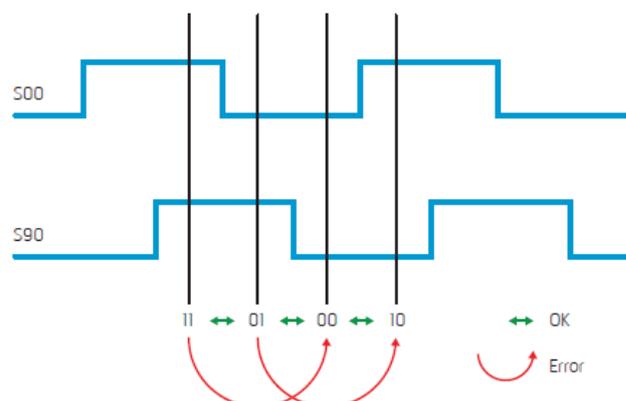


Relay 4 in alarm mode will detect if the relays don't open or close as they should, or if there should be a state transition fault (internal error).

State transition fault

The change of state at channel S00 and S90+ is normally changed in accordance with the green arrows (see image). The alarm relay is activated if the state is change in accordance with the red arrows.

Cause: This fault can occur if the encoder is rotated too fast, if the optics is damaged or if the bearings are worn out.



3.4 Current status

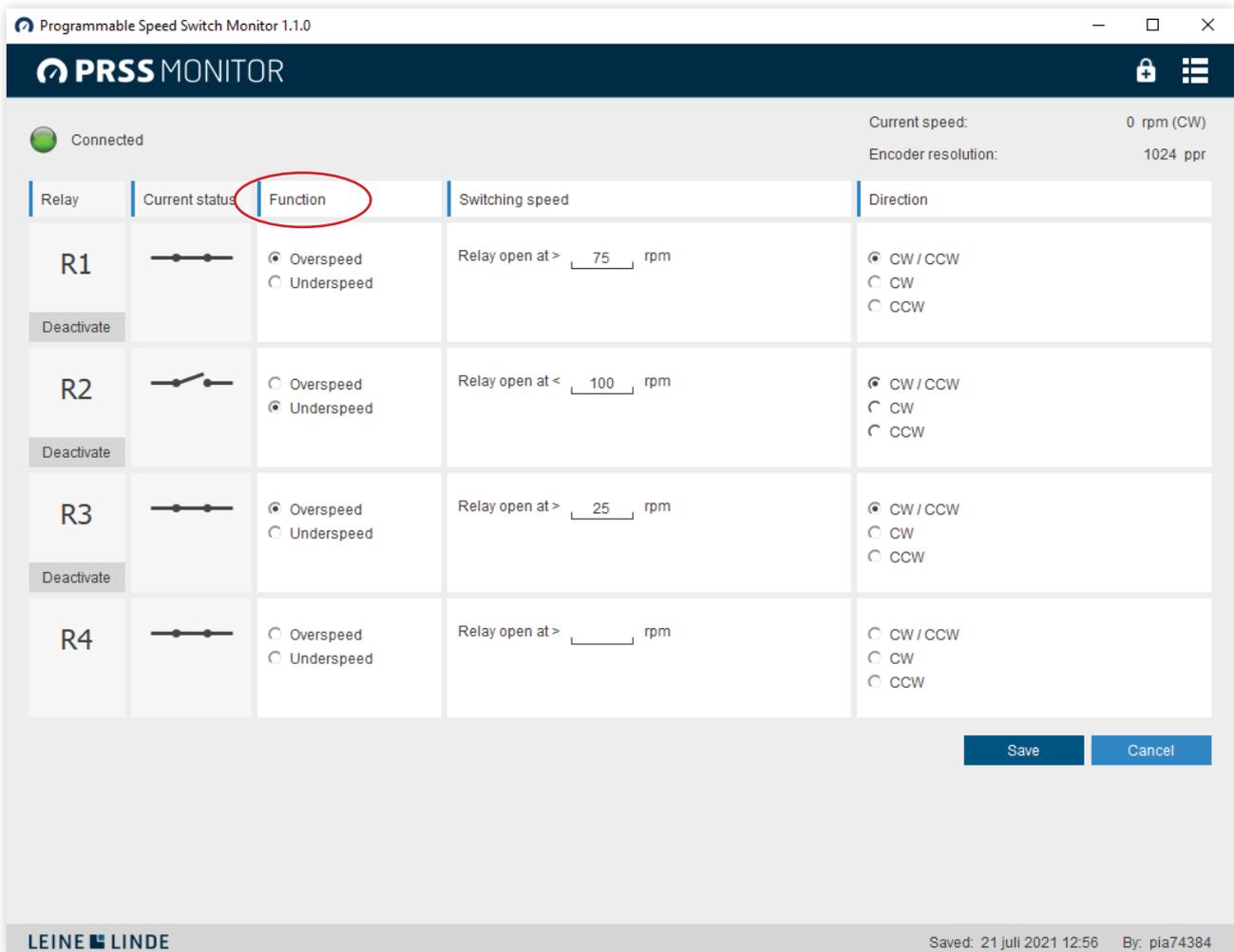
The Current status column shows the current state, open or closed, for each of the four relays. The symbols will switch state when the relays do, and can therefore be used for verification of the settings.

The screenshot shows the 'PRSS MONITOR' software interface. At the top, it indicates 'Connected' and shows 'Current speed: 0 rpm (CW)' and 'Encoder resolution: 1024 ppr'. Below this is a table with columns: Relay, Current status, Function, Switching speed, and Direction. The 'Current status' column is circled in red. Each relay row includes a 'Deactivate' button. At the bottom right, there are 'Save' and 'Cancel' buttons. The footer shows 'LEINE LINDE' and 'Saved: 21 juli 2021 12:56 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>75</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R2		<input type="radio"/> Overspeed <input checked="" type="radio"/> Underspeed	Relay open at < <u>100</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R3		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>25</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R4		<input type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u> </u> rpm	<input type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW

3.5 Function

Relays R1-R4 can be configured with overspeed or underspeed function.



The overspeed option means the relay will be closed at low speeds and open at high. It switches at rising speed and switches back when the speed is decreased to a level -10% below the switching speed.

The underspeed option means the relay will be closed at high speeds and open at low. It switches at falling speed and switches back when the speed is increased to a level +10% above the switching speed.

Relay R4 can alternatively be set into alarm mode (default) and will then monitor the function of the Speed Switch unit. It is normally closed and will open if a functional error is detected. An error description will be given on the R4 row.

Error descriptions

- R1 - do not open
- R1 - do not close
- R2 - do not open
- R2 - do not close
- R3 - do not open
- R3 - do not close
- Internal error

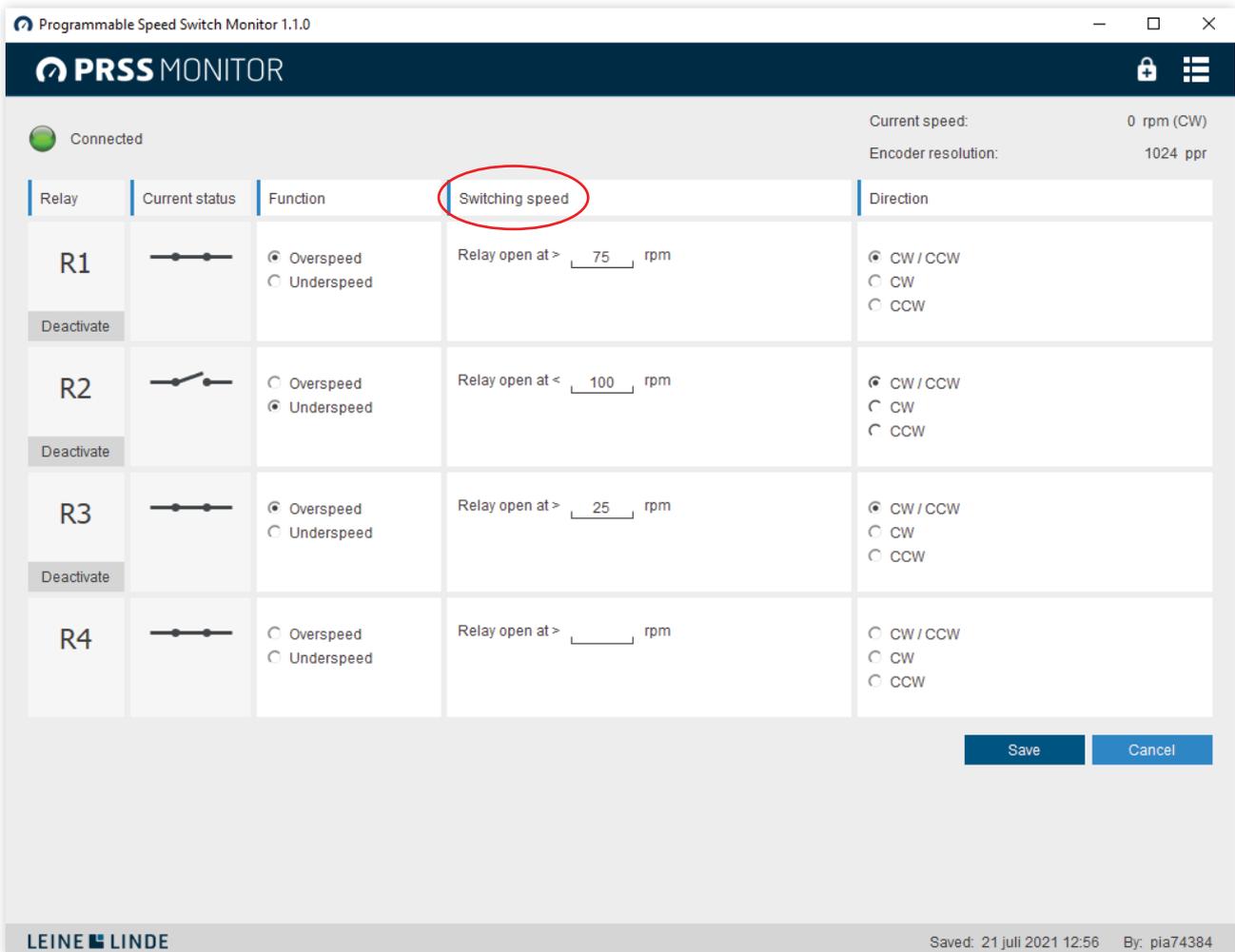
If the Speed Switch unit is not powered, the relays stay open, independently of the settings. Therefore, if the relays do not close when expected to, the power source is a possible fault cause.

