



RS4soft

Configuration and Diagnostics Software for ROTOSCAN RS4-4

User Manual



TABLE OF CONTENTS

1	About the User Manual	61
2	First Steps	62
2.1	Foreword	62
2.2	Software Structure	62
2.3	Required Components	63
2.4	System Requirements	63
2.5	System Requirements	63
2.6	System Requirements	64
2.7	System Requirements	64
2.8	Interfaces and Pin Assignments for the ROTOSCAN RS4-4	64
2.9	Connecting the ROTOSCAN RS4-4	68
2.10	Installing the Software	69
3	Calling Up RS4soft and Starting the System	69
3.1	Establishing Communication from PC to RS4-4	69
3.2	Startup Page with Verification of Safety-Relevant Parameters	70
3.3	User Levels	71
4	Main Menu	72
4.1	Menu Structure	72
4.2	Main Menu Line	72
4.3	Subject Line	73
4.4	Standard Buttons in the Function Line	73
4.5	Information Field Line	74
4.6	Coordinate Control and Display	75
4.7	Displaying Measurement Values and Fields in the Contour Area	76
5	Display the measurement contour Subject Button	78
5.1	Define the detection zone display	78
6	RS4 configuration	80
6.1	Load configuration data from a file	81
6.2	Save configuration data as a file	81
6.3	Retrieve configuration data from the RS4	81
6.4	Transfer configuration data from PC to RS4	82
6.5	Change configuration data	82
6.5.1	RS4 configuration parameters	83
6.5.2	Non-safety-critical parameters	84
6.5.3	Safety-critical parameters	85
	- Start interlock	
	- Startup test	
	- Changeover	
	- Start detection zones	
6.5.4	Field pair 1 to 4	90
6.6	Set standard values for RS4	91
7.	Define detection zones/warning fields..... Subject Button	93
7.1	Load detection zone/warning field from file	94
7.2	Save detection zone/warning field as a file	95
7.3	Select detection zone/warning field	95
7.4	Enter detection zone/warning field	95
7.5	Define elliptical detection zone/warning field	96

7.6	Define rectangular detection zone/warning field.....	Function Button	96
7.7	Define polygonal detection zone/warning field.....	Function Button	98
7.8	(freistehend)		99
7.9	Change detection zone/warning field segment.....	Function Button	100
7.10	Limit detection zones/warning field.....	Function Button	101
7.11	Blanking out a detection zone/warning field segment	Function Button	102
7.12	Delete detection zone/warning field.....	Function Button	104
7.13	Transfer detection zone/warning field from PC to RS4.....	Function Button	104
8	RS4 system data.....	Subject Button	106
8.1	Load system data from the RS4	Function Button	106
8.2	Display RS4 error list.....	Function Button	106
8.3	Calibrate window monitoring	Function Button	107
8.4	Reset RS4	Function Button	107
9	Additional Functions on the Main Menu Line	108	
9.1	Menu „View“		108
	- Function „Save diagram as a file“		
9.2	Menu „Settings“		108
	- Function „Interface“		
	- Function „Language“		
	- Function „Change diagram color“		
	- Function „190° detection zones and warning fields“		
9.3	Menu „Detection zones/warning fields“		109
	- Function „Modified detection zones/warning fields“		
9.4	Menu „Security“		109
	- Function „Change password“		
	- Function „Reset password“		
9.5	Menu „Help“		110
	- Function „Info“		
10	Additional Information and Summary	111	
10.1	Initial Configuration		111
10.2	Changing a Scanner Configuration or Field Definition		112
10.3	Creating a Configuration Without a Connected Scanner		113
10.4	Replacing Devices		113

1 About the User Manual

This documentation contains all information regarding proper use of the configuration software RS4soft. It is supplied with every delivered system and is intended for use by the planners, operators and maintenance personnel of systems that are safeguarded by the ROTOSCAN RS4-4. The documentation must be kept so that it is easily accessible at all times.

Safety precautions and warnings are designated by the

symbol  .

Please verify that the RS4-4 laser scanner is installed and mounted so as to be ready for operation as specified by the Technical Description No. 50036431. Leuze lumiflex GmbH + Co. is not liable for damage resulting from improper use of its equipment. Familiarity with these two manuals constitutes part of the knowledge required for proper use.

The RS4soft software was designed exclusively for the RS4 scanner series. The user manual was written with reference to the ROTOSCAN RS4-4 with a detection zone range of 4 meters. For this reason, both designations (RS4-4 and RS4) are used in the text and in the illustrations.

Version of the contents: V1.01

© No reprints or duplications, in full or in part, without the express permission of

Leuze lumiflex GmbH + Co.
Ehrenbreitsteiner Str. 44
D-80993 Munich
Germany

2 First Steps

2.1 Foreword

This manual describes the functional and performance features of the RS4soft software. RS4soft is an extremely powerful configuration and diagnostics software program designed for use with the laser scanner ROTOSCAN RS4-4. During development, the highest priorities were placed on reliability and user-friendliness. RS4soft is not suitable for configuring devices made by other manufacturers.

