Leuze electronic

the sensor people

RS4soft

Configuration and diagnostics software for ROTOSCAN RS4 Safety Laser Scanner

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SAFE PARAMETERING

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1 About this document

1.1 Other applicable documents

The information on the Safety Sensor is distributed over several documents to make working with the documents easier. The documents and software for the Safety Sensor are provided in the following table:

Purpose and target group of the document	Document/software title	Source
Basic information for all users of the machine*; on paper so that the information is always at hand	Application information	Art. no. 607140** Included with the product delivery as print and on CD-ROM
Software for users of the machine* for Safety Sensor diagnostics if a fault occurs and for the machine designer* for configuring the Safety Sensor	RS4soft	Included with the product delivery on CD-ROM**
Information for the machine designer*	Safe implementation and operation	Art. no. 607142** Included with the product delivery on CD-ROM
Notes for the machine designer* for configuring the Safety Sensor (RS4soft software instructions)	Safe parametering (this document)	Art. no. 607141** Included with the product delivery on CD-ROM
ROTOSCAN RS4/AS-i additional information	ROTOSCAN RS4-4 connecting and operating instructions additional information	Art. no. 607060** Included with the product delivery on CD-ROM
ROTOSCAN RS4/PROFIsafe additional information	ROTOSCAN RS4-4 Laser Scanner connecting and operating instructions additional information	Art. no. 605054** Included with the product delivery on CD-ROM

* identifies the product that the Safety Sensor is installed in.

** You download the current version of the software and all documents as PDF on the Internet at: http://www.leuze.de/rotoscan

1.2 Means of illustration used

Table 1.1: Warning signs and signal words

	Symbol for dangers
NOTICE	Signal word for damage to property Indicates dangers that could damage the Safety Sensor if the measures for preventing danger are not implemented.
CAUTION	Signal word for minor injuries Indicates dangers that could slightly injure you if the measures for preventing danger are not implemented.
WARNING	Signal word for serious injuries Indicates dangers that could seriously or fatally injure you if the measures for preventing danger are not implemented.
DANGER	Signal word for danger to life Indicates dangers that could seriously or fatally injure you if the measures for preventing danger are not implemented.

Table 1.2: Further symbols

	Symbol for tips Texts with this symbol provide you with further information on handling the software.
	Symbol for action steps Texts with this symbol instruct you on how to perform actions.

2 System requirements

Computer

You require a PC or laptop with the following to use the software:

Processor type	Intel® Pentium or comparable, e.g. AMD® or Cyrix®
Operating system	Microsoft® Windows 95/98/NT®/2000/XP®
RAM	At least 64 MB
Hard disk memory	At least 50 MB free memory You require more memory space if you want to save protective field or configuration values.
Screen display	Color
External drive	CD drive
Input device	Keyboard and mouse or touchpad
Output device	Printer (black and white or color)
Serial interface	RS232 or RS422 Use an appropriate adapter if the PC has a USB interface instead of a serial interface.

Only the term "PC" will be used in the following.

3 Scope of function

You can configure the ROTOSCAN RS4 Safety Sensor and perform diagnostics with the software. The communication is performed here via the PC.

Only use the software for Safety Sensors manufactured by **Leuze electronic**.

3.1 Configuration

To put the Safety Sensor into operation in your application, you must adjust the Safety Sensor individually via the software.

The Safety Sensor is configured at the factory and delivered with a default configuration.

The default configuration is stored as a file in the program directory during the software installation.

3.1.1 Configuring the Safety Sensor

The software saves all the data of a configuration in a configuration file.

A configuration file has the *.rs file format and includes all the information that the Safety Sensor requires for the operation.

A Safety Sensor's configuration file includes the following data:

- Administrative data, e.g. description
- Safety-relevant data, e.g. startup process
- Protective or warning field configuration data, e.g. contours and limits

A wizard guides you through the configuration.

3.1.2 Configuring protective and warning fields

Several configurable field pairs are available for the Safety Sensor. A field pair consists of a protective field and a warning field.

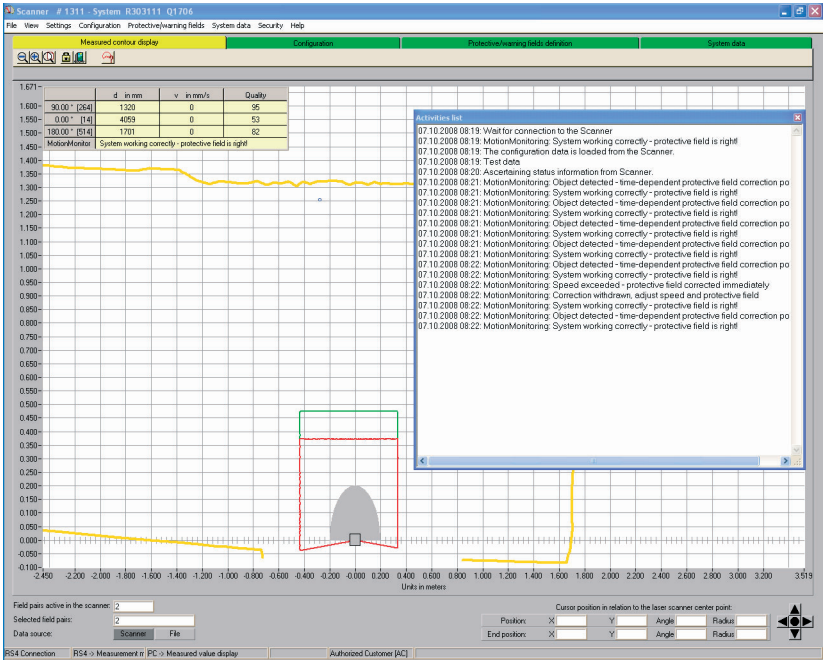
A field configuration file has the *.sf file format and includes data on the size of a single protective or warning field, e.g. contours and limits.

3.2 Diagnostics

During operation you can graphically display measured data transferred from the Safety Sensor to the PC and measured contours with the software. The software constantly compares the protective and warning fields with the measured room contour and shows protective field interruptions in real-time.

During the Safety Sensor configuration you can analyze coordinates in the software, e.g. for using automated guided vehicle systems (AGVs).

For the *MotionMonitoring* function the wizard supports you with two additional dialog boxes with the effective startup.



Pic. 3.1: Additional dialog box for MotionMonitoring

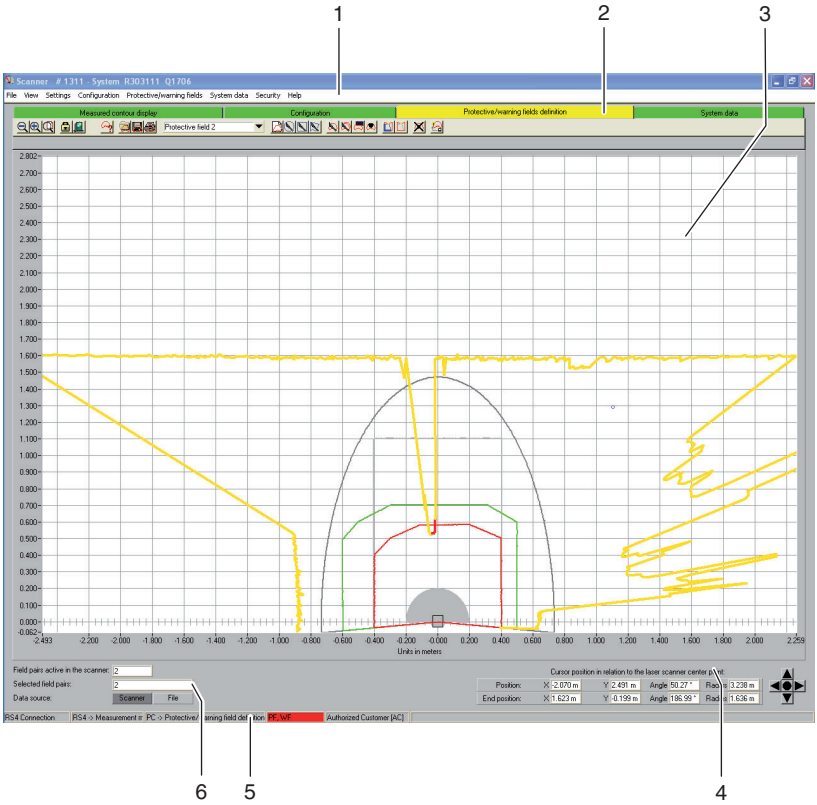
For the system test you can perform extended status and operation diagnostics with the software. You can, for example, load status information from the Safety Sensor, print a diagnostics list, and create a service file for Support.

4 User interface

4.1 Screen setup

The software graphically displays the measured and configured field contours.

The screen structures itself in several areas in which you can display and edit/ process data. Various control elements are provided on the user interface to call up the required functions.



Pic. 4.1: Screen setup

Position	Name	Description
1	Menu bar	Includes menus with menu items and sub menus (see chapter, "Menu", page 58).
2	Topic bar with toolbar	Includes operating modes with toolbar and topical task bars (see chapter, "Topic bar", page 11).
3	Work space	Graphically displays measured and room contour and protective/warning fields and allows them to be processed (see chapter, "Work space", page 12).
4	Navigation area	Shows XY coordinates of the cursor position (end position) and includes buttons for positioning the contour field (see chapter, "Navigation area", page 13).
5	Status line	Informs, for example, about connection and login (see chapter, "Status line", page 13).
6	Information area	Names active and selected field pairs and data source.