The screenshot displays the 'PRSS MONITOR' software interface. At the top, it shows 'Connected' status and 'Current speed: -' and 'Encoder resolution: 1024 ppr'. Below this is a table with columns: Relay, Current status, Function, Switching speed, and Direction. The table lists four relays (R1, R2, R3, R4) with their respective settings. A red oval highlights the 'Current status' column, where all relays are shown as open (indicated by a switch icon with the lever up). Below the table are 'Save' and 'Cancel' buttons. The footer includes the 'LEINE LINDE' logo and the text 'Saved: 21 juli 2021 12:56 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>75</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R2		<input type="radio"/> Overspeed <input checked="" type="radio"/> Underspeed	Relay open at < <u>100</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R3		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>25</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R4		<input type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u> </u> rpm	<input type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW

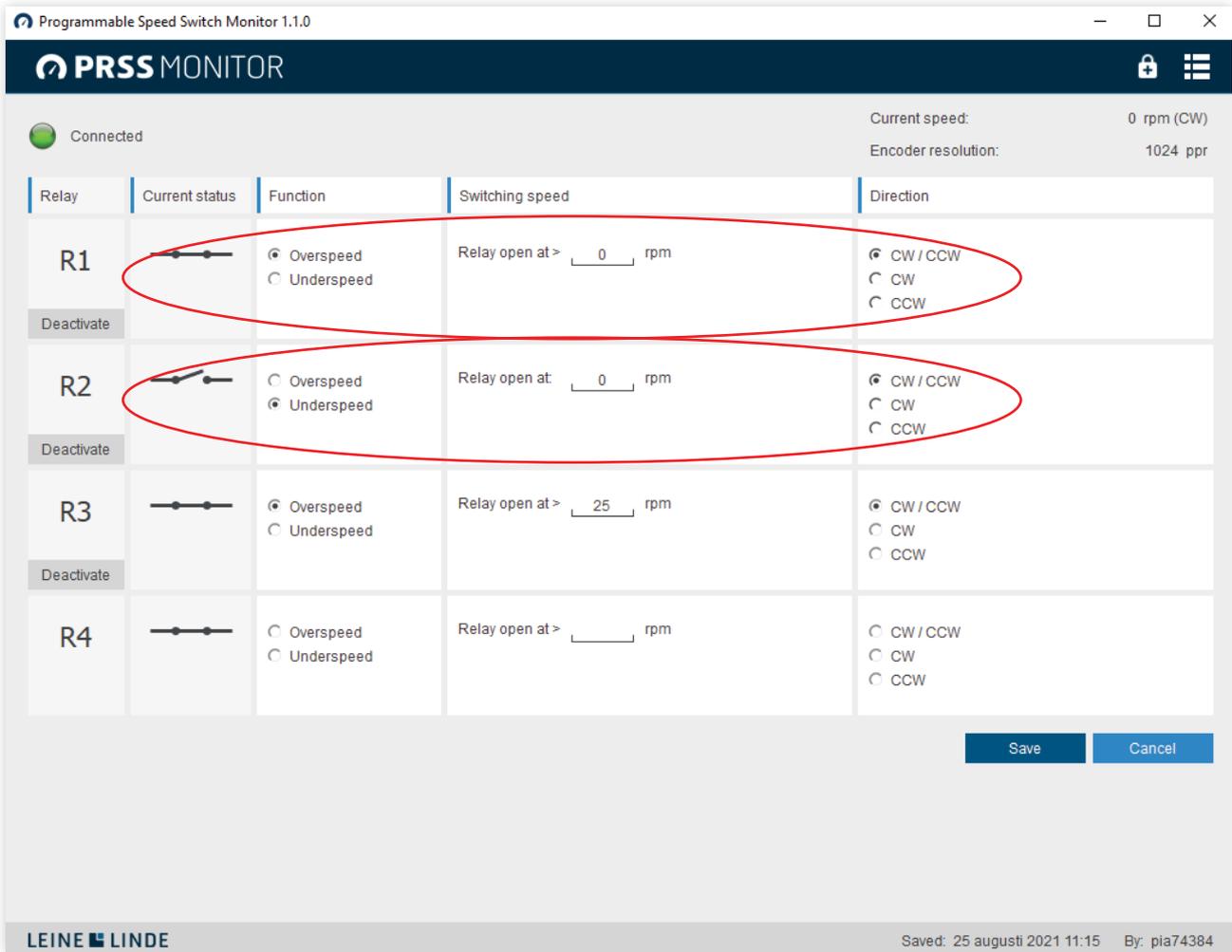
3.6 Switching speed

In the Switching speed boxes, the desired switching levels are configured. Any integer between 0 and 6000 rpm can be set. When using the overspeed setting, the relay will open when the current speed rises above the selected level (>). When using the underspeed setting, the relay will open when it falls below (<).



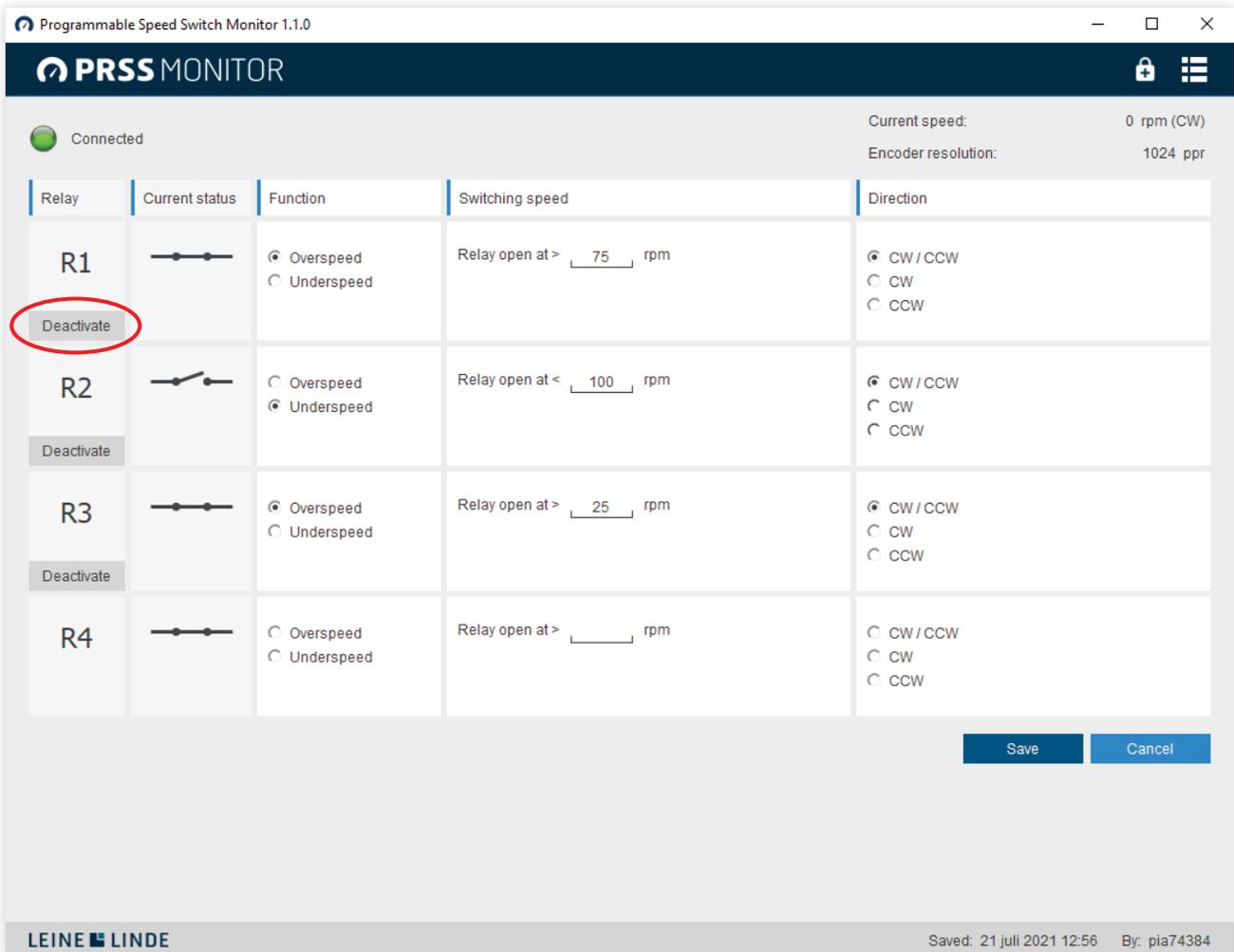
To be able to ignore very short speed peaks the averaging interval time can be set to a value 50 – 1000 ms, see chapter 3.11.

If the switching speed is set to 0 rpm, a standstill indication is created. The relay will be closed at 0 rpm and open at movement (if combined with the overspeed setting), or closed at movement and open at standstill 0 rpm (if combined with the underspeed setting).



Note: The switching speed function is not active until the user has set the values and saved the changes.

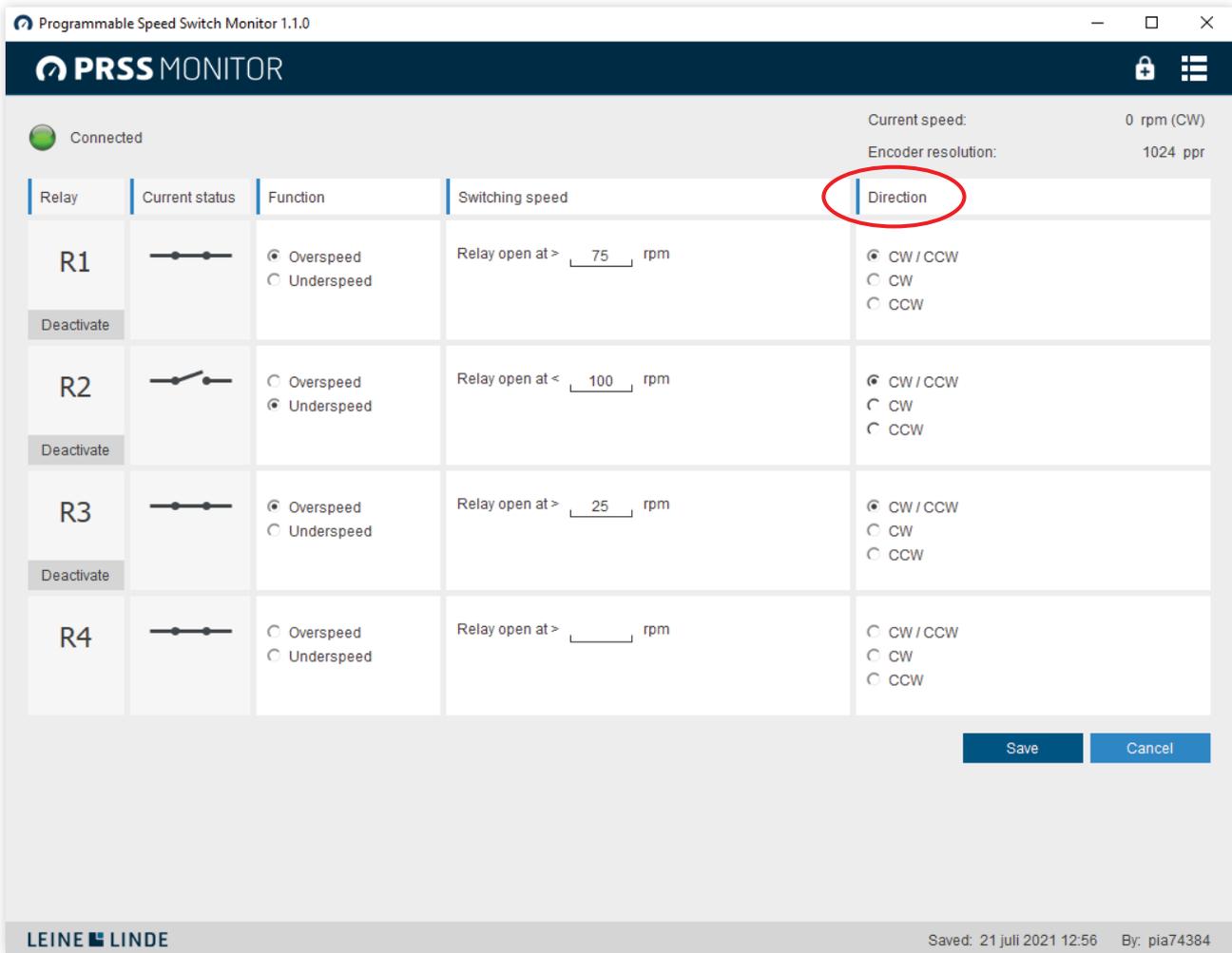
To deactivate a relay, click deactivate button.