The organization of this user manual parallels the sequences and hierarchies of the software menu points. The manual provides you with clear information regarding the structures and functions of RS4soft. Where more complex subjects are concerned, you can refer to the screen shot illustrations, which give you a concrete look at the points under discussion. The software itself offers an additional „help“ text for each function button. Simply move the mouse pointer to a function button, and a descriptive pop-up window will appear automatically.

Please keep this description in a safe place and make sure that it is accessible during the entire service life of the software.

2.2 Software Structure

RS4soft follows a subject-related tree structure:

- The user interface was designed to be Microsoft® compatible as far as possible in order to shorten the learning curve.
- Subject buttons refer to function groups and the detailed functions incorporated in them.
- Function buttons enable desired functions to be performed; many of these buttons offer dialog boxes and drop-down menus to simplify the selection process.
- Standard buttons contain frequently required functions and are not linked to any specific subject.

2.3 Required Components

The following components are required for the initial startup:

- Laser scanner RS4-4, installed as specified in Technical Description No. 50034330
- PC or laptop with color monitor and installed RS4soft program
- RS 232 interface cable (1:1, without cross-connection) or RS 422 interface cable for the connection to X2 (see Chapter 2.8)
- Control cable (power supply, changeover, restart) for the connection to X1 (see Chapter 2.8)

2.4 System Requirements / Software

Microsoft® Windows 95/98/NT®/2000

2.5 System Requirements / Hardware (PC)

- Intel® processor, Pentium® class or better (or compatible models such as AMD® or Cyrix®)
- At least 16 MB RAM
- 3 1/2" disk drive
- Hard drive with at least 8 MB of free memory
- You may need more disk storage if detection zone data and/or configuration data are going to be stored.
- Mouse
- Free RS 232 serial interface, or alternatively, RS 422 interface

2.6 System Requirements / Hardware (Cables, Connectors)

- Wire cross-section of cable X1: at least 0.5 mm²
- Outer diameter of the cable: between 5 mm and 10 mm
- Maximum cable length X1: 50 m
- Maximum cable length X2: 10 m for RS 232
- Maximum cable length X2: 50 m for RS 422
- Use shielded cables
- Use only the RS4-MG connectors and the RS4-MG cover provided with the delivered system.

2.7 System Requirements / Other

- Printer (black-and-white or color)

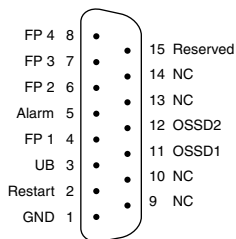


Please refer to Chapter 4.2 in the Technical Description of the ROTOSCAN RS4-4.

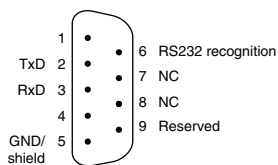
2.8 Interfaces and Pin Assignments for the ROTOSCAN RS4-4

Inter- face No.	Interface Type	Interface Function
X1	SUB-D15	Connections for: <ul style="list-style-type: none">• Power supply• Switch and signal cables
X2	SUB-D9	Interface ROTOSCAN RS4-4 - PC <ul style="list-style-type: none">• Parameter configuration• Detection zone and warning field definition• Data transfer• Diagnostics

Pin assignments for interface X1



Pin assignments for interface X2 used as an RS 232 port



Pin assignments for interface X2 used as an RS 422 port

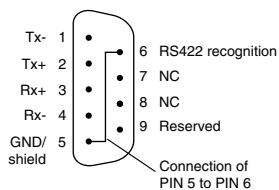


Fig. 1 Interface pin assignments with a view to the ROTOSCAN RS4-4

PIN	Signal	Description
1	GND	Ground for the supply voltage
2	Restart	Input, scanner reset, and connecting the RESTART button
3	UB	Supply voltage +24 VDC
4	FP 1	Changeover to field pair 1
5	Alarm	Semiconductor output that switches off when the warning field is violated as well as for warning messages such as „window slightly dirty“, error messages such as „window very dirty“, and for internal errors (the functions can also be selected in combination).
6	FP 2	Changeover to field pair 2
7	FP 3	Changeover to field pair 3
8	FP 4	Changeover to field pair 4
9	NC	Not connected
10	NC	Not connected
11	OSSD 1	Semiconductor output, switches off when the detection zone is violated, Channel 1
12	OSSD 2	Semiconductor output, switches off when the detection zone is violated, Channel 2
13	NC	Not connected
14	NC	Not connected
15	Re-served	Reserved for testing purposes, no wiring

Pin Assignments for Connector X1

A field pair consists of one detection zone and one warning field.