4.2 Topic bar

In the top area of the screen you will find the topic bar with the following entries:

- Measured contour display
- Configuration
- Protective/warning fields definition
- System data

Each entry of the topic bar corresponds with an operating mode. Note! The available entries of the topic bar depend on the selected authorization level.

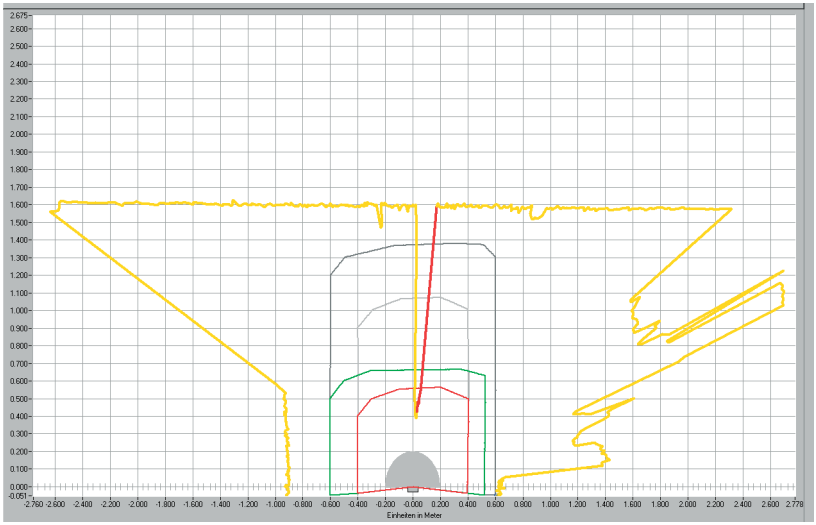
Each topic bar includes the toolbar with standard buttons and buttons for special functions (see chapter, "Buttons", page 65). If you click on an entry in the topic bar, you can use the functions of the selected operating mode (according to your authorization level).

4.3 Work space

The *Work space* screen area is used for graphically displaying measured and room contours and protective and warning field pairs. The software uses the following colors to differentiate the contours:

Table 4.1: Contour colors

Contour	Color
Minimum protective field	Gray
Protective field	Red
Warning field	Green
Deactivated protective field	Bright gray
Deactivated warning field	Dark gray
Measured contour	Yellow/red



Pic. 4.2: Contour display

You recognize the cursor position by a dark-blue circle that changes to a crosshairs when clicked.

With the appropriate authorization you can edit protective and warning fields on the work space (see chapter, "Edit protective and warning fields", page 33).

4.4 Navigation area

In the navigation area the software shows the XY coordinates of the cursor position during the protective and warning field definition. When you click on the work space and pull out a zone with the mouse button pressed, the software shows the area in the position and end position lines. With these coordinates you can precisely locate objects on the work space and display them in detail.

With the arrow buttons arranged in a cross, you can move the displayed image section on the work space. Click on the middle button to optimally position the entire contour field.

Pic. 4.3: Navigation buttons

4.5 Status line

In the *Status line* screen area you receive detailed information in five fields about:

- The communication between PC and Safety Sensor
- The Safety Sensor status
- The selected operating mode of the software
- The active protective/warning field status
- The logged on user's authorization level

Table 4.2: Communication

Display	Status
RS4 synchronous	PC synchronizes the connection between the PC and the Safety Sensor
RS4 connection	Data transfer between PC and Safety Sensor is possible

Table 4.3: Safety Sensor

Display	Status
RS4 -> Measurement mode	Software records measurement data from the Safety Sensor
RS4 -> Configuration	Software transfers configuration data to the Safety Sensor (Sods switched off)
RS4 -> Error	Error in the Safety Sensor (Sods switched off)

Table 4.4: Operating mode

Display	Status
PC -> Measured value display	Software in measured contour display operating mode
PC -> RS4 configuration	Software in configuration operating mode
PC -> Protective/warning field definition	Software in protective/warning field definition operating mode
PC -> RS4 system data	Software in system data operating mode

Table 4.5: Protective/warning field

Display	Status
PF/WF red	Protective and warning field interrupted (Sods switched off)
WF green	Warning field interrupted
Empty	Protective and warning field free

Table 4.6: Logged-on authorization level

Display	Status
Operator (Op)	User is logged in with the *Operator (Op)* authorization level
Maintainer (Ma)	User is logged in with the *Maintainer (Ma)* authorization level
Authorized Customer (AC)	User is logged in with the *Authorized Customer (AC)* authorization level
Production (Pr)	User is logged in with the *Production (Pr)* authorization level.
Development (De)	User is logged in with the *Development (De)* authorization level.

5 Operate

5.1 Procedure when configuring

Proceed as follows to configure a Safety Sensor:

- Connect PC with Safety Sensor
- Start software and log in user
- Create Safety Sensor configuration with the wizard
- Create protective/warning field configuration
- Transfer configuration to the Safety Sensor
- Check echo data

5.2 Install software

Requirements:

- You do **not** need the Safety Sensor to install the software on the PC. If the devices are already connected with one another, ensure that the Safety Sensor is switched off.
- All Windows applications are closed.

- Insert the CD ROM.

  The installation starts automatically.

- If the installation does not start automatically, double-click on the setup.exe file.
- If you want to open the CD's menu, double-click on the setup.exe file.
- Select a language for the interface texts in the installation wizard and in the software and confirm with [OK].

  The installation wizard starts.

- Click on [Next].

  The installation wizard opens the software license contract.

- If you agree with the software license contract, click on [Yes].

↳ If you agree with the recommended installation path, click on [Next].

or

If you want to enter another path, click on [Search]. Select another path, confirm with [OK] and click on [Next].

The wizard installs the software and creates a link on the desktop.

5.3 Log in user

The following chapters provide basic information on the various access rights and the actual login process.

5.3.1 Authorization concept

The access administration enables a target group-oriented login. The functions that are available depend on the selected **authorization level**. Functions that are **not** available in the software are identified by the bright gray buttons.

You do not require any individual user names for the login, but you must select an **authorization level**. The following authorization levels are available:

Table 5.1: Authorization levels and available functions

Authorization level	Functions
Operator (Op)	• Adjust display • Display and analyze measured contour • Load configuration data from the Safety Sensor • Load status information from the Safety Sensor • Display diagnostics list • Create service file • Reset password
Maintainer (Ma)	In addition to the *Operator (Op)* functions: • Load configuration data from the Safety Sensor • Load configuration data from file • Load configuration data from file and transfer to the Safety Sensor • Transfer configuration data from the PC to the Safety Sensor • Print configuration data • Print protective/warning field
Authorized Customer (AC)	In addition to the *Maintainer (Ma)* functions, full access to all user-relevant functions and parameters: • Save configuration data as a file • Change all configuration parameters • Reset Safety Sensor to default values • Define and change protective/warning fields • Set reference contour in the protective field • Print and delete protective/warning fields • Load protective/warning field data from file • Save protective/warning field data • Transfer protective/warning field data from the PC to the Safety Sensor • Calibrate the front screen • Change passwords
Production (Pr)	Manufacturer-specific access
Development (De)	Manufacturer-specific access

All authorization levels except *Operator (Op)* are protected with a **password**. There are the following password types:

- **Default password:** Valid for the software, **cannot** be changed
- **Specific password:** Valid for the Safety Sensor

The software saves the specific password in the connected Safety Sensor and therefore ensures that only authorized users can change the existing configuration.

The password that you must enter in the software depends on the **login situation**:

Table 5.2: Login situations and password types

Login situation	Password type
Software is not connected with Safety Sensor	Default password
Software is connected with Safety Sensor	Specific password

Use the default password when you log in on the Safety Sensor for the **first time**. Change the default password immediately to a specific password. More information is provided in chapter "Login" on page 18 and chapter "Change password" on page 54.

5.3.2 Login

Using software without Safety Sensor

You can use the software without the Safety Sensor, e.g. to edit existing configurations. The functionality of the software is limited.

Requirements:

- Software and Safety Sensor are **not** connected.
- The R232 **serial interface** must be **active** on the PC. If, for example, you use a laptop with a USB adapter, you must first install this interface where necessary.

↳ Click on [Start] in the taskbar.

↳ In the start menu select **Program > Leuze electronic > RS4soft > RS4soft**.

The software starts.
The start screen with information on the version opens.
The **Change authorization level** dialog box opens.

- In the *Authorization level* list select the *Authorized Customer (AC)* entry and enter the **RS4LEUZE** default password.
- Confirm with [OK].

You can use the offered wizard (see page 24) and load a configuration from a file (see page 21).

Using software with the Safety Sensor

You can use the software with the Safety Sensor connected, e.g. to transfer an existing configuration to the Safety Sensor.

Requirements:

- The Safety Sensor is connected to the power supply.
- The Safety Sensor is connected to the PC and turned on.

If you switch on the Safety Sensor **after** the software start and have selected the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization level, you must first log in to the software with the default password.