3.7 Direction

The Direction option configures how the switching speed should be activated, as seen from the shaft end. With option CW/CCW switching speed is activated independently of the shaft rotation direction. With option CW it is activated only at clockwise rotation, and with option CCW only at counter-clockwise rotation.

When choosing underspeed, the direction is automatically always set to both directions.



Note: The switching speed function is not active until the user has set the direction and saved the changes.

3.8 Resolution

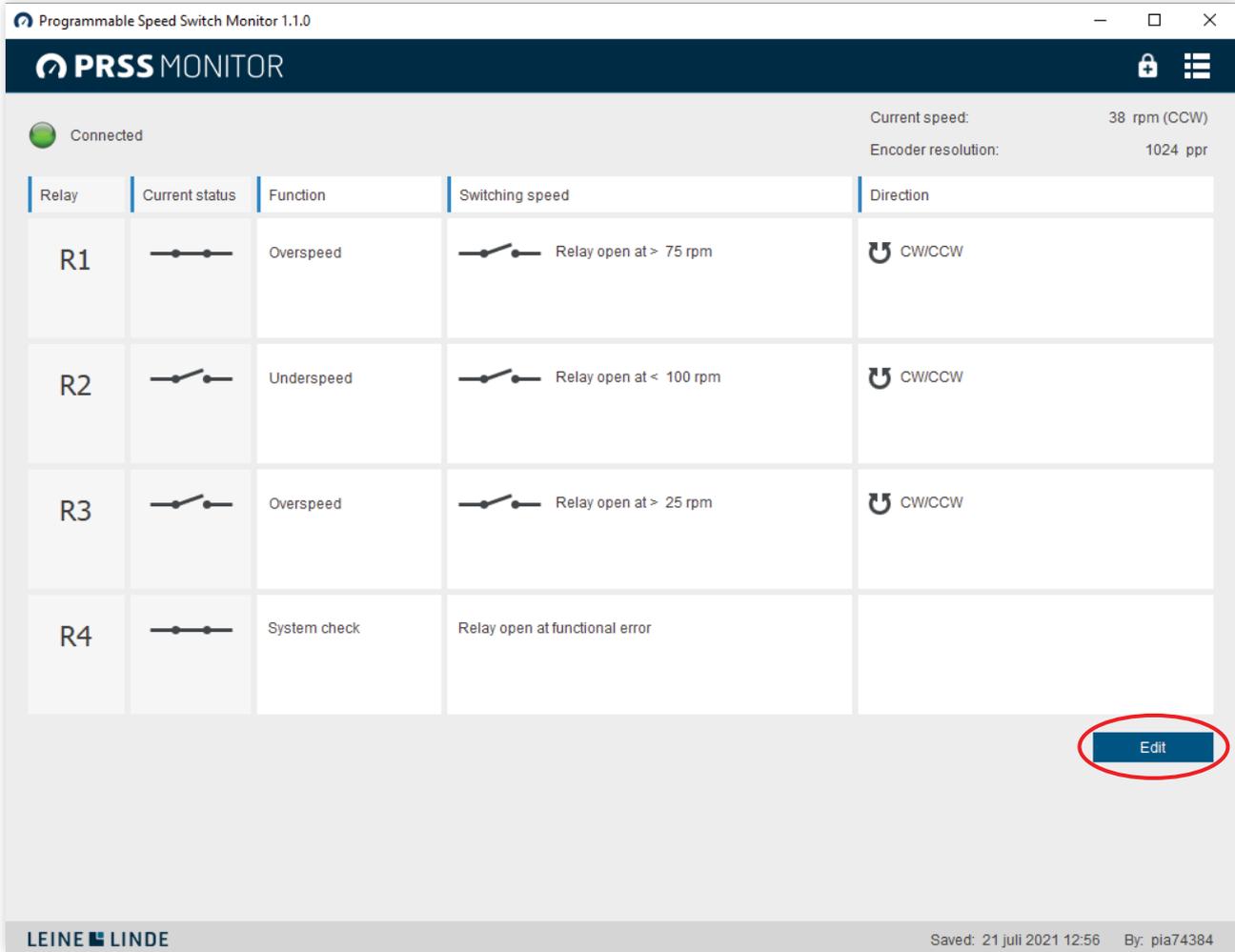
When programming an encoder with integrated Speed Switch, the resolution is automatically shown in the resolution field. When programming a gateway, the resolution of the encoder in use must be entered in this field.

The screenshot shows the 'Programmable Speed Switch Monitor 1.1.0' application window. The interface includes a status bar at the top with 'Connected' and 'Current speed: 0 rpm (CW)'. The 'Encoder resolution' is set to '1024 ppr', which is circled in red. Below this is a table with columns for Relay, Current status, Function, Switching speed, and Direction. Four relays (R1, R2, R3, R4) are listed, each with a 'Deactivate' button and specific speed settings. At the bottom right, there are 'Save' and 'Cancel' buttons. The footer contains the 'LEINE LINDE' logo and the text 'Saved: 21 juli 2021 12:56 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>75</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R2		<input type="radio"/> Overspeed <input checked="" type="radio"/> Underspeed	Relay open at < <u>100</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R3		<input checked="" type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u>25</u> rpm	<input checked="" type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW
R4		<input type="radio"/> Overspeed <input type="radio"/> Underspeed	Relay open at > <u> </u> rpm	<input type="radio"/> CW / CCW <input type="radio"/> CW <input type="radio"/> CCW

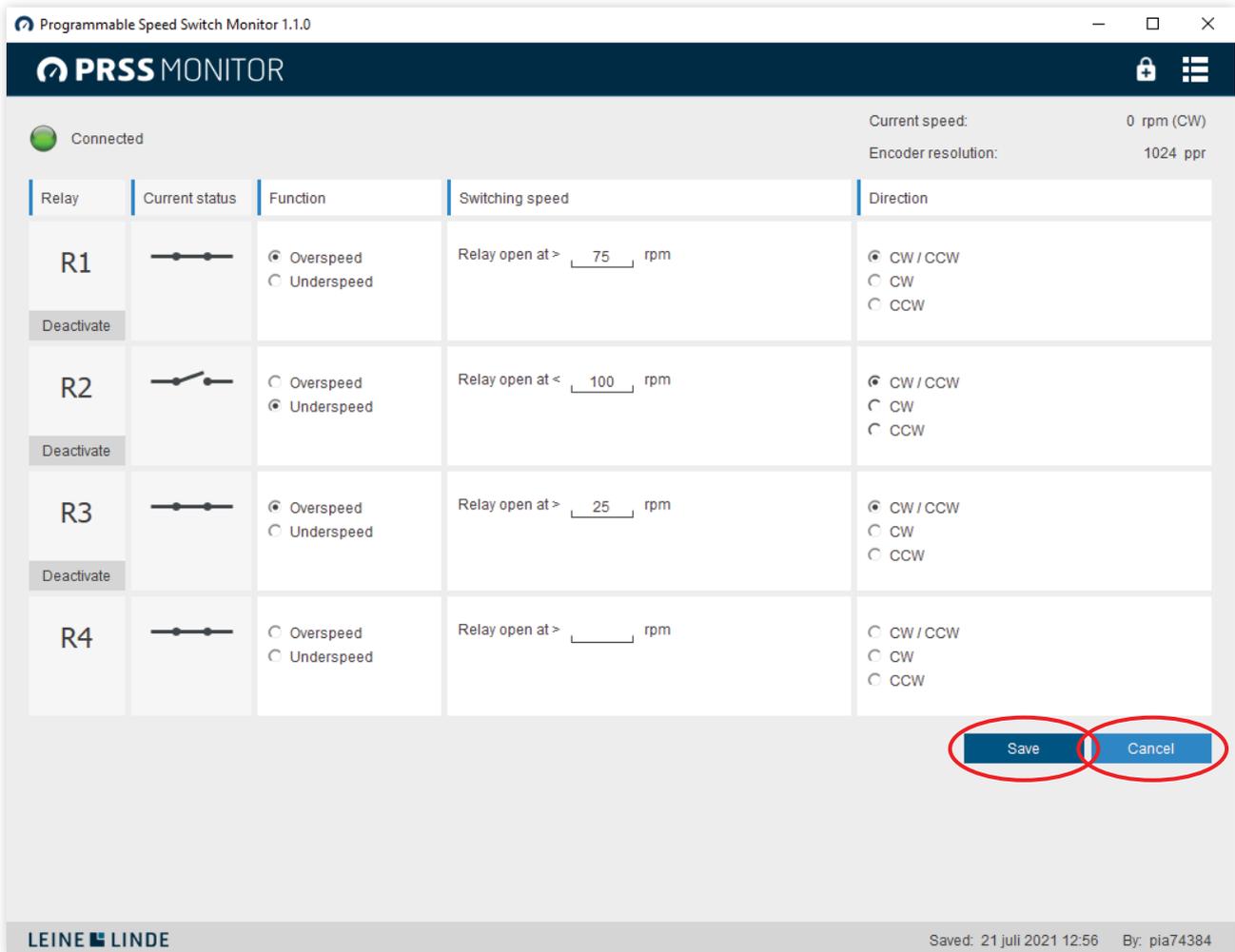
3.9 Edit, Save, Cancel

The starting view of the program provides an overview of the active settings. To configure the settings click Edit to enter the programming mode.



After editing, click Save in order to activate the changes and exit the programming mode. Click Cancel to exit the programming mode without saving changes.