PIN	Signal	Description
1	NC	Not connected
2	TxD	Data communication, transmit
3	RxD	Data communication, receive
4	NC	Not connected
5	GND / shield	Ground / shield (connect with PE to the electronics cabinet only)
6	RS 232	Not connected
7	NC	Not connected
8	NC	Not connected
9	Reserved	Reserved for testing purposes, no wiring

Pin Assignments for Connector X2 used as an RS 232 Port

PIN	Signal	Description
1	TxD-	RS 232/ RS 422 transmitted data
2	TxD+	
3	RxD+	RRS 232/ RS 422 received data
4	RxD-	
5	GND / shield	Ground / shield (connect with PE to the electronics cabinet only)
6	RS 422	Select RS 422 interface by connecting a bridge to pin 5
7	NC	Not connected
8	NC	Not connected
9	Reserved	Reserved for testing purposes, no wiring

Pin Assignments for Connector X2 used as an RS 422 Port

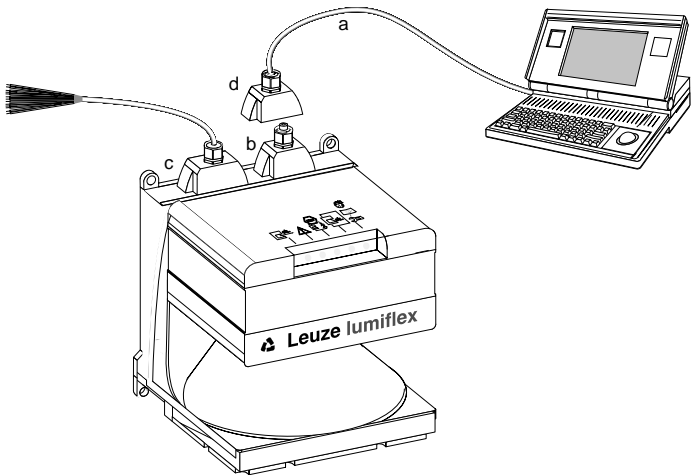
2.9 Connecting the ROTOSCAN RS4-4

To configure the scanner, connect the control cable (X1) to the power supply (safety transformer 24 V, 2.5 A, 1.25 A semi-delay fuse) and the interface cable (X2) to the PC or laptop. Before starting up the system, please verify the connector assignments, the wiring, the supply voltage and the fuse protection. Although the scanner is robustly constructed and equipped with various internal safety mechanisms, it is possible that damage could be caused by faulty wiring.



For further information, consult the Technical Description of the ROTOSCAN RS4-4 (Chapter 4.2).

PIN	Signal
1	GND
2	Restart
3	UB
4	FP 1
5	Alarm
6	FP 2
7	FP 3
8	FP 4
9	NC
10	NC
11	OSSD 1
12	OSSD 2
13	NC
14	NC
15	Reserved



- a = Connection for setting parameters only
- b = Dummy connector
- c = Connector X1 (15-pin, SUB-D)
- d = Connector X2 (9-pin, SUB-D)

2.10 Installing the Software

Place diskette #1 into the appropriate disk drive.

Start the installation program Setup.exe. After selecting the desired language (German or English) you will be asked for the installation path. The folder „Leuze lumiflex“ is recommended. Confirm the entries. Now you can load the program successively using the diskettes. Once this process is completed, RS4soft is ready for operation.

To enable the program to be called up faster, use the Microsoft® function „Create shortcut“ to add the RS4soft icon to the desktop.

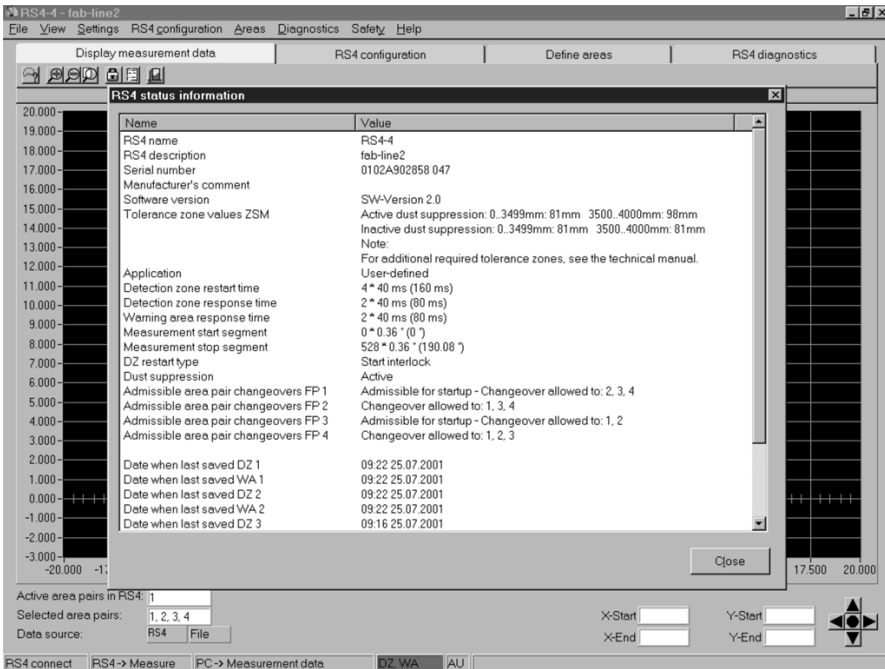
3 Calling Up RS4soft and Starting the System