- Click on [Start] in the taskbar.
- In the Windows® start menu select the menu items **All programs > Leuze electronic > RS4soft > RS4soft**.

  The software starts.
  The start screen with information on the version opens.
  The Safety Sensor automatically contacts the connected PC.
  The software automatically synchronizes the PC and the Safety Sensor.
  The software automatically transfers the configuration from the Safety Sensor and checks the data.
  The **Change authorization level** dialog box opens.
- Change the entry in the *Authorization level* list. If you have selected the *Maintainer (Ma)* or *Authorized Customer (AC)* entry, you must enter a **password** (see page 16).

  When you log in for the **first time**, enter a suitable default password for your authorization level:

  Maintainer (Ma): **RS4IGOY**

  Authorized Customer (AC): **RS4LEUZE**
- Confirm with [OK].

↳ If you have logged in with the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization level for the **first time**, you must **change your password** (see page 64).

The software contacts and checks the connected Safety Sensor.
The *Scanner status information* message appears.

↳ The status information includes administrative and safety-relevant parameters. Compare all safety-relevant parameters with the required parameters of the current application (see chapter, "Print status information", page 49).

↳ Click on [Close].

You can execute the functions available on your authorization level. If you have logged in with the *Authorized Customer (AC)* or *Maintainer (Ma)* authorization level, you can use the offered wizard (see page 24) and load a configuration from a file (see page 21).

5.4 Create new Safety Sensor configuration

To create a new configuration, load an existing configuration and change its parameters. You will find basic information about configurations in chapter (see chapter, "Configuring the Safety Sensor", page 8).

A default configuration file is stored in the **Examples** folder of the program directory. This configuration file standard.rs corresponds with the Safety Sensor's standard configuration in its delivery status. You can use and change the default configuration file as a template.

See also:

- Load Safety Sensor configuration (see page 21)
- Change Safety Sensor configuration parameters (see page 23)

5.5 Change existing Safety Sensor configuration

To change an existing configuration, load a configuration file and change the configuration.

See also:

- Load Safety Sensor configuration (see page 21)
- Change Safety Sensor configuration parameters (see page 23)

5.6 Load Safety Sensor configuration

To create a new configuration or to change an existing configuration, you must first load an existing configuration. You can either open a locally saved configuration file or get the configuration from the Safety Sensor.

See also:

- Load from file (see page 21)
- Get from the Safety Sensor (see page 23)

5.6.1 Load from file

You can load a configuration from the PC, e.g. from the hard disk or from an external drive.

If **no** Safety Sensor is connected, the load process starts after a password-protected login and use of the configuration wizard.

Requirement:

- You are logged in with the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization level.

↳ Select **Settings > Operating mode > Configuration**.

or

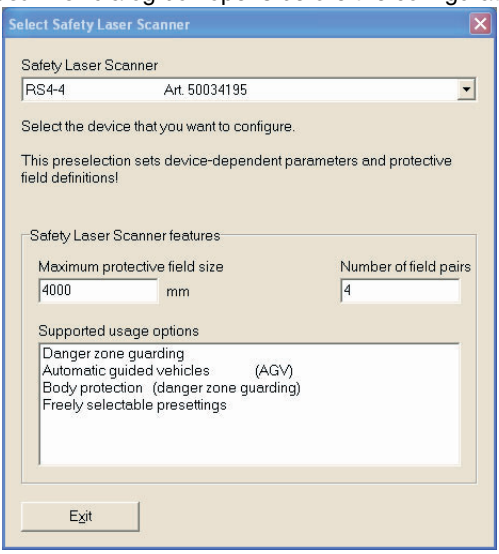
Click in the topic bar on [Configuration].

↳ Select **File> Load configuration data from file**.

or

Click on  .

If you use the software **without** the Safety Sensor, the **Select Safety Laser Scanner** dialog box opens before the configuration wizard starts:



- In the *Safety Laser Scanner* list, select the Safety Sensor that you want to configure and click on [Close].

  The file selection dialog box opens. The **Examples** folder is preset in the program directory.

- Select a file and click on [Open].

  The software loads the configuration file and confirms success with a message.

- Confirm with [OK].

5.6.2 Get from the Safety Sensor

You can load the configuration file saved in the Safety Sensor in the software. If the Safety Sensor is connected with the PC and switched on, the process starts after the program start.

Requirement:

- You are logged in with the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization level.

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **Configuration > Get configuration data from the scanner.**

or

Click on  .

The software loads the configuration file from the Safety Sensor and shows the status information (see chapter, "Login", page 18).

5.7 Change Safety Sensor configuration parameters

To change the parameters of a loaded configuration, you can change individual parameters in a dialog box or use the configuration wizard.

See also:

- Change parameters with the configuration wizard (see page 24)
- Change individual parameters (see page 25)

The parameters that are offered depend on the Safety Sensor.

5.7.1 Change parameters with the configuration wizard

You can change the parameters of the Safety Sensor configuration with a wizard. If the Safety Sensor is connected with the PC and switched on, the process starts after the login.

Requirements:

- You are logged in with the **Authorized Customer (AC)** authorization level.
- A configuration is loaded in the software.

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **Configuration > Wizard**.

or

Click on  .

The configuration wizard starts. Administrative and safety-relevant parameters are thematically combined on several pages.

↳ Enter the values of the parameters that you want to change in the corresponding fields. Click on [Next] to go the next page. Click on [Back] to go the previous page.

↳ Confirm with [OK] when you have made all entries.

The configuration dialog closes.

↳ If the software is connected with the Safety Sensor, the **Memory message** dialog box opens. You can transfer the data from the PC to the Safety Sensor and save it in a file.

↳ Ensure that the checkbox in front of the required function is active and confirm with [OK].

The software executes the selected functions. More information is provided in chapter "Transfer configuration data from the PC to the Safety Sensor" on page 28 and chapter "Save configuration data as a file" on page 30.

or

If you want to discard the changes to the configuration, click on the [Discard] button.

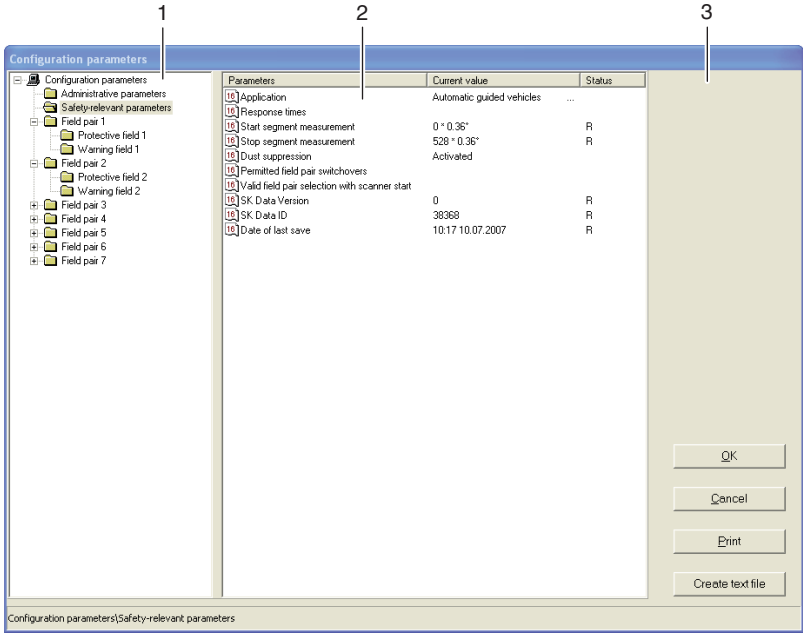
The software resets all changes to the configuration to the last memory status.

or

Click on [Cancel] if you want to edit the configuration further.

5.7.2 Change individual parameters

You can change the parameters of the Safety Sensor configuration in a dialog box. Administrative and safety-relevant parameters are combined in folders with the same name. Protective and warning fields that belong together are combined in the folders Field pair 1 to Field pair 4 respectively.



Pic. 5.1: Configuration parameters dialog box

1 Folder selection
2 Parameter selection
3 Change single value parameters in input area (inactive)

You **cannot** change parameters in R status (read only).

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- A configuration is loaded in the software.

- Select **Settings > Operating mode > Configuration**.

  or

  Click in the topic bar on [Configuration].

- Select **Configuration > Change**.

  or

  Click on  .

  The **Configuration parameters** dialog box opens.

- Click on the folder that you want to change the parameters of.

  The software shows the folder's parameters in the parameter selection.

- Double-click on the parameter that you want to change.

  If you have selected **a single value** parameter, an area on the right inside the configuration dialog opens. The current value is shown and a entry field for the new value is provided.
  or
  If you have selected a **multi value** parameter, a dialog box with entry fields opens, provided with the current values.

- Change the required parameter.

- When you have changed a parameter in the configuration dialog, click on [Accept].

  or

  If you have changed the parameters in the separate configuration dialog, confirm with [OK].

  The separate dialog closes. You are now in the original configuration dialog.