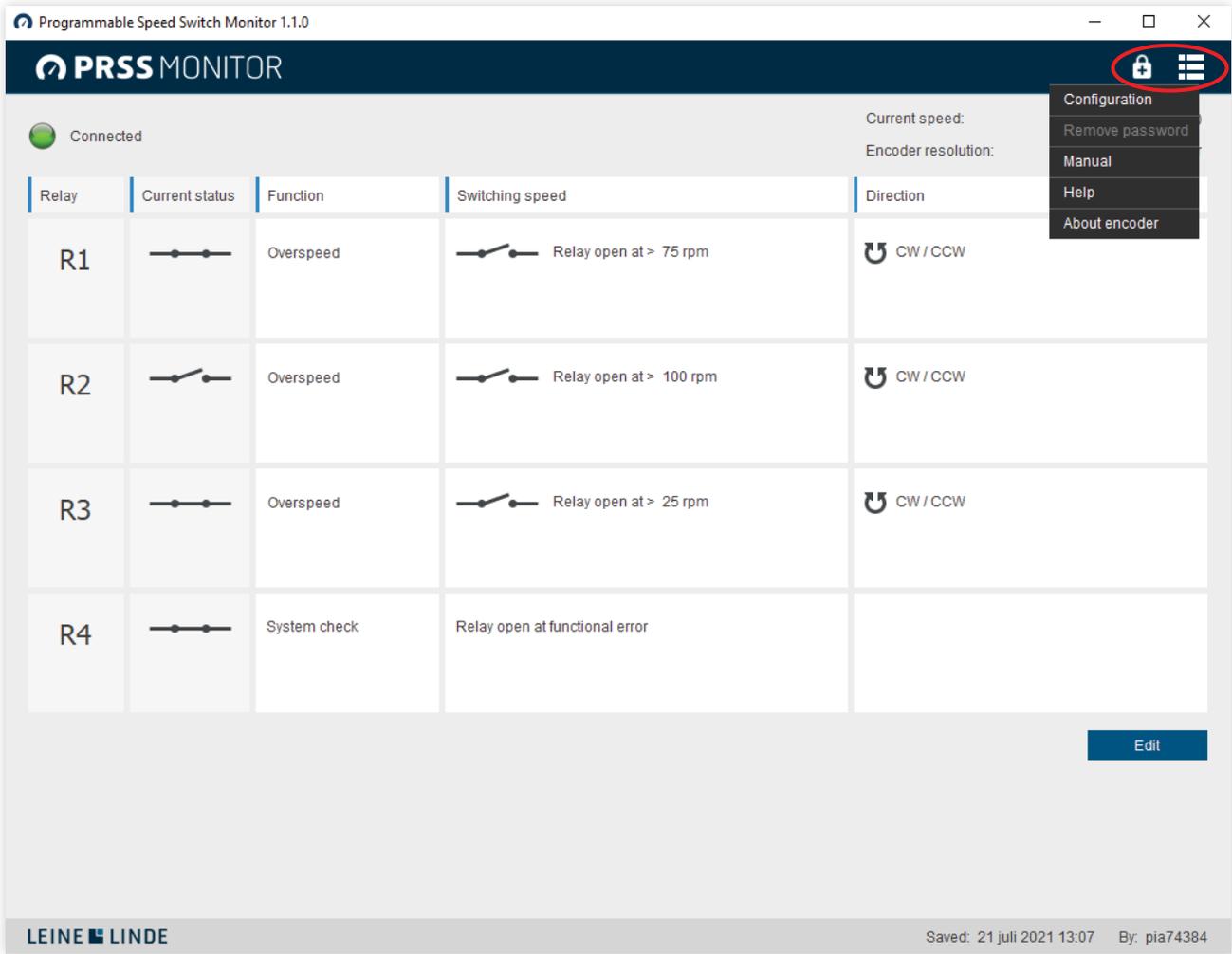
In the bottom right corner, the date and time for when the file was last saved is shown, as well as by which user (the computer user login) it was saved.



3.10 Tool menu

In the top right corner there is a tool menu. Click the icon and you will have five choices:

- Configuration
- Remove password
- Manual
- Help
- About encoder

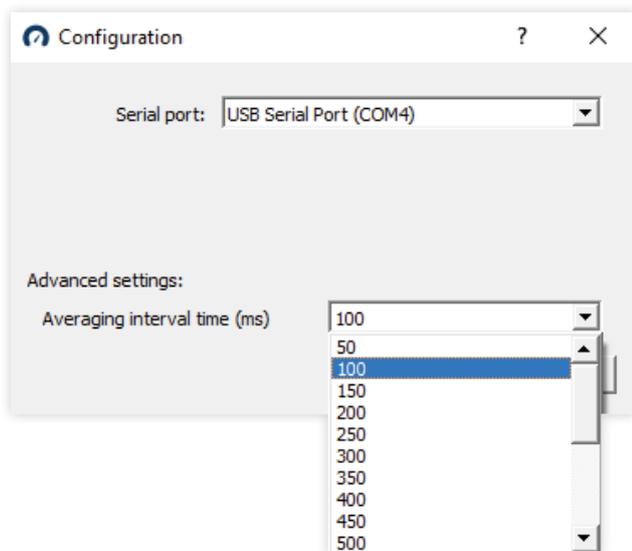


3.11 Configuration

Click Configuration to change the preferred USB port of the computer.

The list is only showing ports where there supposedly is an encoder connected. Other ports are filtered away from the list.

Averaging interval time may be set to avoid very short speed peaks. The value can be set 50 – 1000 ms in steps of 50 ms. Default setting is 100 ms.

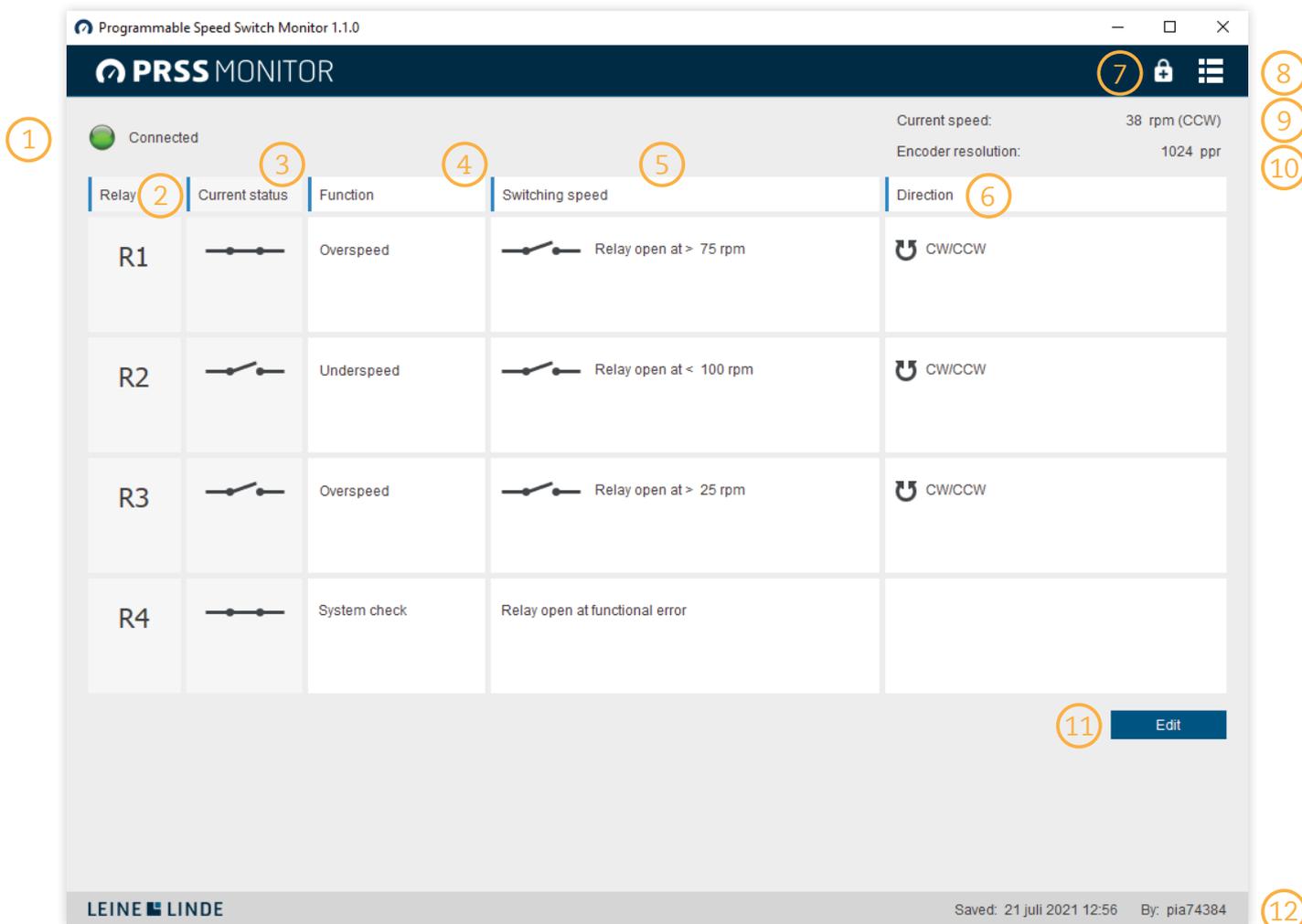


3.12 Remove password

See chapter 4.2.

3.13 Help

Click Help to get a quick help guide.



- 1 Green led - Unit powered and fully operational.
Red led - Error or programming mode.
Grey led - Serial port missing and/or USB cable not connected to computer.

- 2 An overview of the relays.

- 3 Current status of the relay, open or closed.

- 4 The function of the relay, overspeed, underspeed or system check.

- 5 The speed limit that is set to switch the status of the relay

- 6 The direction, along with the speed limit, that will switch the status of the relay. Clockwise rotation (CW), counter clockwise rotation (CCW) or both (CW/CCW).

- 7 Set password, lock/unlock unit

- 8 Tool menu. Access to Set serial port, Manual and Help.

- 9 The current speed and rotation direction.

- 10 The resolution of the encoder.

- 11 Click Edit to enter the programming mode.

- 12 The information in the footer shows when the configuration was last saved and by whom.

3.14 About encoder

Click About encoder to see present firmware in encoder

The screenshot shows the PRSS MONITOR web interface. At the top, it displays 'Connected' and 'Current speed: 0 rpm (CW)'. Below this is a table with columns: Relay, Current status, Function, Switching speed, and Direction. The table lists four relays: R1 (Overspeed, Relay open at > 75 rpm), R2 (Underspeed, Relay open at < 100 rpm), R3 (Overspeed), and R4 (System check, Relay open at functional error). An 'About Encoder' dialog box is open over the R2 row, showing 'MCU version: 1118774-05' and 'FPGA version: 1125461-03'. The interface also includes an 'Edit' button and a footer with 'LEINE LINDE' and 'Saved: 21 juli 2021 13:07 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		Overspeed	Relay open at > 75 rpm	CW/CCW
R2		Underspeed	Relay open at < 100 rpm	CW/CCW
R3		Overspeed		CW/CCW
R4		System check	Relay open at functional error	