3.1 Establishing Communication from PC to RS4-4

- Start the software by double-clicking either on „rs4_hmi.exe“ or on the desktop icon. For a few seconds you will see the software startup page indicating the version number. Then the main menu appears with a dialog box for selecting the authorization level (see Chapter 3.2).
- Apply the supply voltage to the ROTOSCAN RS4-4. The scanner will now automatically attempt to communicate with your PC.
- Once the PC and scanner have been successfully synchronized, the text in the info field changes from „RS4 sync“ to „RS4 connect“.
- The current configuration of the RS4-4 is transferred to the PC. A progress bar on the screen shows the configuration data being loaded.
- Please replace the standard passwords with individual passwords. A request to this effect will appear on the screen (see Chapter 3.3 and 9.4).

3.2 Startup Page with Verification of Safety-Relevant Parameters

- The RS4 configuration and the status information are now automatically transferred and displayed. Please compare these safety-relevant data with the parameters required for the current application.
- After you close the dialog box, you can begin configuring the scanner.



3.3 User Levels

To ensure that the device configuration is performed only by trained and authorized personnel, RS4soft uses the dialog „Change authorization level“ to distinguish among various authorization levels providing access to various ranges of function. The following levels are available:

Level	Info Field	Password	Access to Functions
Operator	(Be)	- - -	General settings, display and evaluation of measurement values, transferring configuration data from RS4-4 to PC, no changes to the system configuration
Maintenance	(In)	RS4IGOY	Device configurations can be loaded from diskette and saved in the RS4-4. It is not possible to make changes to the parameters themselves.
Authorized customer	(AK)	RS4LEUZE	Complete access to all user-related functions and parameters.
Service	(Se)	WINCALIB	Access to the scanner window calibration function for trained personnel
Production	(Fe)	- - -	Manufacturer-specific access
Development	(En)	- - -	Manufacturer-specific access



The factory-preset password for the authorized customer/safety official (AK) is „RS4LEUZE“. During the initial configuration of the ROTOSCAN RS4-4, the safety official must select and save new passwords for (In) and (AK); the (electronic or hard-copy) carrier of this information must be kept locked up in a secure location. Each password can be entered using either upper-case or lower-case letters; the

password acceptance is not case-sensitive. Since the authorization level „Operator“ does not allow any changes to be made to the device configuration, it is not password-protected. After the authorization level has been determined, all inaccessible function buttons are disabled and colored light gray.

In order to access the service (Se) level, you need both the correct password and a security diskette. For further information, see Chapter 9, „Additional Functions on the Main Menu Line“.

4 Main Menu

4.1 Menu Structure

The main menu displays the measured contours and detection zones. It also features subject-related menu control and additional information fields. This is a very user-friendly method for changing the operating mode and for accessing many different dialogs and functions without losing track of what is going on. After selecting one of the four subject buttons, you can choose from relevant function buttons offering related selection boxes and drop-down menus. This method for guiding the operator is used throughout the program.

4.2 Main Menu Line



File View Settings RS4 configuration Areas Diagnostics Safety Help

This line contains the complete catalog of available functions.

4.3 Subject Line

Display measurement data

RS4 configuration





Define areas

RS4 diagnostics

- „Display the measurement contour“ button
Measurement mode is activated; the current detection zone and warning field are shown in red and green, respectively. Additional programmed fields can be selected individually by means of a dialog (e.g. reference display).
- „RS4 configuration“ button
All functions required for configuring the scanner are available here.
- „Define detection zones/warning fields“ button
This subject area allows you to create application-specific definitions of the four detection zones and the four warning fields using either the mouse or numerical input.
- „RS4 system data“ button
This subject area contains data for identifying the device and diagnosing errors.

4.4 Standard Buttons in the Function Line

Frequently required functions are available at all times in the function line below the subject buttons.

- Zooming (enlarge or reduce picture, total view of 80 x 140 m) 
- Change authorization level 
- Display PC error list (list of PC-related errors with date and time) 
- End configuration program 

4.5 Information Field Line

You can find information regarding the operating mode and the current authorization level in the information line at the very bottom of the screen as follows (from left to right):

- Current data communication between PC and RS4-4
 - „RS4 sync“ for synchronizing the communication between scanner and PC
 - „RS4 connect“ „when the data transfer connection is established
- Operating status of the scanner
 - „RS4 > Measurement operation“ shows that the scanner is actively recording measurement data
 - „RS4 > Configuration“ „shows that configuration data are being transferred with the OSSDs switched off
 - „RS4 > Error“ signals a system error with the OSSDs switched off
- Selected subject button of the user program
 - „Display the measurement contour,“
 - „RS4 configuration“
 - „Define detection zones/warning fields“
 - „RS4 system data“
- Field status
 - Detection zone and warning field violated/switched off – indicators SF and WF are red
 - Warning field violated – indicator WF is green
 - Detection zone and warning field clear – no indicator