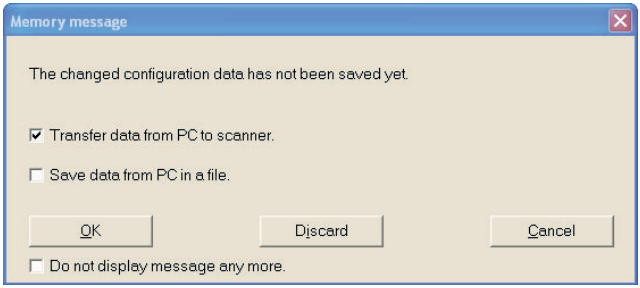
- Click on [Print] if you want to print the configuration.

- Click on [Create text file] if you want to save the configuration in the *.txt format.

- Confirm with [OK] when you have changed all parameters.

You can transfer the changed configuration to the Safety Sensor (see page 28) or save it in a file (see page 30).

If you change the operating mode **before** you have transferred or saved the changed configuration, the **Memory message** dialog box opens:



↳ Ensure that the checkbox in front of the required function is active and confirm with [OK].

The software executes the selected functions. More information is provided in chapter "Transfer configuration data from the PC to the Safety Sensor" on page 28 and chapter "Save configuration data as a file" on page 30.

or

If you want to discard all changes to the configuration, click on the [Discard] button.

The software resets all changes to the configuration to the last memory status.

or

Click on [Cancel] if you want to edit the configuration further.

5.8 Save Safety Sensor configuration

To save the configuration changed in the software, you can transfer the configuration file to the Safety Sensor of save it in a file on the PC.

See also:

- Transfer configuration data from the PC to the Safety Sensor (see page 28)
- Save configuration data as a file (see page 30)

To **document** the configuration you can print the configuration file or save it as a text file in the *.txt format (see page 50).

5.8.1 Transfer configuration data from the PC to the Safety Sensor

In order that your changes to the configuration become effective, you must transfer the changed configuration file to the Safety Sensor.

Requirements:

- Software and Safety Sensor are connected.
- You are logged in with the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.

Alternatively you can transfer a configuration saved on the PC as a file directly to the Safety Sensor (see Page 61: Menu item **Configuration > Load from file and transfer to scanner**).

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **Configuration > Transfer from PC to scanner**.

or

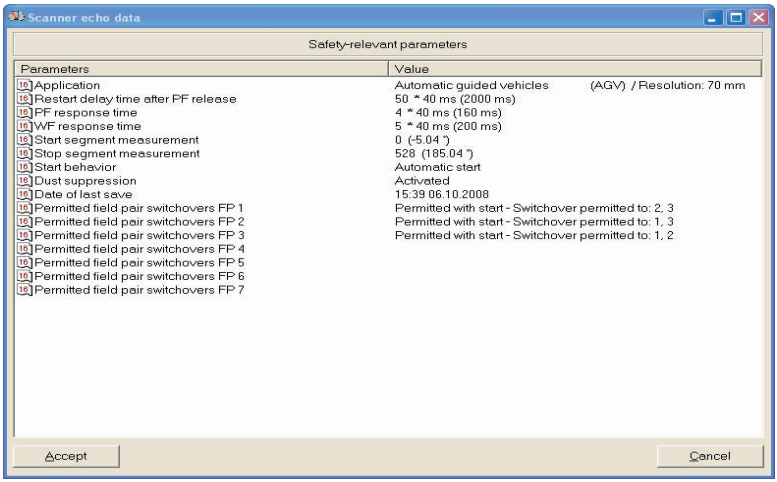
Click on  .

The software checks the configuration file and transfers it to the Safety Sensor.

↳ If you have changed **administrative** parameters, the Safety Sensor does **not** send any echo data.

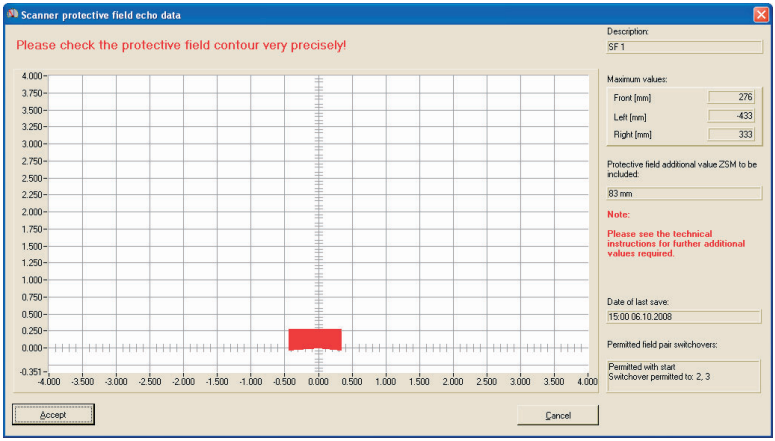
↳ If you have changed **safety-relevant** parameters, the Safety Sensor sends **echo data** to the PC.

The **Scanner echo data** message appears:



↳ Check the echo data and confirm the message with [Accept].

The **Scanner protective field echo data** message opens for each changed protective field, and graphically and numerically displays the changed protective field.



↳ Check the protective field echo data of all protective fields.

↳ If the protective field echo data is correct, confirm the message with [Accept].

The software checks the configuration file and transfers it to the Safety Sensor again.
The **Configuration data transfer from PC to scanner** message opens.

↳ Confirm the message with [OK].

The software has saved the configuration file in the Safety Sensor.

5.8.2 Save configuration data as a file

You can save the loaded configuration on the PC, e.g. on the hard disk or on an external drive.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.

Select the **Save configuration data as a file** function if, for example, a Safety Sensor is not connected with the PC. You can transfer a configuration saved on the PC as a file later to the Safety Sensor.

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **File > Save configuration data as a file**.

or

Click on  .

The dialog box for saving opens. The **Examples** folder is preset in the program directory.

↳ Provide the file with a name and click on [Save].

The software saves the configuration file in the *.rs format.

5.9 Create new protective/warning field configuration

To create a new protective/warning field configuration, load an existing protective/warning field configuration and change its contours. You will find basic information about configurations in chapter "Configuration" on page 8.

A Safety Sensor configuration must be loaded in the software so that you can make changes to a protective or warning field.
You can save the data of an individual protective or warning field configuration as its own file. When you save the Safety Sensor's configuration file, the protective or warning field file is automatically included in the Safety Sensor's configuration file.

See also:

- Load Safety Sensor configuration (see page 21)
- Change existing protective/warning field configuration (see page 31)

5.10 Change existing protective/warning field configuration

To change an existing protective/warning field configuration, load an existing protective/warning field configuration and change its contours. You will find basic information about configurations in chapter "Configuring the Safety Sensor" on page 8.

A Safety Sensor configuration must be loaded in the software so that you can make changes to a protective or warning field.
You can save the data of a protective/warning field configuration as its own file. The file of the Safety Sensor's configuration includes the protective/warning field files of all defined field pairs.

See also:

- Load Safety Sensor configuration (see page 21)
- Load protective/warning field configuration (see page 32)

5.11 Load protective/warning field configuration

To create a new protective or warning field configuration or to change an existing protective or warning field configuration, you must first load an existing protective or warning field configuration.

You can load an **individual** protective or warning field configuration from a file. If a Safety Sensor configuration is already loaded, all defined protective/warning fields in it are automatically loaded.

See also:

- Get from the Safety Sensor (see page 23)
- Load from file (see page 32)

5.11.1 Load protective/warning field configuration from a file

You can load an individual protective or warning field configuration file from the PC, e.g. from the hard disk or from an external drive.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **File > Load protective/warning field from a file**.

or

Click on  .

The file selection dialog box opens. The **Examples** folder is preset in the program directory.

↳ Select a file and click on [Open].

The software loads the configuration file and confirms success with a message.

↳ Confirm with [OK].

5.12 Edit protective and warning fields

You can re-define the loaded protective and warning fields, change contours and set and reset reference contours. You always edit an individual, selected protective or warning field.

See also:

- Select protective and warning fields (see page 33)
  Define protective and warning fields (see page 35)
- Change protective and warning fields (see page 38)
- Set reference contour (see page 44)

Select protective or warning field

To be able to edit a protective or warning field, you must select a field displayed on the work space.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

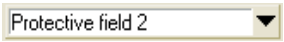
Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Protective/warning field selection**.

The **Protective/warning field selection** dialog opens.