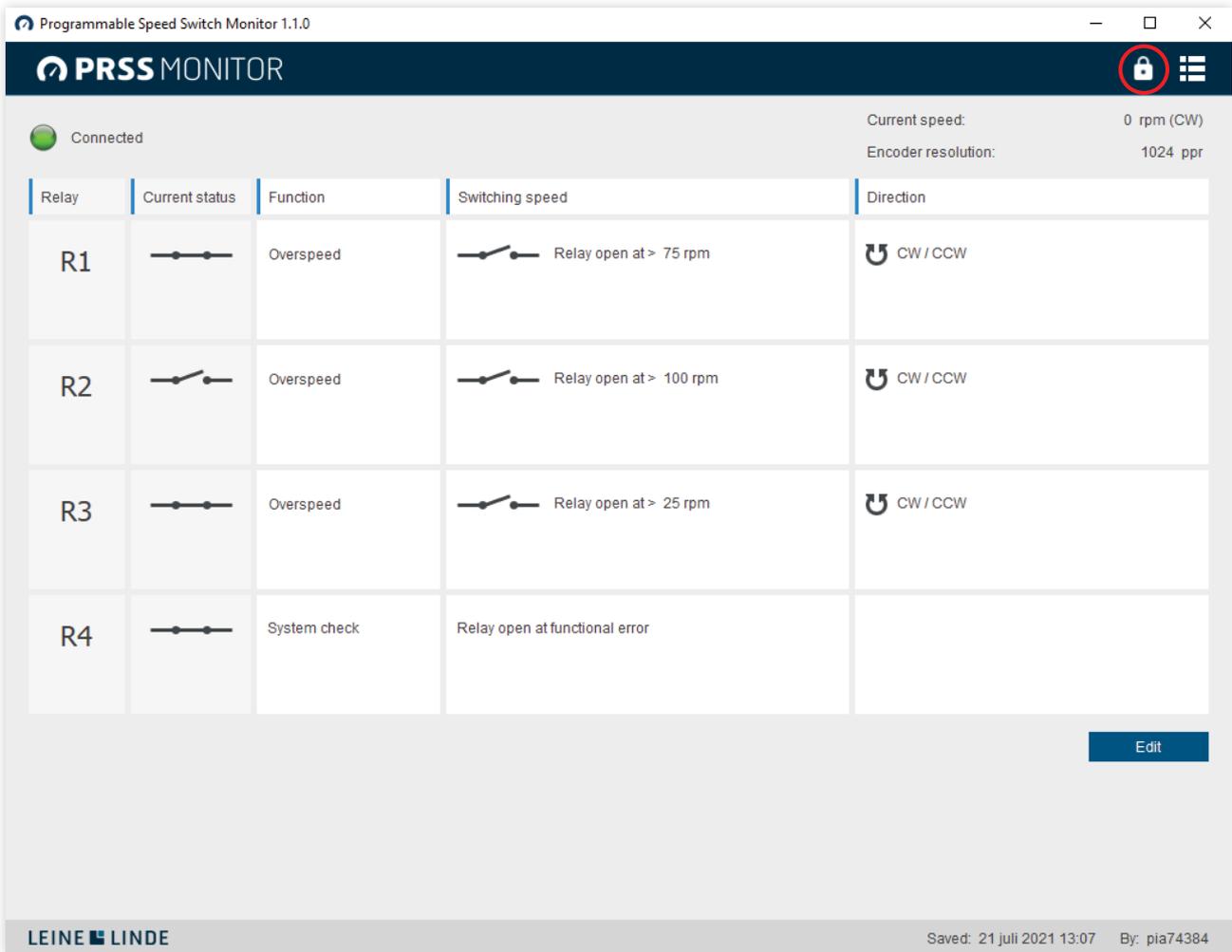
4 Password protection

The speed switch units are delivered in an unlocked, unprotected state. It is possible to set and change configuration of relays without the password. The lock symbol shows the state of the unit

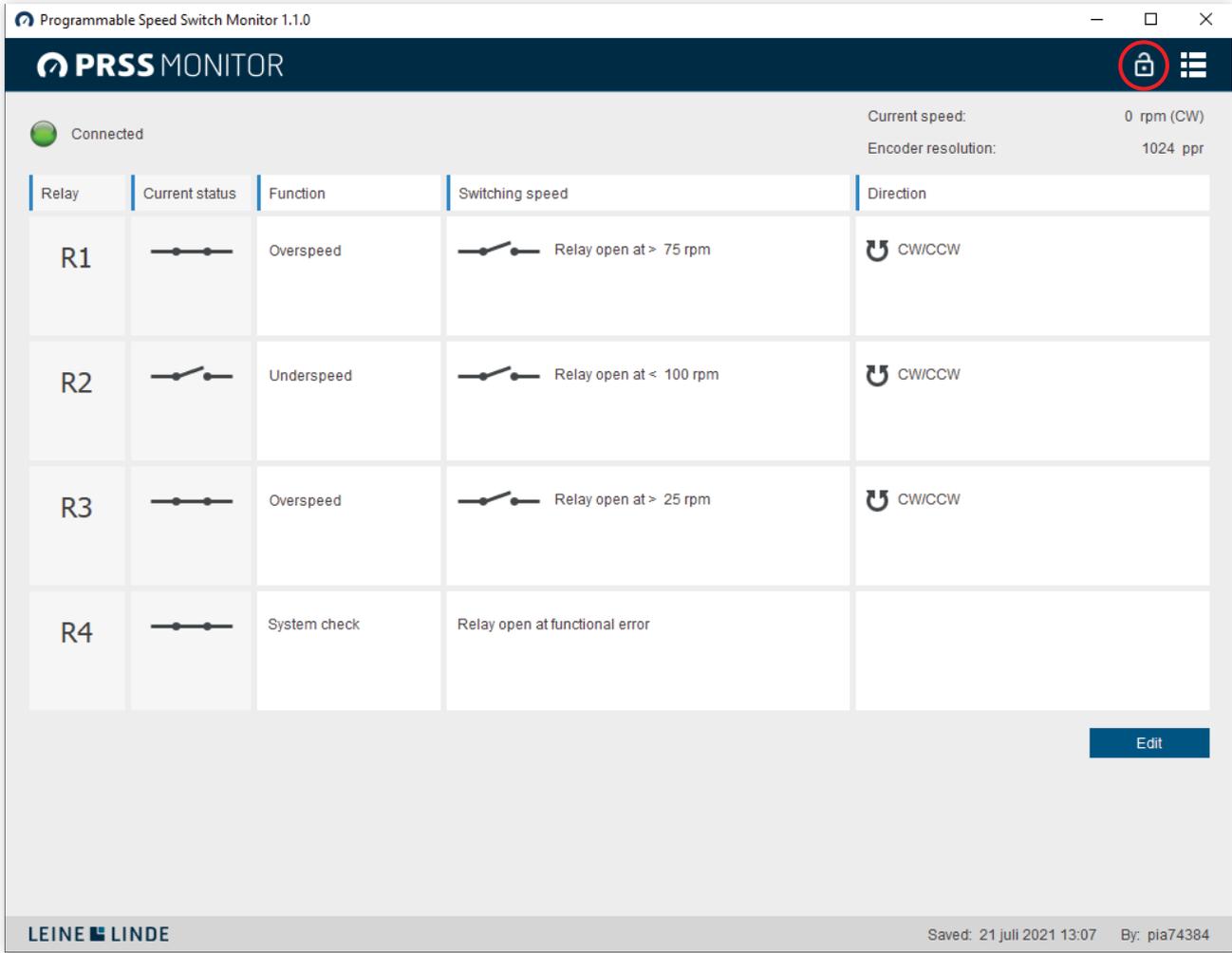
The screenshot shows the PRSS MONITOR web interface. At the top, there is a title bar with the text "Programmable Speed Switch Monitor 1.1.0" and standard window controls. Below the title bar is a dark blue header with the "PRSS MONITOR" logo and a lock icon in a red circle. The main content area shows a "Connected" status with a green dot. On the right, it displays "Current speed: 0 rpm (CW)" and "Encoder resolution: 1024 ppr". A table lists four relays (R1, R2, R3, R4) with their current status (Not active), functions, switching speeds, and directions. An "Edit" button is located at the bottom right of the table. The footer contains the "LEINE LINDE" logo and the text "Saved: 21 juli 2021 10:06 By: pia74384".

Relay	Current status	Function	Switching speed	Direction
R1	Not active			
R2	Not active			
R3	Not active			
R4	Not active	System check	Relay open at functional error	

Unprotected: No password has been set to protect re-configuration of the unit. The lock symbol has a + in it.



Protected: A password has been set to the unit, a password is required to unlock the unit. By knowing the password it is also possible to remove the protection from the password menu. The locked symbol has a dot in it.



Unlocked: Re-configuration of unit possible. The unlocked symbol means the encoder is password protected but temporarily unlocked.

4.1 Enable password protection

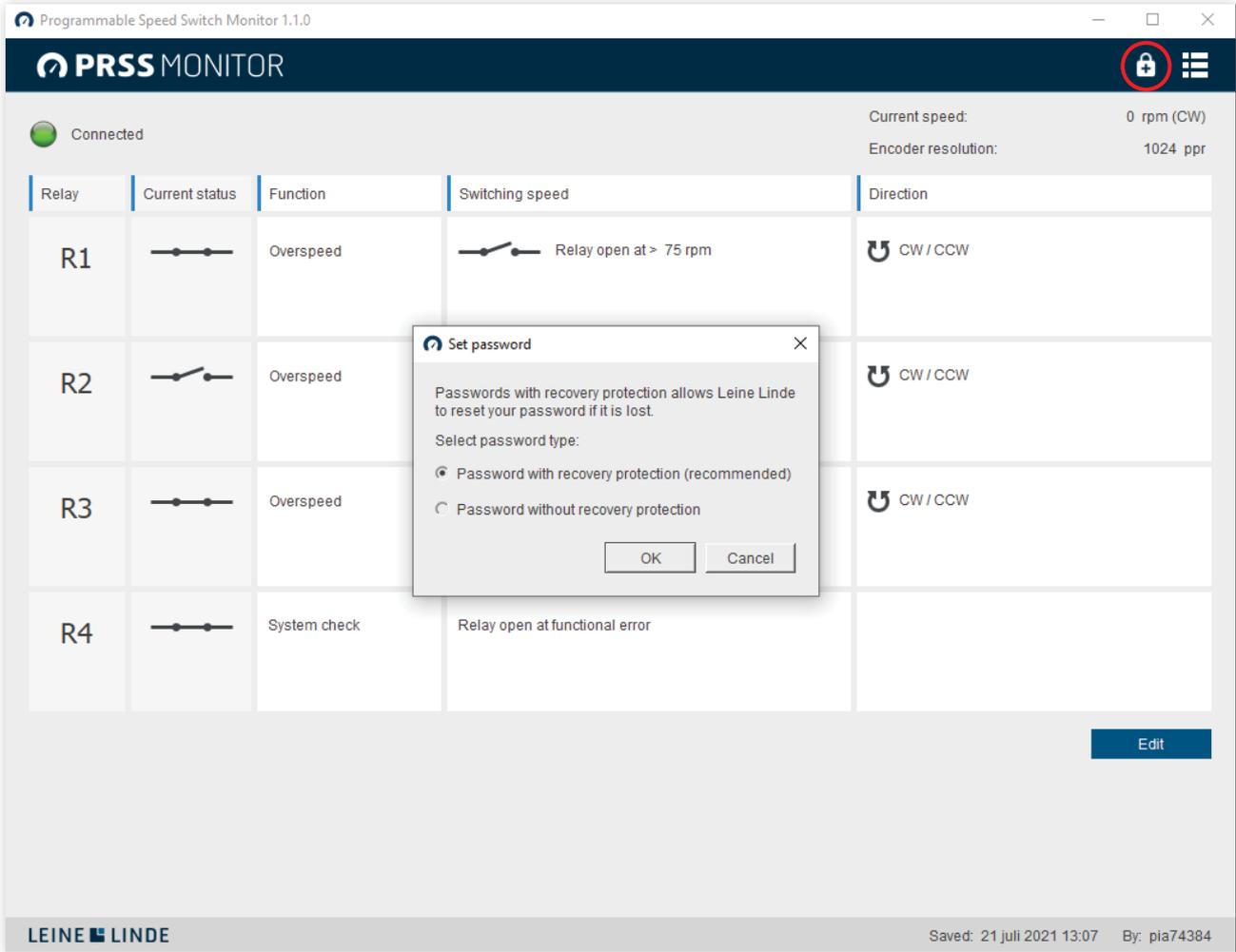
To enable a password protection, click the lock on the upper right hand side.