- Current access level
Depending on the setting, the following abbreviations are displayed:
 - Be for operator
 - In for maintenance
 - AK for authorized customer
 - Se for service (no standard access)
 - Fe for production (no access)
 - En for development (no access)
- Further messages and functions (below the contour field) include:
 - Name of the currently active field pair, numbered from 1 to 4
 - Field pairs displayed on the screen, numbered from 1 to 4, according to the selection in the selection dialog
 - Current source of data (RS4/file)
 - X/Y coordinates for the numerical display of the mouse pointer position (see Chapter 4.6)
 - Positioning of the contour field and optimization of display (see Chapter 4.6)

4.6 Coordinate Control and Display

In this part of the menu, located at the bottom right, the X- and Y-coordinates are displayed while the fields are being defined. In measurement mode, the position of the mouse pointer is displayed. Or, if a detection zone contour has been clicked on and dragged into position, this will be displayed. This feature makes it easy to localize objects and to create a detailed representation of particular areas.

To the right, next to the coordinate display, are arrow buttons for selecting the image area of the detection zones and warning fields and the section of the measurement contour that you want to be displayed. A very convenient function is located behind the centering point. When you click here,

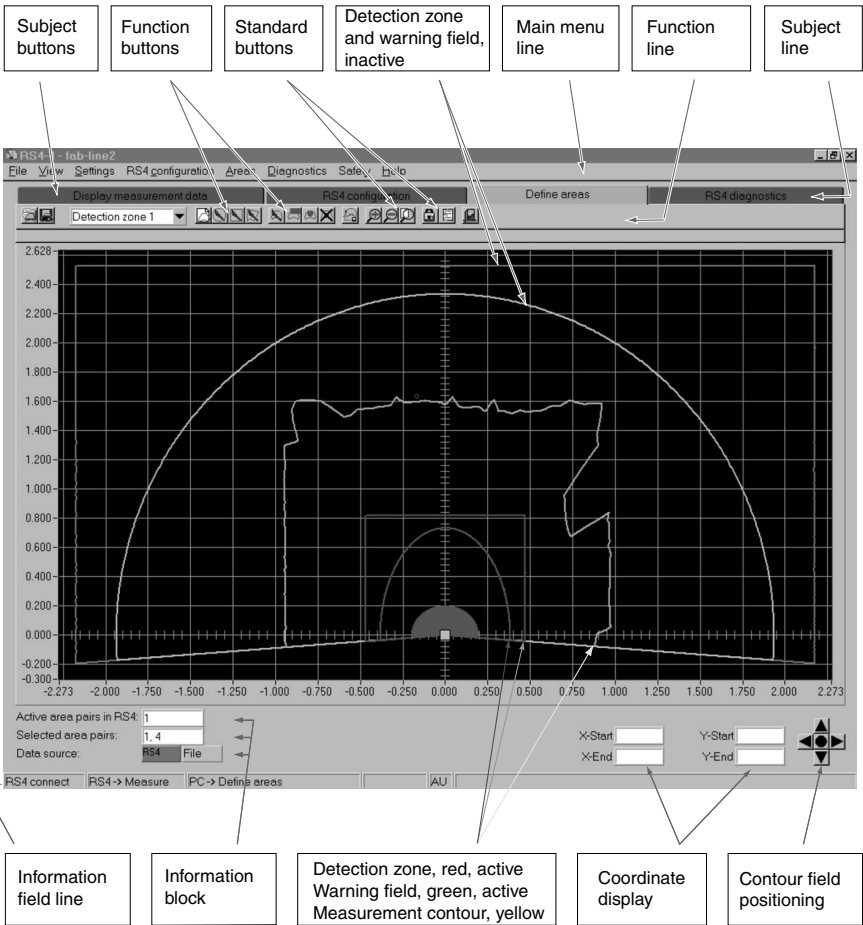
the detection zone, warning field and measured contour will be ascertained and automatically displayed on the screen on their entirety. This feature gives you a quick overview of the field proportions.

4.7 Displaying Measurement Values and Fields in the Contour Area

The following color assignments are used to make it easier to differentiate among the various contours:

Contour	Color
Minimum detection zone	blue
Detection zone	red
Warning field	green
Measured contour	yellow / red
Selected mouse pointer area	yellow
Deactivated detection zone	light gray
Deactivated warning field	dark gray
Mouse pointer	dark blue

The information block in the main menu, bottom left, shows the display of the active field pairs as well as the field pairs selected for display.