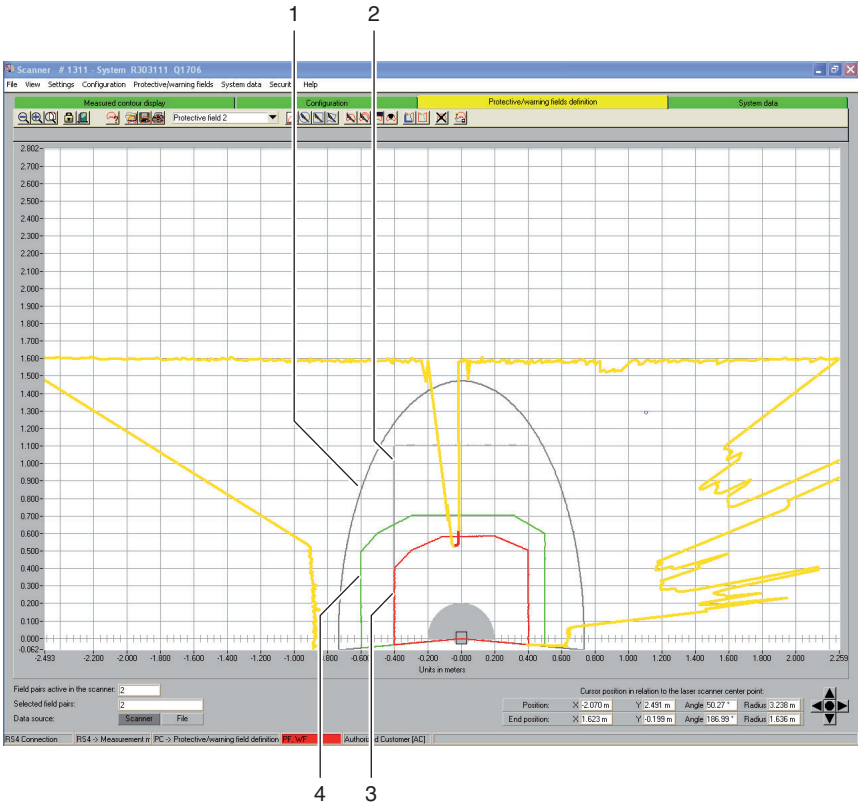
↳ Select an entry in the *Protective/warning fields* list field and confirm with [OK].

or

Select an entry in the list field 

.

The software highlights the field contours of the field pair to which the selected protective or warning field belongs: the protective field contour is red and the warning field contour is green. Field pairs displayed but not selected in the work area are shown in gray.



Pic. 5.2: Protective and warning fields display

1 Not selected warning field
2 Not selected protective field
3 Selected protective field
4 Selected warning field

See also, the **color legend** in chapter "Work space" on page 12.

5.12.1 Define protective and warning fields

You can define a selected protective or warning field by entering absolute values for the zone contour in a dialog. You can also adjust the graphic display of the zone contour continuously (stepless). You can then change the zone contour.

Change numerically

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.
- The protective or warning field is selected.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Define > Numerical field entry**.

or

Click on  .

The **Define protective/warning field** dialog opens.

↳ Enter the values for the front, left and right edge in mm and confirm with [OK].

↳ When a message for angle resolution opens and you want to accept the incremental recommended values, confirm with [Yes].

The software closes the dialog and re-defines the zone contour.

Change graphically

You can define a selected protective or warning field on the work space as an ellipse, a rectangle or a polygon.

With the graphical definition of a definition or warning field, the cursor changes to a **hand** with pointed index finger. Use the hand as a tool to define the zone limits.

You can create a **preview** of the zone contour by holding the left mouse button pressed while you move the hand tool across the work space.

If you define an ellipse or a rectangle, the cursor position corresponds with the **interface** formed by the horizontal and vertical zone contour. It is immaterial here whether the cursor is positioned left or right of the Y axis. The software mirrors the zone contour symmetrically along the Y axis.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.
- The protective or warning field is selected.

Define ellipse

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Define > elliptical zone**.

or

Click on  .

The cursor changes to a hand with pointed index finger.

↳ To mark the interface of the horizontal and vertical line for the ellipse maximum, position the cursor at the corresponding point on the work space.

↳ Left click and hold the button pressed.

The software shows a thin line as a preview of the elliptical zone, in addition to the existing zone.

↳ Check the X and Y values of the cursor position in the navigation area.

↳ Release the left mouse button when the elliptical zone has the desired shape.

The software accepts the symmetrical elliptical shape for the selected protective or warning field.

Define rectangle

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Define > rectangular zone**.

or

Click on  .

The cursor changes to a hand with pointed index finger.

↳ To mark the interface of the horizontal and vertical contour of the rectangle, position the cursor at the corresponding point on the work space.

↳ Left click and hold the button pressed.

The software shows a thin line as a preview of the rectangular zone, in addition to the existing zone.

↳ Check the X and Y values of the cursor position in the navigation area.

↳ Release the left mouse button when the rectangular zone has the desired shape.

The software accepts the symmetrical rectangle shape for the protective or warning field.

Define polygon

The order in which you set the corner points of the polygon depends on the selected contour display:

- If the Safety Sensor is displayed **below** on the work space, set the corner points beside one another from left to right.
- If the Safety Sensor is displayed **above** on the work space, set the corner points beside one another from right to left.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

- Select **Protective/warning fields > Define > polygonal zone**.

  or

  Click on  .

  The cursor changes to a hand with pointed index finger.
- To define the first corner point of the polygon, position the cursor at the corresponding point on the work space.
- Left click and hold the button pressed.

  The software shows a thin line as a preview of the polygon section, in addition to the existing zone.
- Check the X and Y values of the cursor position in the navigation area.
- When the cursor is positioned at the desired point release the left mouse button.
- Set further corner points until the polygon has the desired shape.
- To correct a polygon section, click on the [Delete polygon contour course in steps] button.
- Select [ESC] to delete all polygon sections.

When you have completed the polygon shape, the software connects the end points and accepts the contour for the protective or warning field.

5.12.2 Change protective and warning fields

You can change a previously defined and selected protective or warning field by changing individual segments of the zone contour, which reduce the zone limits or blank out one or more segments.

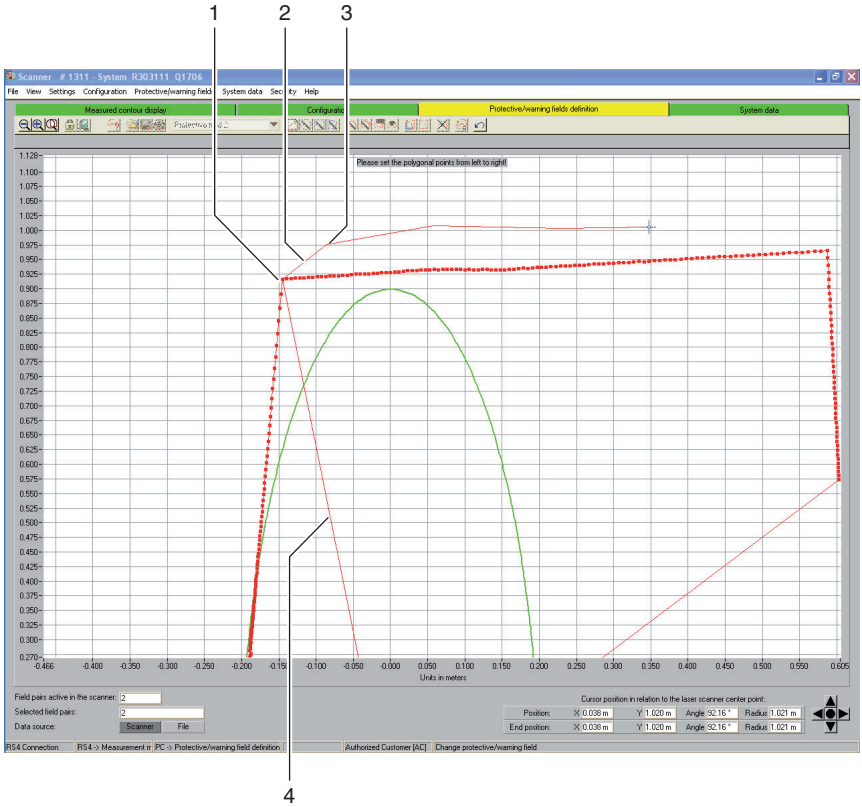
Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.
- The protective or warning field is selected.

Change segments

This function allows you, for example, to enlarge an elliptical warning field by sections.

You can change the course of an individual zone contour between a starting point and an end point by setting two coordinate points on the selected protective or warning field contour. The software connects the contour lying between the two points with a straight line. The software also generates two connection lines between old and new contour in the direction of the Safety Sensor's **beam level**.



Pic. 5.3: Change segments

1 First coordinate point
2 Connection line
3 Second coordinate point
4 Beam axis

- Select **Settings > Operating mode > Protective/warning fields definition**.

  or

  Click in the topic bar on [Protective/warning fields definition].

- Select **Protective/warning fields > Change > Change segments.**

  or

  Click on  .

  The cursor changes to a hand with pointed index finger.
  The software displays the selected contour in bold.

- To define the **first** point of the segment to be changed, position the cursor at the corresponding point on the work space.
- Left click and hold the button pressed.

  The software shows a thin line as a preview of the segment connection line, in addition to the existing zone.

- Check the X and Y values of the cursor position and angle and radius in the navigation area.
- Release the left mouse button when the cursor is positioned at the desired point.

  The software shows a connection line from the Safety Sensor to the starting point of the segment to be changed.

- To define the **second** point of the segment to be changed, position the cursor at the corresponding point on the work space.
- Left click and hold the button pressed.

  The software shows a thin line as a preview of the segment connection line, in addition to the existing zone.

- Check the X and Y values of the cursor position and angle and radius in the navigation area.
- When the cursor is positioned at the desired point, release the left mouse button or click on the work surface.

  The software draws a straight connection line from the first to the second coordinate point.

- Set as many coordinate points as needed until the segment has the desired shape.

The software draws a connection line from the last coordinate point to the Safety Sensor and changes the zone contour according to the new segment line.

Change segments with all zones

This function allows you to change sections with all protective or warning fields at the same time.

↳ Select **Protective/warning fields > Change > Change several segments.**

or

Click on  .