The screenshot shows the PRSS MONITOR software interface. At the top, there is a title bar with the text "Programmable Speed Switch Monitor 1.1.0" and standard window controls. Below the title bar is a dark blue header with the "PRSS MONITOR" logo and a lock icon circled in red. The main area displays a status bar with "Connected" and a green indicator, and two data points: "Current speed: 0 rpm (CW)" and "Encoder resolution: 1024 ppr". Below this is a table with the following columns: Relay, Current status, Function, Switching speed, and Direction. The table contains four rows of relay data. At the bottom right of the table area is an "Edit" button. The footer of the interface includes the "LEINE LINDE" logo and the text "Saved: 21 juli 2021 10:06 By: pia74384".

Relay	Current status	Function	Switching speed	Direction
R1		Not active		
R2		Not active		
R3		Not active		
R4		System check	Relay open at functional error	

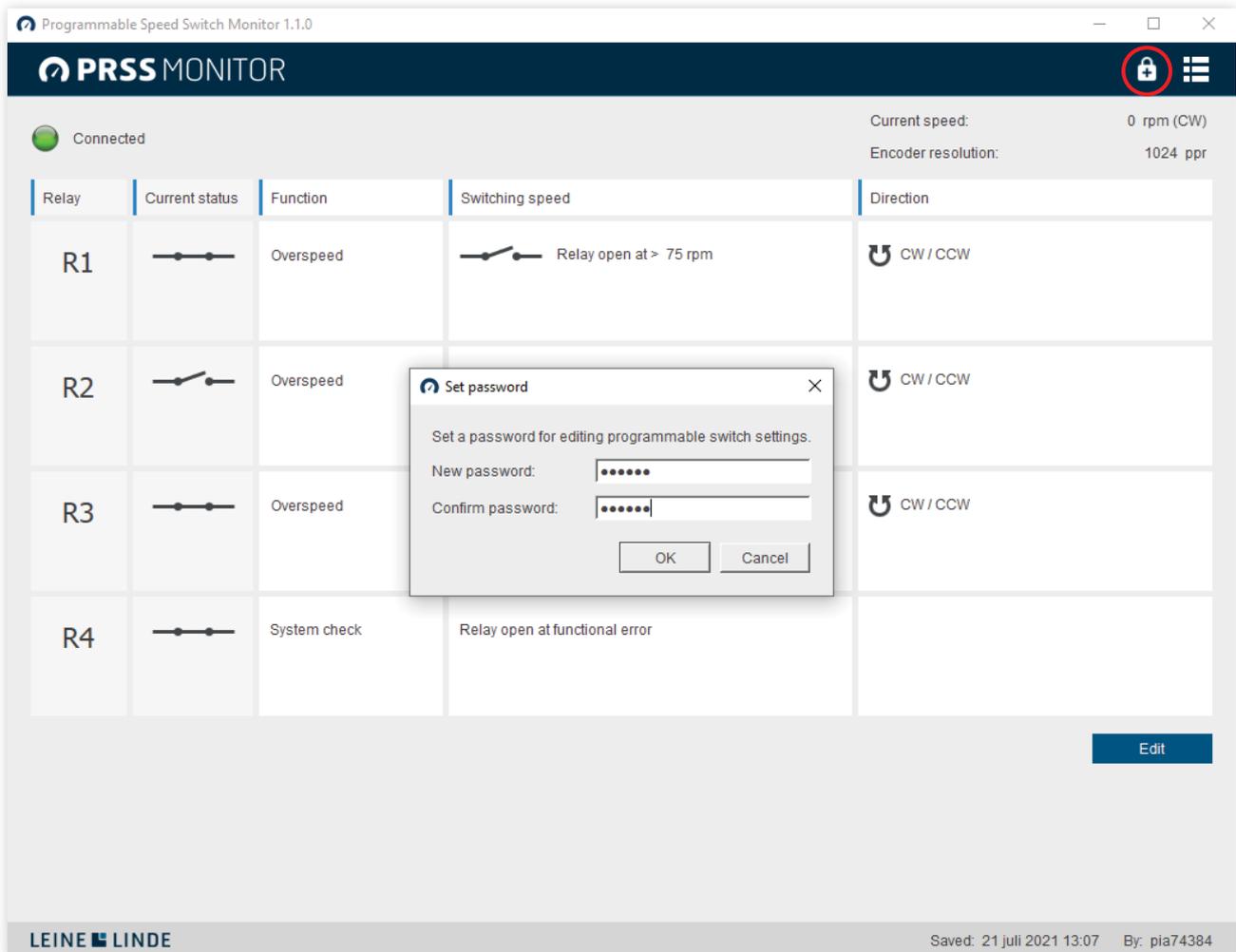
Two levels of password protections can be selected. The standard password allows the users to utilize the password recovery function built into the software in the case where the password is forgotten or lost. The password recovery function lets anyone with access to the physical unit turn to Leine Linde (passwordrecovery@leinelinde.com) to receive a temporary password to unlock the unit.

If this feature is not desirable, it is possible to set an exclusion password. This option will remove all possibility of unlocking the configuration of the speed switch if the password should be lost or forgotten. No recovery of the password is possible (chapter 4.4)

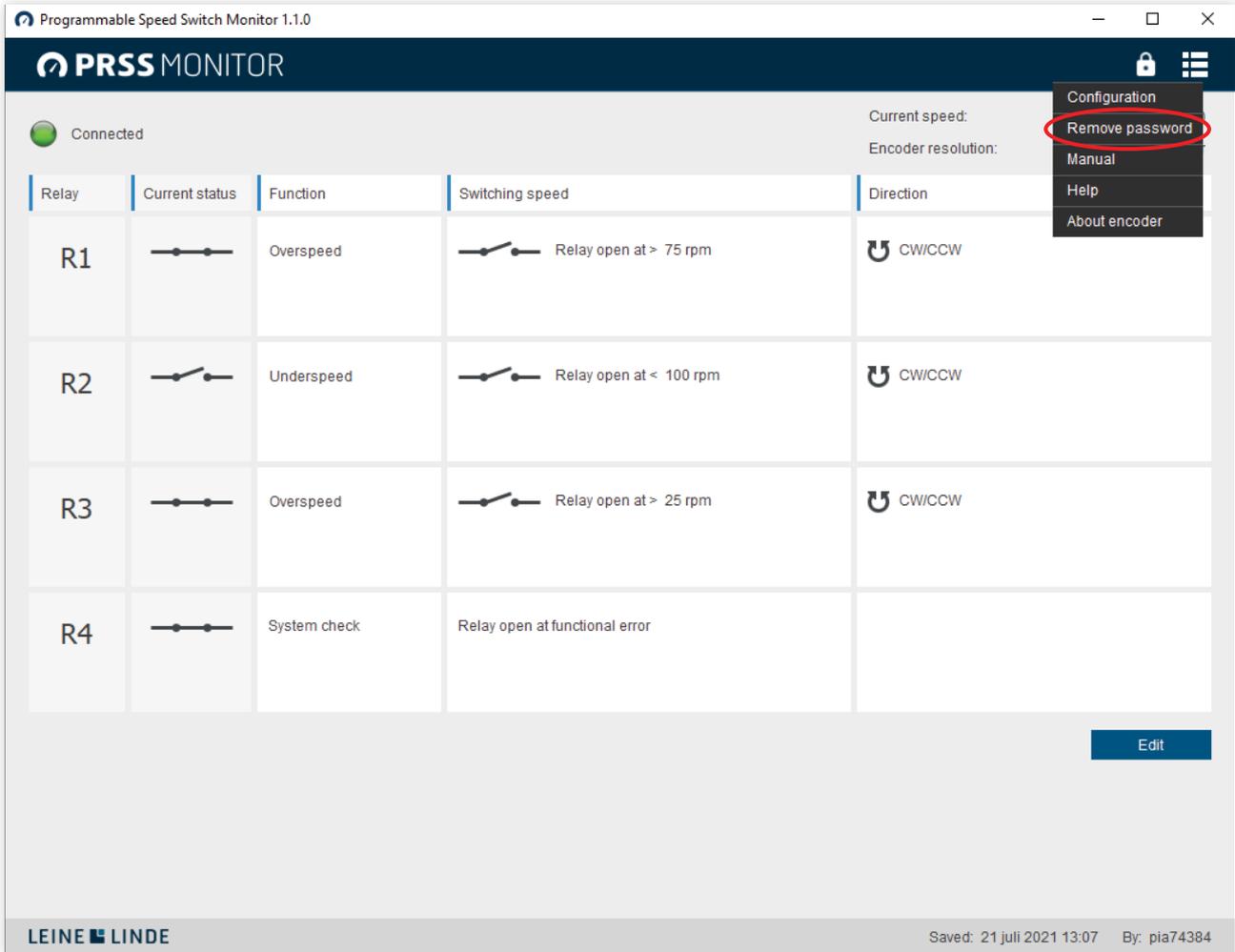


4.2 Password with recovery protection

Choose the password which will be required in order to change the configuration of the Speed switch unit. When configuration is saved the unit locks again and can only be open with the chosen password.

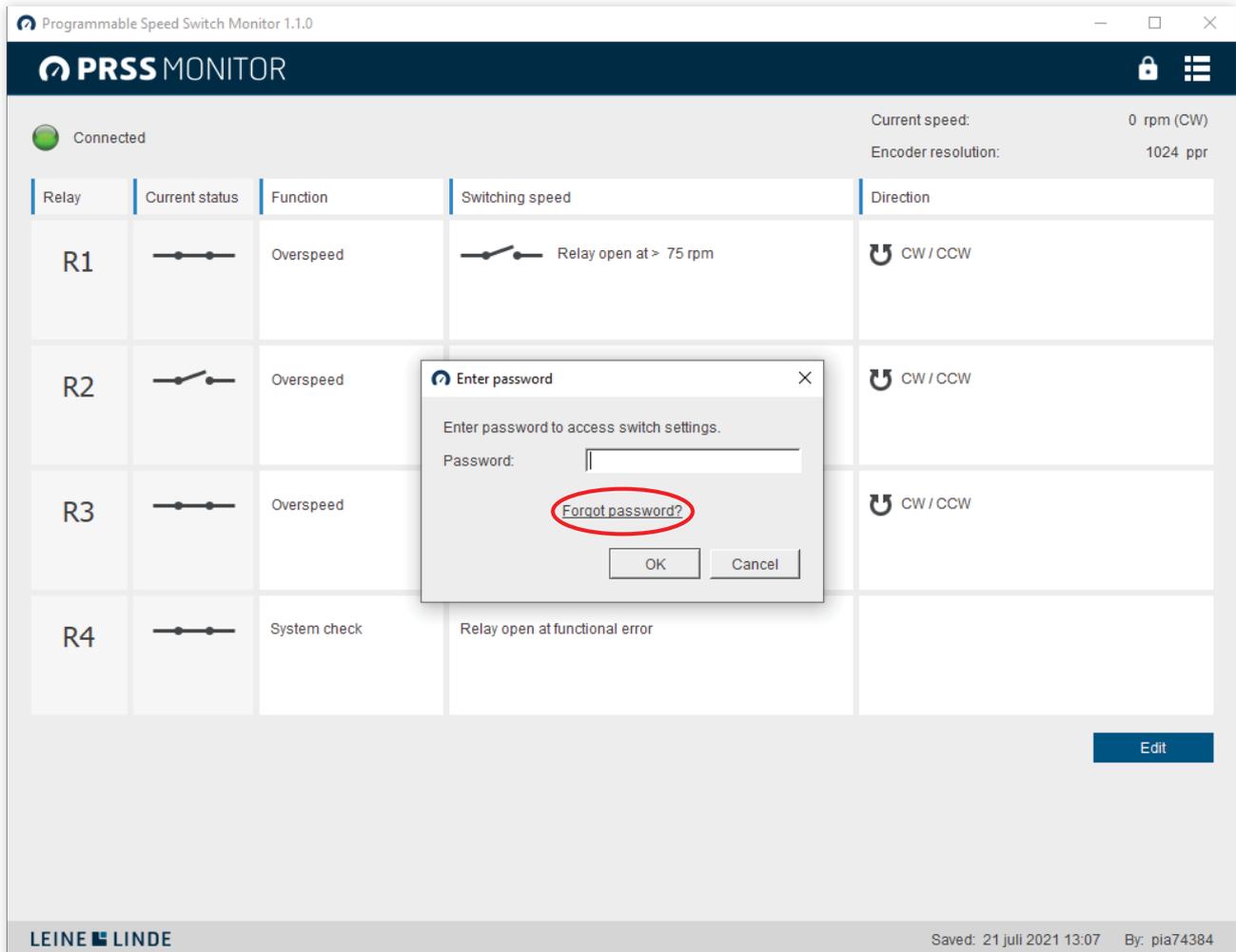


Once a Speed Switch unit is password protected, it will also be locked. Unlocking the Speed switch unit does not remove the password protection. Instead it temporarily enables modification of the speed switch configuration. It is possible to remove the password protection via the menu at the upper right corner, next to the lock symbol.