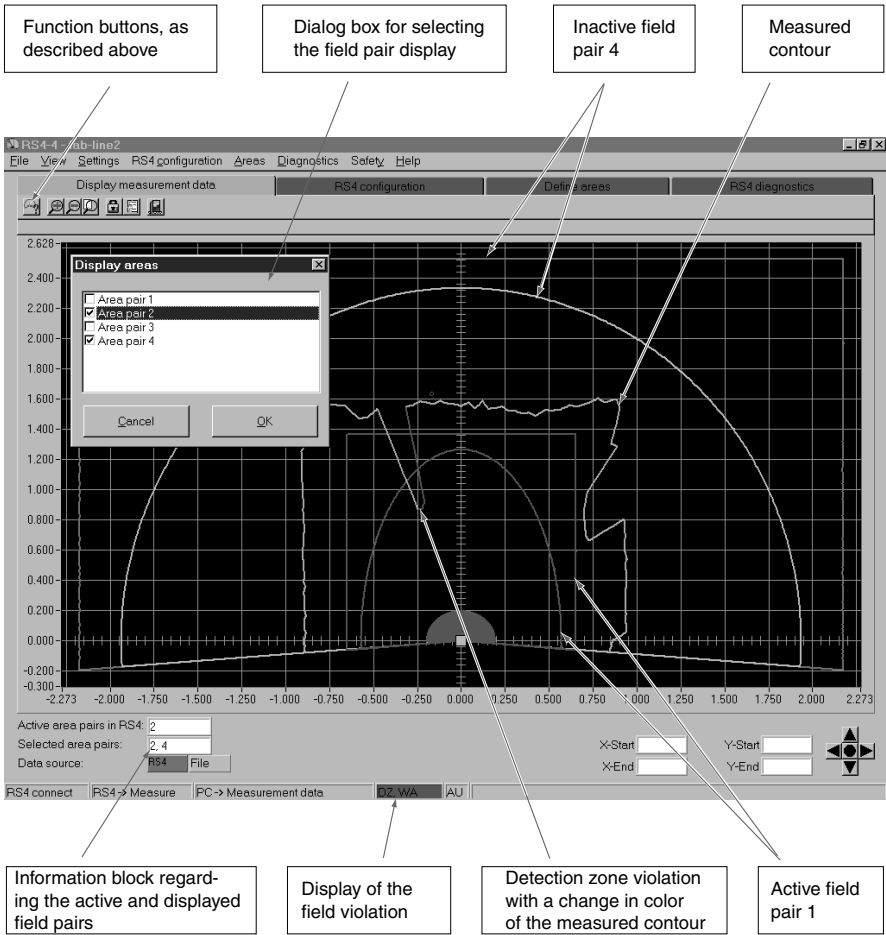
5 Display the measurement contour, Subject Button

This menu allows you to select the active and inactive detection zones and warning fields to be displayed as well as the measured contour of the room. Using constant comparisons, the ROTOSCAN RS4-4 ascertains the distance from the measured room contour to the detection zone and provides these data to the PC. If the measured contour penetrates the previously defined detection zone during a violation of the detection zone, the color of the measured contour in this area changes from yellow to red.

5.1 Define the detection zone display, Function Button

Click on the button „Define the detection zone display“ to call up a dialog box for selecting the field pairs to be displayed. Active field pairs appear in red/green, and inactive field pairs in shades of gray.

No field pair needs to be selected for a neutral contour display (e.g. for a printout). As soon as a field is selected under „Define detection zones/warning fields“ (subject button), or a field pair is selected by way of control cable X1, the selected/activated field pair appears on the screen again in red/green.



6 RS4 configuration, Subject Button

Select this menu to choose the functions for configuring the ROTOSCAN RS4-4.

This subject area comprises data transfer as well as safety-relevant and non-safety-relevant parameter settings of the scanner.



Since this menu involves points relevant to safety, please note that access is possible only when the appropriate password is entered.

Function buttons,
as described
below

Catalog of previously
saved scanner
configurations

File name
entry

Date and time
of the last
change

Confirmation
of dialog
entries

The screenshot shows the RS4 configuration software interface. A 'Choose a file to open' dialog box is open, displaying a list of files in a table. The table has columns for Name, Size, Type, and Changed. The files listed are:

Name	Size	Type	Changed
Beispiel1.rs	49 KB		25.07.2001 12:25
Fahrzeug2.rs	49 KB		25.07.2001 12:30
Maschine4.rs	49 KB		25.07.2001 12:24
PrüfTF6.rs	49 KB		12.06.2001 20:07
Sc5h02-09.rs	49 KB		25.07.2001 16:43
Sc5h10-11-12.rs	49 KB		25.07.2001 16:32
Sc5h13-15.rs	49 KB		25.07.2001 16:58
standard.rs	49 KB		17.04.2001 14:20

The dialog box also shows a 'Filename' field with 'Example1.rs.rs' and a 'Datatype' dropdown set to 'Configuration files (*.rs)'. The background shows a 2D scan plot with a grid and a semi-circular scan area. The plot axes range from -2.273 to 2.273 on the X-axis and -0.300 to 2.628 on the Y-axis. The status bar at the bottom shows 'RS4 connect', 'RS4-> Measure', 'PC-> RS4 configuration', and 'AU'.