↳ Change the protective or warning field contour (See chapter, "Change segments", page 39).

Reduce field limits

You can reduce the zone limits of a selected protective or warning field by entering absolute values for the zone limits in a dialog.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.
- The protective or warning field is selected.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Change > Reduce zone limits.**

or

Click on  .

The **Change protective/warning field** dialog opens.

↳ Enter a new value for the front, left or right edge in mm and confirm with [OK].

Blank out segments

This function allows you, for example, to reduce a rectangular warning field in pie-piece shapes.

You can blank out individual zone segments between a starting and an end point by setting two coordinate points on the selected protective or warning field contour. The software blanks out the segment lying between the points in the direction of the Safety Sensor's **beam axis**.

Pic. 5.4: Blank out segments

1 Starting point
2 Blanked out segment

- Select **Settings > Operating mode > Protective/warning fields definition**.

  or

  Click in the topic bar on [Protective/warning fields definition].

- Select **Protective/warning fields > Change > Blank out segments.**

  or

  Click on  .

  The cursor changes to a hand with pointed index finger.

- To define the **first** point of the segment, position the cursor at the corresponding point on the work space.
- Left click and hold the button pressed.

  The software shows a thin line as a preview of the segment limit, in addition to the existing zone.

- Check the X and Y values of the cursor position and angle and radius in the navigation area.
- When the cursor is positioned at the desired point, release the left mouse button or click on the work surface.

  The software shows a connection line from the Safety Sensor to the starting point of the segment to be blanked out.

- To define the **second** point of the segment, position the cursor at the corresponding point on the work space.
- Left click and hold the button pressed.

  The software shows the segment area to be blanked out as a gray preview, in addition to the existing zone.

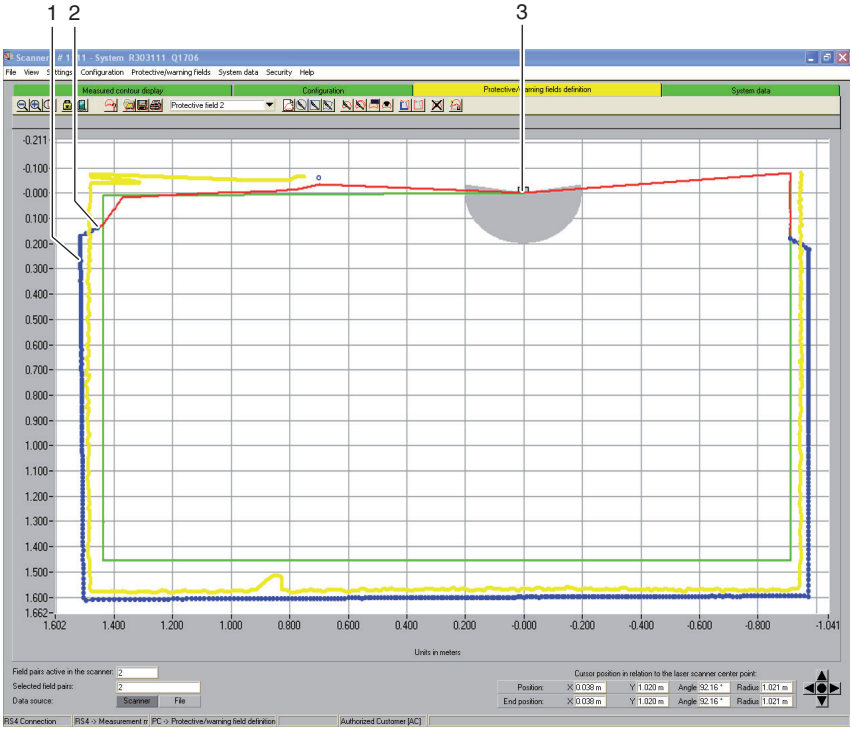
- Check the X and Y values of the cursor position and angle and radius in the navigation area.
- When the cursor is positioned at the desired point, release the left mouse button or click on the work surface.

The software draws a connection line from the Safety Sensor to the end point of the segment to be blanked out and cuts the zone contour around the segment.

5.12.3 Set reference contour

You can create a reference contour in a protective field by setting two coordinate points on the selected protective field contour. The software defines the contour line lying between the points as the reference contour and identifies the reference contour in blue. You **cannot** set a reference contour in a warning field.

If the *Passage control*, *Arm protection* or *Hand protection* application is selected in the configuration, the software **automatically** defines the entire protective field limit as reference contour. You can reset parts of the reference contour retroactively.



Pic. 5.5: Set reference contour

1 Reference contour
2 Transition area between protective field contour and reference contour
3 Safety Sensor

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The changed configuration file is loaded in the software.
- The protective or warning field is selected.
- You have defined a segment in a protective field.

When setting the reference contour, ensure smooth transitions between protective field segments with reference contour and protective field segments without reference contour. The reference contour must lie on the measured contour; the protective field limit slightly before the measured contour.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Reference contour > Set.**

or

Click on  .

The cursor changes to a hand with pointed index finger.

↳ To define the **first** point of the reference contour, position the cursor at the corresponding point on the selected protective field contour.

↳ Left click and hold the button pressed.

The software shows a thin line as a preview of the reference contour limit, in addition to the existing zone contour.

↳ Check the X and Y values of the cursor position and angle and radius in the navigation area.

↳ Release the left mouse button when the cursor is positioned at the desired point.

The software shows a connection line from the Safety Sensor to the starting point of the reference contour.

↳ To define the **second** point of the reference contour, position the cursor at the corresponding point on the selected protective field contour.

↳ Left click and hold the button pressed.

The software shows a blue area as a preview of the reference contour limit, in addition to the existing zone contour.

↳ Check the X and Y values of the cursor position and angle and radius in the navigation area.

↳ Release the left mouse button when the cursor is positioned at the desired point.

The software shows a blue connection line from the starting point to the end point of the reference contour.

↳ If you want to create a reference contour that consists of several sections, repeat the process until the contour corresponds with the desired display.

↳ If you want to delete a reference contour, select **Protective/warning fields > Reference contour > Reset** and proceed in the reverse order.

or

Click on  .

5.13 Save protective/warning field

You can save protective and warning fields as follows:

- When you save a **Safety Sensor configuration**, the software automatically also saves all loaded protective and warning fields in the configuration file (see chapter, "Save Safety Sensor configuration", page 28).
- You can save the selected protective or warning field **individually** in a protective/warning field configuration file (see page 46).
- You can transfer one or more of the displayed protective or warning fields **together** from the PC to the Safety Sensor and save them there (see page 47).

5.13.1 Save as a file

You can save the selected protective or warning field configuration on the PC, e.g. on the hard disk or on an external drive.

If, for example, a Safety Sensor is not connected with the PC, you can load the changed protective/warning field configuration on the PC as a file, then load it again and transfer it to the Safety Sensor.
For complicated zone contours or zones that supplement one another in switchover mode, you can transfer a saved protective/warning field configuration to another field pair.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The protective or warning field is loaded in the software and selected.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **File > Save protective/warning field as a file**.

or

Click on  .

The dialog box for saving opens. The **Examples** folder is preset in the program directory.

↳ Provide the file with a name and click on [Save].

The software saves the protective/warning field configuration file in the *.rs format.

5.13.2 Transfer from the PC to the Safety Sensor

You can transfer one or more zone configurations to the Safety Sensor so that the changed protective or warning field configurations become effective.

Requirements:

- The software is connected with the Safety Sensor.
- You are logged in with the *Authorized Customer (AC)* authorization level.
- The protective or warning fields are loaded in the software.
- The changed protective or warning fields are selected.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Transfer from PC to scanner**.

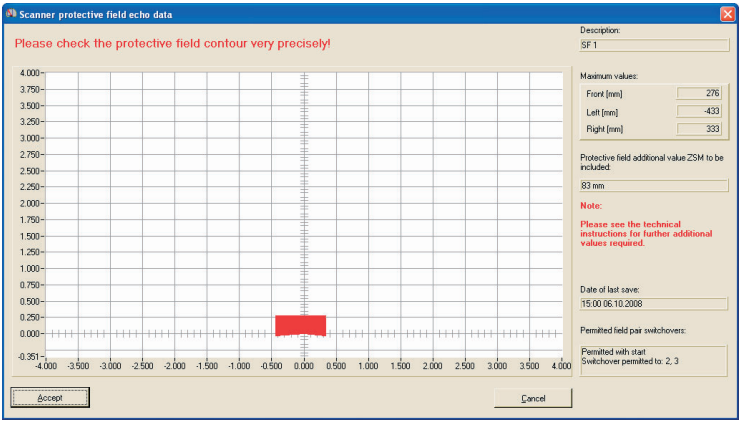
The software checks the data of the connected Safety Sensor.

↳ The **Transfer changed zones to the scanner** message opens with a list of all changed protective and warning fields.

- If you do **not** want to transfer a protective or warning field to the Safety Sensor, deactivate the checkbox in front of the zone name.
- Confirm the message with the [Transfer] button.

  The software transfers the selected protective/warning configuration file to the Safety Sensor.
- The Safety Sensor sends echo data to the PC.

  A **Scanner protective field echo data** message opens for every transferred protective/warning field. The echo data presents the changed protective field graphically and numerically and shows administrative and safety-relevant parameters.