4.3 Password recovery

If the password has been lost or forgotten it is possible to receive a temporary password to unlock the unit. Press the lock symbol, and press “forgot password”



To receive the temporary password, copy the token and send an e-mail to passwordrecovery@leinelinde.com, and within 2 working days a temporary password will be sent out to be able to remove the password protection.

The screenshot displays the PRSS MONITOR web interface. At the top, it shows 'Connected' status and 'Current speed: 0 rpm (CW)' and 'Encoder resolution: 1024 ppr'. Below this is a table with columns: Relay, Current status, Function, Switching speed, and Direction. The table contains four rows: R1 (Overspeed, Relay open at > 75 rpm, CW/CCW), R2 (Underspeed, CW/CCW), R3 (Overspeed, CW/CCW), and R4 (System check). A 'Password recovery' dialog box is overlaid on the table, containing instructions to request a one-time use password by sending a token to passwordrecovery@leinelinde.com. The dialog shows a token '123456789-00000001' and a field for the recovery code. 'OK' and 'Cancel' buttons are at the bottom of the dialog. An 'Edit' button is visible in the bottom right corner of the interface. The footer shows 'LEINE LINDE' and 'Saved: 21 juli 2021 13:07 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		Overspeed	Relay open at > 75 rpm	CW/CCW
R2		Underspeed		CW/CCW
R3		Overspeed		CW/CCW
R4		System check		

Password recovery

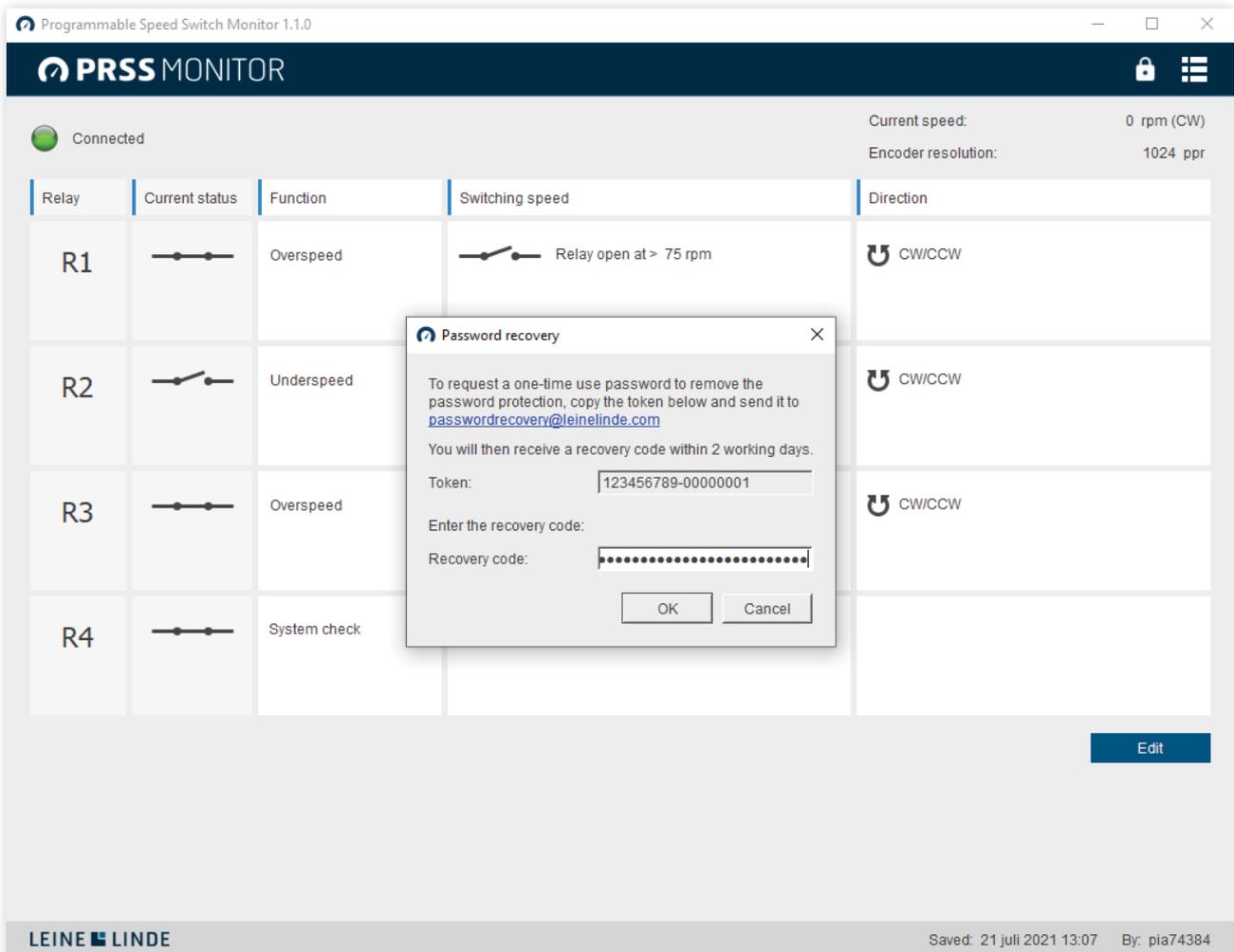
To request a one-time use password to remove the password protection, copy the token below and send it to passwordrecovery@leinelinde.com. You will then receive a recovery code within 2 working days.

Token:

Enter the recovery code:

Recovery code:

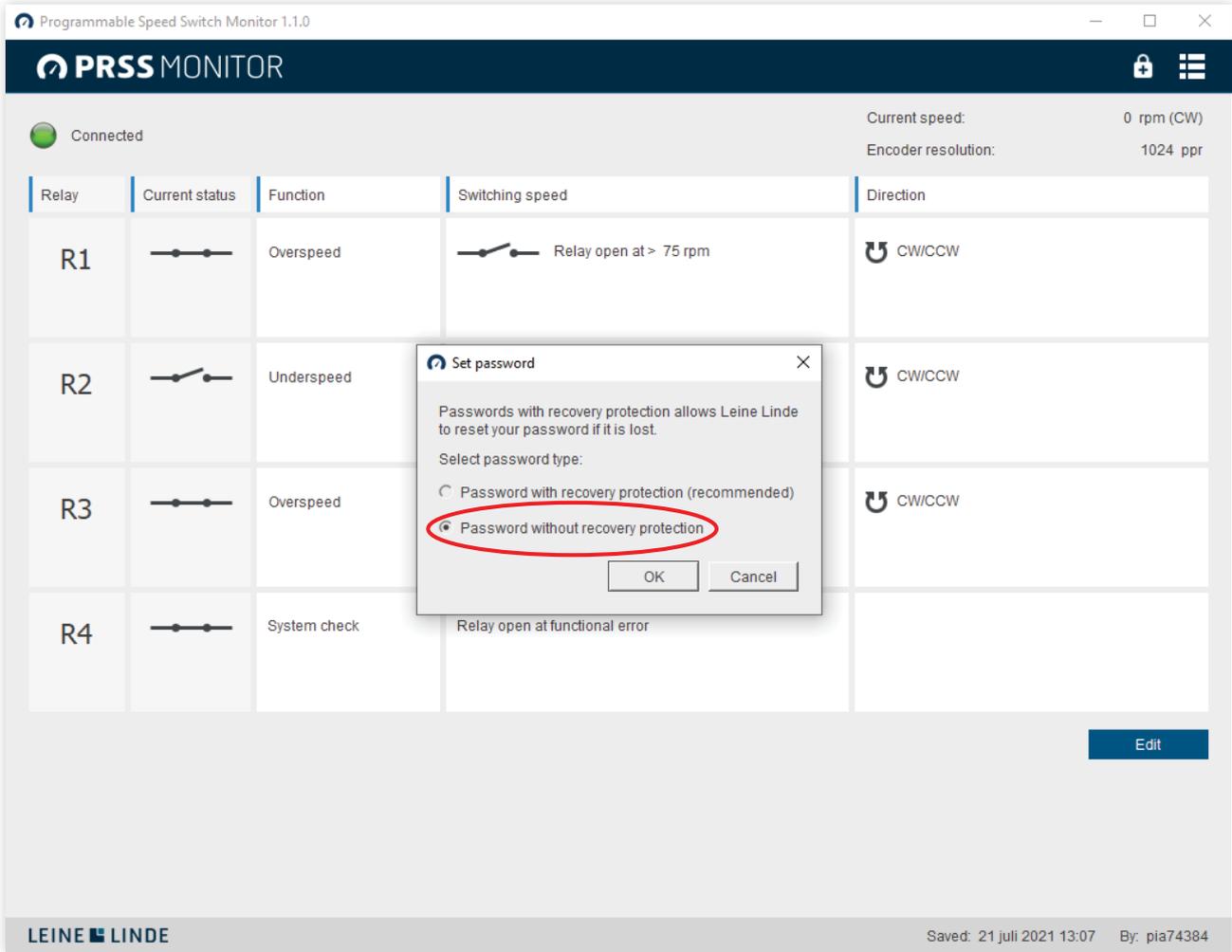
Copy the temporary password and paste it into the “recovery code” box and press OK. Now the password protection is removed and a new password may be set.



Disconnecting the USB cable from the Speed switch unit will place the unit in locked state if the unit is password protected, or unlocked state if the unit is not password protected.

4.4 Password without recovery protection

Setting a password without recovery protection disables the possibility to reset the password if it is lost or forgotten.