6.1 Load configuration data from a file, Function Button

Click on this button to open a dialog box providing an overview of the scanner configurations that are already saved in the PC. Enter and/or confirm the path and file name. Click on the button „Open“ to confirm your selection, and the desired configuration will be called up. For a detailed description of the contents of the configuration data, see the section „Change configuration data“, Chapter 6.5.

6.2 Save configuration data as a file, Function Button

Click on this button to open a dialog box that allows you to save the currently defined scanner configuration. Enter and confirm the path and file name. During the storage process, a progress bar with a confirmation message appears on the screen.

For a detailed description of the contents of the configuration data, see the section „Change configuration data“, Chapter 6.5.

6.3 Retrieve configuration data from the RS4, Function Button

Click on this button to load the configuration data from the RS4-4 onto the PC. These data can be subjected to further processing or revised, if desired, by personnel with the required authorization. During loading, a progress bar with a confirmation message appears on the screen.

For a detailed description of the contents of the configuration data, see the section „Change configuration data“, Chapter 6.5.

6.4 Transfer configuration data from PC to RS4, Function Button

Click on this button to load the configuration data from the PC onto the RS4-4 and to save the configuration data. During the loading and saving process, a progress bar with a confirmation message appears on the screen.

The information received by the RS4-4 will now be transferred back as echo data and displayed on the screen so that the safety official can confirm the transfer.

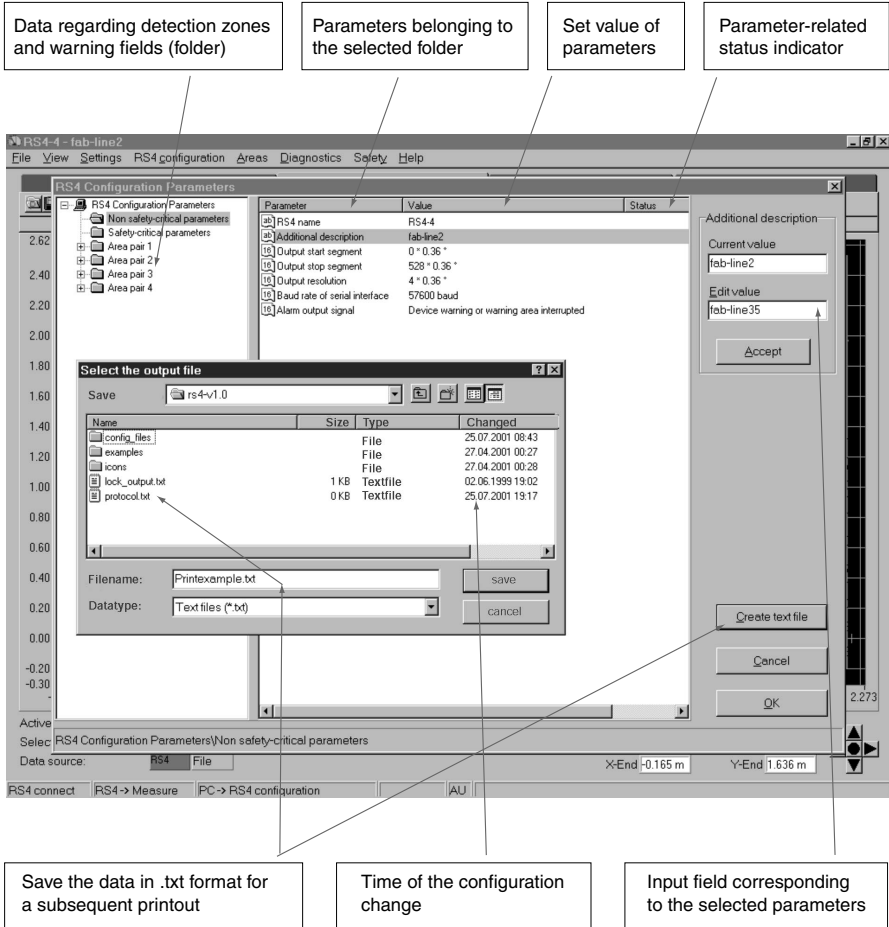


CAUTION! Since the PC is not a safety product and computer-specific errors can occur, the echo data transmitted by the RS4-4 must be checked for errors and confirmed by an authorized person.

For a detailed description of the contents of the configuration data, see the section „Change configuration data“, Chapter 6.5.

6.5 Change configuration data, Function Button

Click on this button call up a two-part dialog for changing safety-relevant and non-safety-relevant parameters as well as data related to the detection zone. These system-specific data can be converted automatically into a .txt format and then printed out.



6.5.1 „RS4 configuration parameters“ folder

This folder contains the check sum of the complete configuration data file. Following a data transfer, for instance, this sum is compared with the newly calculated check sum. If a bit was falsified during the data transfer, the two sums will no longer agree and an error message will appear.