- Check the protective field echo data of all protective fields and confirm accordingly with [Accept].

  The software checks the configuration file and transfers it to the Safety Sensor again.
  The **Transfer protective/warning data from PC to scanner** message opens.
- Confirm the message with [OK].

The software has saved the changed protective and warning field files in the Safety Sensor.

5.14 Document configurations

You can print the following data to document information about the configuration of the Safety Sensor and the protective and warning fields:

- Status information (see page 49)
- Safety Sensor configuration (see page 50)
- Protective/warning field configuration (see page 51)
- Diagram (see page 51)

If a printer is not connected you can save the information as a file in the *.txt format.

5.14.1 Print status information

You can print the Safety Sensor's status information or save it as a text file.

The Safety Sensor's status information includes the following information:

- Administrative parameters, e.g. name, serial number
- Safety-relevant parameters, e.g. protective field additional distance values, startup process
- Permitted field pair switchovers
- Date a zone was last saved
- Output resolution

Requirements:

- The software is connected with the Safety Sensor.
- You have loaded the status information from the Safety Sensor.

↳ Select the menu items **Settings > Operating mode > System data**.

or

Click in the topic bar on the [System data] entry.

↳ Select **System data > Load status information from scanner**.

or

Click on  .

The **Scanner status information** dialog appears.

↳ Click on [Print] to select a printer.

↳ Click on [Create text file] to create a text file.

5.14.2 Print Safety Sensor configuration

You can print the Safety Sensor's configuration or save it as a text file.

The printout and the text file include the following information:

- Print date
- User
- Data source
- Administrative parameters
- Safety-relevant parameters
- *MotionMonitoring* function parameters
  Name of all field pairs and date they were saved

Requirements:

- The software is connected with the Safety Sensor.
- You have loaded the status information from the Safety Sensor.

Printing

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **Configuration > Print**.

or

Click on  .

Create text file

↳ Select **Settings > Operating mode > Configuration**.

or

Click in the topic bar on [Configuration].

↳ Select **Configuration > Change**.

or

Click on  .

The **Configuration parameters** dialog box opens.

↳ Click on [Create text file].

5.14.3 Print protective/warning field configuration

You can print a protective/warning field configuration

The printout and the text file include the following information:

- Name and description of the zone
- Date the zone was last saved
- Permitted field pair switchovers
- Print date
- User
- Data source
- Serial number
- Safety Sensor name
- Graphic display of the zone
- Maximum values
- Blanked out segments

Requirements:

- The software is connected with the Safety Sensor.
- A Safety Sensor configuration is loaded in the software.

↳ Select **Settings > Operating mode > Protective/warning fields definition**.

or

Click in the topic bar on [Protective/warning fields definition].

↳ Select **Protective/warning fields > Print**.

or

Click on  .

The **Print protective/warning fields** dialog opens.

↳ You can select the protective/warning field and optimize the display.

↳ Click on [Print].

5.14.4 Print diagram

You can save and then print diagrams shown on the work space as bitmap files in the *.bmp format.

Requirements:

- The software is connected with the Safety Sensor.
- A Safety Sensor configuration is loaded in the software.

↳ Select **View > Save diagram as a file**.

5.15 Calibrate the front screen

If you have swapped out the Safety Sensor's front screen, e.g. because of dirt, you must calibrate the new front screen. The fault-free functioning of the Safety Sensor can no longer be guaranteed if you do not.

CAUTION

Faulty calibration caused by dirty or scratched front screen

- Only calibrate front screens that are as good as new and clean
- Clean the front screen with RS4-Clean-Set (available from accessories).

Requirements:

- The Safety Sensor's front screen is replaced.
- The Safety Sensor is connected with the PC.
- The ambient temperature is between 20 and 25 °C.
- You are logged in with the *Authorized Customer (AC)* authorization level.

- Select the menu items **Settings > Operating mode > System data**.

  or

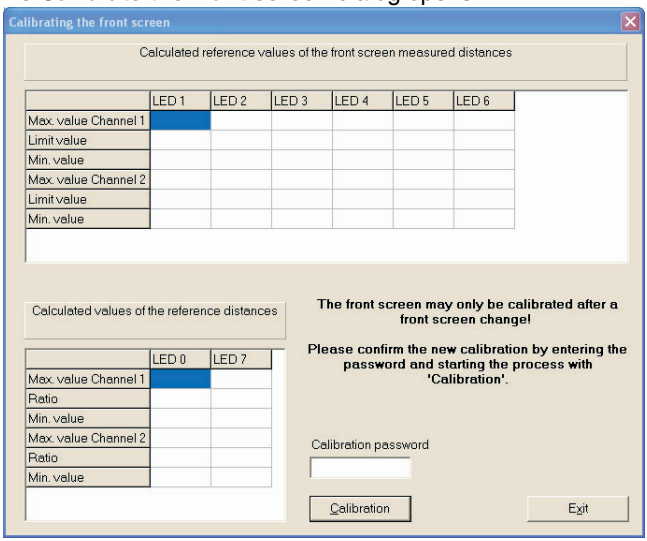
  Click in the topic bar on the [System data] entry.

- Select **System data > Calibrate front screen**.

  or

  Click on  .

The **Calibrate the front screen** dialog opens:



↳ In the *Calibration password* field enter the password **FS8LED** and click on [Calibrate].

The software starts the comparison of the front screen calibration and shows the calculated values of the front screen measured distances and the reference distances in the dialog.

↳ Click on [Close] to close the dialog.

You have calibrated the new front screen and can use the Safety Sensor again.

5.16 Change password

You can change the password with which users of the *Maintainer (Ma)* or *Authorized Customer (AC)* authorization levels log in on the Safety Sensor.

Examples:

- With the **first login** on the Safety Sensor, users of the authorization levels *Maintainer (Ma)* or *Authorized Customer (AC)* use the *Default password* (see page 18). You must then change the *Default password* to a **specific password**. More information on passwords and authorization levels is provided in chapter "Authorization concept" on page 16.
- A user of the *Maintainer (Ma)* authorization level has **forgotten** the password or entered it wrong several times.

A password must be at least six and maximum eight characters long. You can combine letters and numbers and use both lower and uppercase.

Requirements:

- You are logged in with the *Authorized Customer (AC)* authorization level.
- The software is connected with the Safety Sensor.

↳ Select **Security > Change password**.

The **Change password** dialog opens.

↳ In the *Password selection* list select the authorization level for which you want to change the default password.

↳ Enter the new password in the *New password* field, repeat the entry in the *Repeat password* field and confirm with [OK].

The software contacts the connected Safety Sensor and saves the specific password in the Safety Sensor.

5.17 Reset password

If a user of the *Authorized Customer (AC)* authorization level has forgotten their password or entered it wrong several times,they cannot log in on the Safety Sensor. The **Change password** function is therefore not available.

Instead you must reset the password. You do not require a password-protected login to do this. The **Reset password** function is available for users of the *Operator (Op)* authorization level. During a telephone call with the Service department you create a one-time valid password, which the manufacturer confirms and you subsequently change.

Requirements:

- You are logged in with the *Operator (Op)* authorization level.
- The software is connected with the Safety Sensor.

Get in contact

↳ Send an e-mail to service.schuetzen@leuze.de with the following information:

Your company address
A telephone number where you can be reached
Your user name
Safety Sensor serial number

or

Contact your responsible Leuze sales partner and provide them with the information named above.

The Service department will call you back and ask you to perform the following steps during the telephone call:

Create a one-time password

↳ Select **Security > Reset password**.

The **Set new password with one-time password** dialog opens.

↳ On the *Create one-time password* tab select [Create].

The software loads the one-time password from the Safety Sensor and shows it in red writing in the dialog, e.g. **0570DHYG**.

↳ Name the displayed one-time password for the Service department employee.

The employee then creates a new password online and names the new password for you.

Set new password

↳ Select the *Set new password* tab and enter the confirmed one-time password in the *Confirmed one-time password* field.

↳ Enter the new password in the *New password* field, repeat the entry in the *Repeat password* field and confirm with [OK].

The software contacts the connected Safety Sensor and saves the new password for the *Authorized Customer (AC)* authorization level in the Safety Sensor.

The new password is effective after a restart of the software.

5.18 Create diagnostics list and service file

5.18.1 Create diagnostics list

You can load an incident list from the Safety Sensor. With the diagnostics list you can identify errors and define measures (see "Safe implementing" operating instructions).

The diagnostics list contains the following information:

- Safety Sensor serial number
- Firmware version
- Date the diagnostics list was created
- List of the eight last incidents that happened with place, number, parameters

Requirement:

- The software is connected with the Safety Sensor.

↳ Select the menu items **Settings > Operating mode > System data.**

or

Click in the topic bar on the [System data] entry.

↳ Select **System data > Display scanner diagnostics list**.

or

Click on  .

The **Diagnostics list** dialog box opens.

↳ Click on [Re-load] to update the diagnostics list.

↳ Click on [Print] to print the diagnostics list.

↳ Click on [Save] to save the diagnostics list in the *.txt format.

5.18.2 Create service file

You can create a service file in the *.sdc format, which contains the configuration, diagnostics and system data of the connected Safety Sensor.