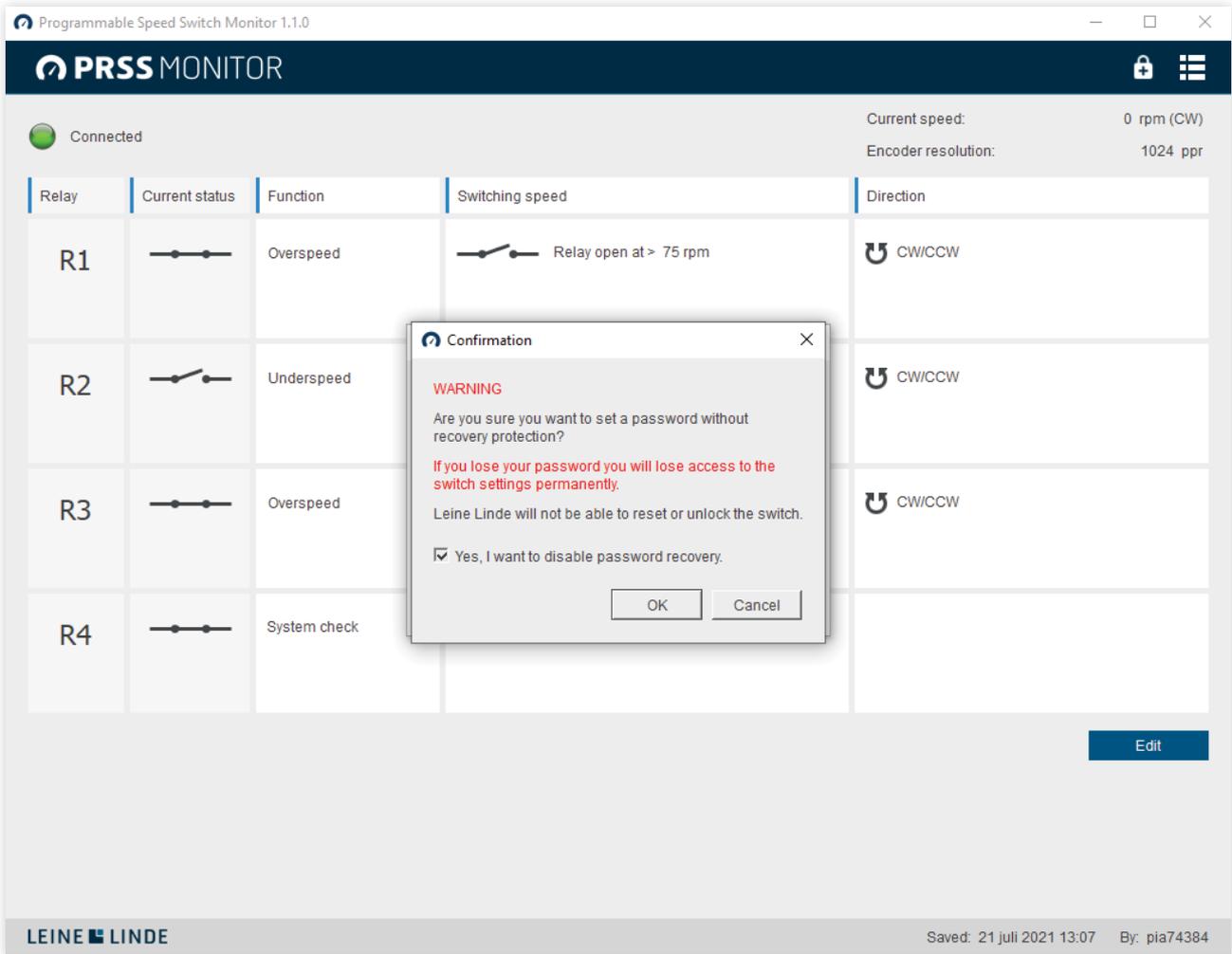


Choose the password which will be required in order to change the configuration of the Speed switch unit. When configuration is saved the unit locks again and can only be open with the chosen password.

The screenshot displays the PRSS MONITOR software interface. At the top, it shows 'Programmable Speed Switch Monitor 1.1.0' and 'PRSS MONITOR'. The status is 'Connected'. On the right, it displays 'Current speed: 0 rpm (CW)' and 'Encoder resolution: 1024 ppr'. Below this is a table with columns: Relay, Current status, Function, Switching speed, and Direction. The table contains four rows: R1 (Overspeed, Relay open at > 75 rpm, CW/CCW), R2 (Underspeed, CW/CCW), R3 (Overspeed, CW/CCW), and R4 (System check). A dialog box titled 'Set password without recovery protection' is overlaid on the table. It contains a note: 'NOTE: This will create a password that cannot be recovered or reset by Leine Linde.' Below the note, it says 'Set a password for editing programmable switch settings.' There are two input fields for 'Password:' and 'Confirm password:', both containing six dots. At the bottom of the dialog are 'OK' and 'Cancel' buttons. An 'Edit' button is visible at the bottom right of the main interface. The footer shows 'LEINE LINDE' and 'Saved: 21 juli 2021 13:07 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		Overspeed	Relay open at > 75 rpm	CW/CCW
R2		Underspeed		CW/CCW
R3		Overspeed		CW/CCW
R4		System check		

Mark the box to confirm that you want to disable the password recovery possibility, then press OK.

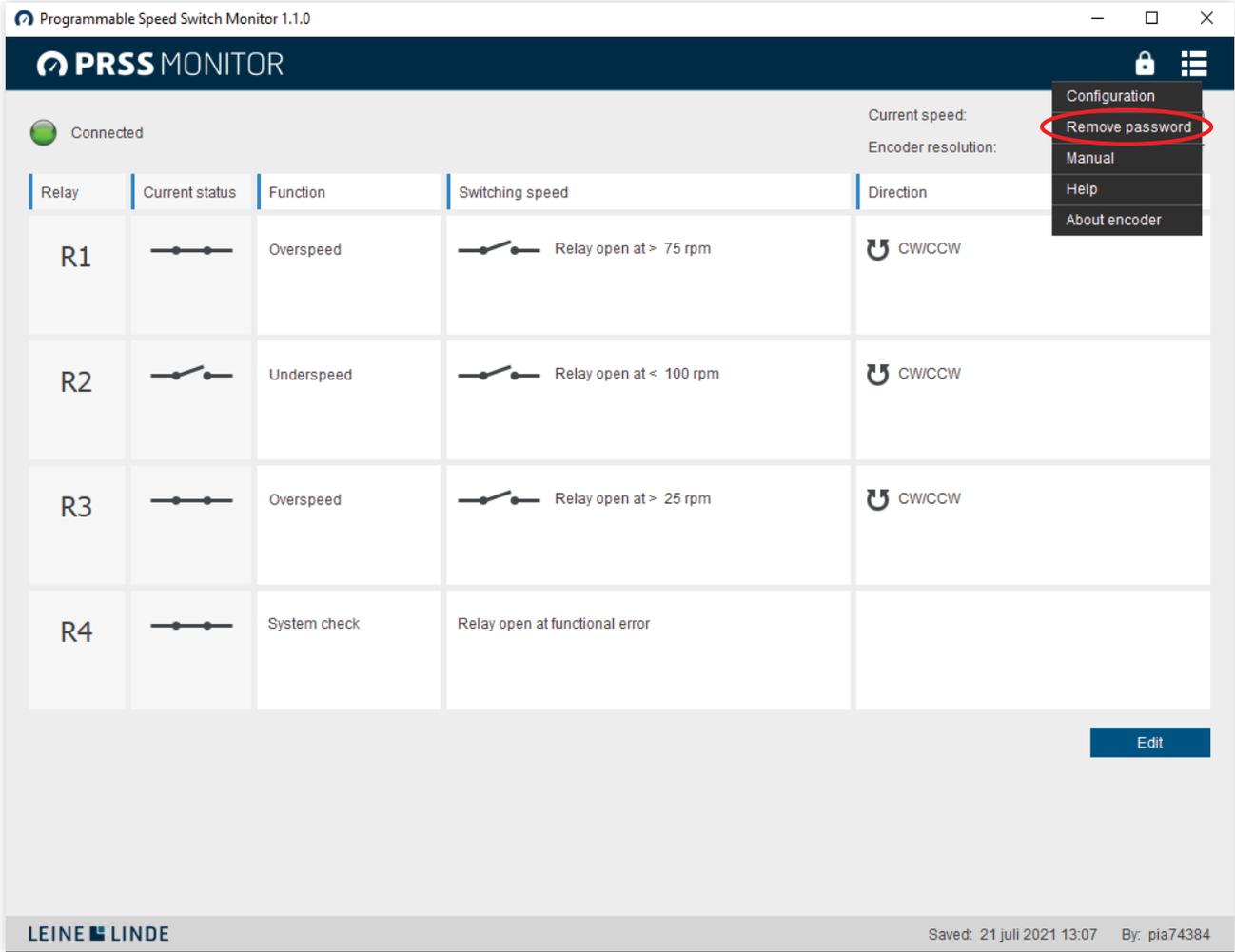


Make sure to store the password securely as there is no possibility to recover it.

The screenshot displays the PRSS MONITOR software interface. At the top, the title bar reads 'Programmable Speed Switch Monitor 1.1.0'. The main header features the 'PRSS MONITOR' logo and a lock icon. Below the header, the status 'Connected' is shown on the left, and speed/encoder data is on the right: 'Current speed: 0 rpm (CW)' and 'Encoder resolution: 1024 ppr'. The central area is a table with columns: Relay, Current status, Function, Switching speed, and Direction. A modal dialog box titled 'Password set' is overlaid on the table, containing the text: 'Your password has been set!', 'Recovery functionality is disabled.', and 'Make sure to store the password securely.' with an 'OK' button. An 'Edit' button is located at the bottom right of the table area. The footer includes the 'LEINE LINDE' logo and the text 'Saved: 21 juli 2021 13:07 By: pia74384'.

Relay	Current status	Function	Switching speed	Direction
R1		Overspeed	Relay open at > 75 rpm	CW/CCW
R2		Underspeed	Relay open at < 100 rpm	CW/CCW
R3		Overspeed		CW/CCW
R4		System check	Relay open at functional error	

A password set without recovery protection can however be removed if you know the password. The remove password function can be found in the menu at the upper right corner.



5 Appendix

5.1 Connecting the devices for programming the Speed Switch settings

Gateway

Unscrew the three screws to remove the cover. Connect the mini b-plug cable to the connector in the gateway. Connect the other end to a USB-port in the PC. For full programming mode connect the encoder and power supply 9-30 Vdc.

The Speed Switch gateway has two bi-colour LEDs to indicate the status of the unit.

	Normal operation	Overspeed	Alarm
OS/Alarm LED	Green	Red	Blinking red (200 ms)
Power LED	Green	Green	Green

800 series integrated Speed Switch

Unscrew the blind plug in the back cover to reveal the mini-USB connector. Connect the mini b-plug cable to the encoder and the other end to a USB-port in the PC. For full programming mode, connect the encoder to a power supply 9-30 Vdc.

1000 series integrated Speed Switch

Unscrew the four screws to remove the cover of the Speed Switch terminal box. Connect the mini b-plug cable to the encoder and the other end to a USB-port in the PC. For full programming mode connect the power supply to the encoder 9-30 Vdc and also power supply to the relays 9-30 Vdc.

5.2 Accessories

Part no. 687661-01	Programming cable USB to mini b-plug
Part no. 1338559-01	Power supply for terminal connection (for programming Speed Switch settings in office environment).

6 Revision history

Revision	Date	Changes
Rev. 1	2015-04-22	First release
Rev. 2	2021-08-26	Added functionality with password protection.



The best encoders and sensors are those you never have to think about. Those that simply do their job – year after year. Leine Linde develops and manufactures customized encoder and sensor solutions for demanding environments, advanced measuring systems for accurate feedback of speed, position or strain.

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