6.5.2 „Non-safety-critical parameters“ folder

This folder contains the following functions:

Parameter	Function / Setting	Status	Possible entries
RS4 name	Scanner name	*	As desired
Additional description	Description of the application	*	As desired
Output start segment	Screen display of the first contour segment	*	0 to 528 segments <ul style="list-style-type: none"> • 0 to 528 segments corresponds to 190° • 14 to 514 segments corresponds to 180°
Output stop segment	Screen display of the last contour segment	*	0 to 528 segments <ul style="list-style-type: none"> • 0 to 528 segments corresponds to 190° • 14 to 514 segments corresponds to 180°
Output resolution	Number of measurement values per display interval. The lowest value in each interval is displayed.	*	1 to 50 consecutive measurements
Serial interface	Change in baud rate	*	4800 to 115,200 baud
Alarm signaling type	Switches off the alarm output	*	Optionally for an error message, a violation of the warning field, or both

6.5.3 „Safety-critical parameters“ folder

This folder contains the following functions:

Parameter	Function / Setting	Status	Input Options
Application	Settings for restart interlock, detection zone response times, and scanner startup functioning	*	The detection zone restart time can be set from 160 ms to 10160 ms, or the restart can be performed manually. Detection zone and warning field response time from 80 ms to 640 ms possible. Start interlock and startup test or no test.
Measurement of start segment	Technical measurement of the first contour segment	R	---
Measurement of stop segment	Technical measurement of the last contour segment	R	---
Dust suppression	Optimizes freedom from interference	*	Activate or deactivate
Admissible field pair changeovers	Determines sequence of changeovers as well as the startup field pair	*	Two input fields are provided by a dialog. Click on the desired fields to make your selection.

In the status field, R means „read only“ and * means it is possible to change the parameters.

Changing the parameters described above has no effect on the number of measurements taken or on the effectiveness of the defined detection zones.

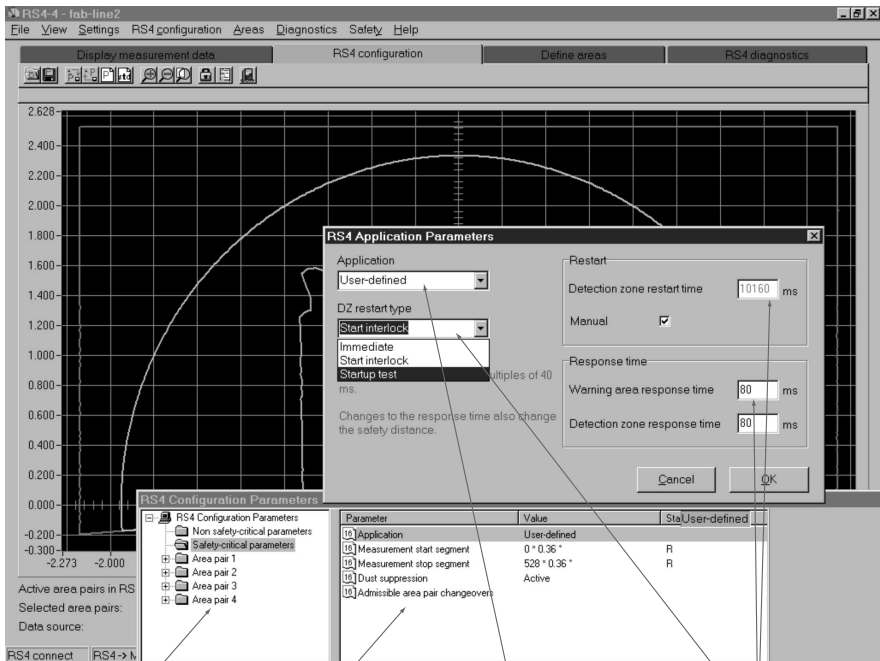
Additional Information (non-safety-critical parameters):

- **Start and stop segments:**
The output setting of the start and stop segments is used, for example, for contour measurement (e.g. 20° sections). This allows an individual, limited display of partial sections. Modifying these values merely changes the display of the contours on the screen; the number of measurements taken remains the same. This reduces both the amount of data and the transfer time.
- **Output resolution:**
A mean value for the display can be selected regardless of the number of measurements taken. If „15“ is entered, for example, the lowest value within each interval of 15 measurement points is plotted, and these successive values are used to create a line graph. Using this function results in a smoother display of the contours. For a detailed display, use setting „1“.

Additional Information (safety-critical parameters):

- **Application:**
Standardized parameter settings for safeguarding areas and safeguarding automatic guided vehicles (AGVs) are provided in a dialog.

Application	Parameter	Selection	Factory Setting
Safeguarding an area	Startup type	Start interlock Startup test No test	x
	Restart	Manual	x
	SF/WF response time	80 ms 640 ms	x
AGV	Startup type	Start interlock Startup test No test	x
	Restart	2 s	x
	SF/WF response time	80 ms 640 ms	x



Select the configura-
tion block

Display the selected
parameters

Dialog for selecting the
standardized parameter
blocks

Display of the parameters
waiting to be activated