If you mail the service file to Support, the manufacturer can diagnose possible errors with remote diagnostics.

Requirement:

- The software is connected with the Safety Sensor.

↳ Select the menu items **Settings > Operating mode > System data.**

or

Click in the topic bar on the [System data] entry.

↳ Select **System data > Create service file**.

or

Click on  .

A dialog for saving the service file opens.

↳ Provide the file with a name and click on [Save].

The software saves the service file in the *.sf format.

↳ Send an e-mail with the service file to service.schuetzen@leuze.de with the following information:

Your company address
A telephone number where you can be reached
Your user name
Safety Sensor serial number

6 Menu item reference

You will find overviews of all menu items and buttons in chapter **Menu item reference**.

You will find further information on the interface in chapter "Screen setup" on page 10.

6.1 Menu

The **Menu** chapter will provide you with an overview of all menus and menu items.

Please note that the available menu items depend on both the selected authorization level and the selected operating mode:
If, for example, you want to configure the Safety Sensor, you must be logged in with the *Authorized Customer (AC)* authorized level and be in the **Configuration** operating mode.

6.1.1 File

Table 6.1: Menu items in the **File** menu

Menu item	Function
Load protective/warning field from a file	Opens a single protective or warning field configuration file (see page 32).
Save protective/warning field as a file	Saves a selected protective or warning field configuration as a file (see page 46).
Load configuration data from file	Opens a Safety Sensor configuration file (see page 21).
Save configuration data as a file	Saves the loaded Safety Sensor configuration as a file (see page 30).
Exit configuration program	Exits the software.

6.1.2 View

Table 6.2: Menu items in the **View** menu

Menu item	Function
Zoom	Reduces the work space and the displayed diagram in steps.
Unzoom	Enlarges the work space and the displayed diagram in steps.
Show all	Enlarges the work space and the displayed diagram to full size of 70 x 70 meters.
Save diagram as a file	Saves the displayed diagram as a bitmap file in the *.bmp format.

6.1.3 Settings

Table 6.3: Menu items in the Settings menu

Menu item	Submenu	Function
Operating mode	Measured contour display	Changes to the **Measured contour display** operating mode.
	Configuration	Changes to the **Configuration** operating mode.
	Protective/warning fields definition	Changes to the **Protective/ warning fields definition** operating mode.
	System data	Changes to the **System data** operating mode.

Menu item	Submenu	Function
PC configuration	Interface	Opens a dialog box in which you select the serial interface and the transfer rate.
	Languages	Opens a dialog box in which you select the language of the interface texts.
	Change diagram color	Changes the color of the work space from black to white to optimize it for printouts.
	Rotate contour display by 180°	Rotates the contour display on the work space to adjust the display to the Safety Sensor's mounting situation.
	190° protective/warning fields	Extends the display of the protective/warning fields for the definition by 10°. This setting does not change the measured value recording.
Field pair display		Opens a dialog box in which you select displayed field pairs on the work space.
Activities list		Opens a message that displays all communication processes performed since the software was last started. With the MotionMonitoring function, the activities list shows the individual actions and provides the status of the speed monitoring.

6.1.4 Configuration

Table 6.4: Menu items in the Configuration menu

Menu item	Function
Wizard	Opens the configuration wizard, with which you change the parameters (see page 24).
Change	Opens a dialog in which you change individual parameters (see page 25).
Set default values in the scanner	Sets the Safety Sensor's configuration back to the delivery status (see page 8).
Printing	Prints the configuration file (see page 50).
Load from file and transfer to scanner	Opens an existing configuration file and transfers the data to the Safety Sensor (see page 28).
Get from scanner	Loads the configuration file from the Safety Sensor into the software (see page 23).
Transfer from PC to scanner	Transfers the configuration file to the Safety Sensor (see page 28).

6.1.5 Protective/warning fields

Table 6.5: Menu items in the Protective/warning fields menu

Menu item	Submenu	Function
Protective/warning field selection		Opens a dialog box in which you select the displayed protective/ warning field (see page 33).
Changed protective/warning fields		Opens a dialog box in which all protective/warning fields that were changed since the last save are marked.
Define	Numerical field entry	Opens a dialog box in which you define the edges of a selected protective/warning field (see page 35).
	Elliptical zone	Enables an elliptical protective/ warning field to be defined on the work space (see page 35).
	Rectangular zone	Enables a rectangular protective/ warning field to be defined on the work space (see page 35).
	Polygon zone	Enables a polygonal protective/ warning field to be defined on the work space (see page 35).

Menu item	Submenu	Function
Change	Change segments	Enables a segment to be defined in the selected protective/warning field contour (see page 38).
	Change segment several times	Enables a segment of all protective/warning field contours to be defined at the same time (see page 41).
	Reduce zone limits	Opens a dialog box in which you reduce the zone limits of the selected protective/warning field (see page 38).
	Blank out segments	Enables a segment to be blanked out in the selected protective/ warning field contour (see page 38).
Reference contour	Set	Enables a reference contour to be defined in the selected protective field contour (see page 44).
	Reset	Enables a reference contour to be highlighted in the selected protective field contour (see page 44).
Delete		Deletes the selected protective or warning field.
Printing		Prints the graphic display and some parameters of the selected protective/warning field (see page 51).
Transfer from PC to scanner		Transfers one or more selected protective/warning field configurations to the Safety Sensor (see page 47).

6.1.6 System data

Table 6.6: Menu items in the System data menu

Menu item	Function
Load status information from the Safety Sensor	Transfers the status information from the Safety Sensor to the software (see page 18).
Display the scanner's diagnostics list	Loads an incident list from the Safety Sensor and opens the list in a dialog box (see page 56).
Create service file	Opens a dialog box to save the service file in the *.sdc format. (see page 57).
Calibrate the front screen	Opens a dialog in which you calibrate a new front screen (see page 52).
Reset scanner	Resets the safety-related switching outputs on the Safety Sensor (Reset), required, for example, after cleaning.

6.1.7 Safety

Table 6.7: Menu items in the Security menu

Menu item	Function
Change authorization level	Opens a dialog box in which you can log in with another authorization level (see page 18).
Change password	Opens a dialog box in which you enter a new password for the selected authorization level for the login on the Safety Sensor (see page 54).
Reset password	Opens a dialog box in which you enter a new password for the *Authorized Customer (AC)*authorization level for the login on the Safety Sensor (see page 55).

6.1.8 Help

Table 6.8: Menu items in the Help menu

Menu item	Function
Implement RS4	Opens the Safety Sensor's operating instructions as a PDF file.
Operate RS4soft	Opens the operating instructions of the configuration and diagnostics software as a PDF.
Info	Opens a message with information on the software version

6.2 Buttons

On the topic bar you are provided the standard buttons of the toolbar as well as some topical buttons (see chapter, "Topic bar", page 11).

6.2.1 Toolbar

You will find the toolbar on **all** tabs of the topic bar. The toolbar contains the following buttons for standard functions:

Icon	Button	Function
	Zoom	Reduces the work space and the displayed diagram in steps.
	Unzoom	Enlarges the work space and the displayed diagram in steps.
	Show all	Enlarges the work space and the displayed diagram to full size of 70 x 70 meters.
	Change authorization level	Opens the **Change authorization level dialog box**. You can log in with another authorization level (see chapter, "Login", page 18).
	Exit configuration program	Exits the software.

6.2.2 Measured contour display

In addition to the toolbar, you can also use the following buttons in the **Measured contour display** operating mode.

Icon	Button	Function
	Displayed field pairs selection	See "Settings" on page 59.

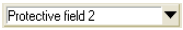
6.2.3 Configuration

In addition to the toolbar, you can also use the following buttons in the **Configuration** operating mode.

Icon	Button	Function
	Load configuration data from file	See "Load from file" on page 21.
	Save configuration data as a file	See "Save configuration data as a file" on page 30.
	Print configuration data	See "Print Safety Sensor configuration" on page 50.
	Load configuration data from a file and transfer to scanner	See "Configuration" on page 61.
	Get configuration data from scanner	See "Get from the Safety Sensor" on page 23.
	Transfer configuration data from PC to scanner	See "Transfer configuration data from the PC to the Safety Sensor" on page 28.
	Change configuration data with the wizard	See "Change parameters with the configuration wizard" on page 24.
	Change configuration data	See "Change individual parameters" on page 25.
	Set default configuration values in the scanner	See "Configuration" on page 61.

6.2.4 Protective/warning fields definition

In addition to the toolbar, you can also use the following buttons in the **Protective/warning fields definition** operating mode.

Icon	Button	Function
	Displayed field pairs selection	See "Settings" on page 59.
	Load protective/warning field from a file	See "Load protective/warning field configuration from a file" on page 32.
	Save protective/warning field as a file	See "Save as a file" on page 46.
	Print protective/warning field	See "Print protective/warning field configuration" on page 51.
	Select protective/warning field	See "Select protective or warning field" on page 33.
	Enter protective/warning field numerically	See "Change numerically" on page 35.
	Define elliptical protective/warning field	See "Change graphically" on page 35.
	Define rectangular protective/warning field	See "Change graphically" on page 35.
	Define polygonal protective/warning field	See "Change graphically" on page 35.
	Change protective/warning segment	See "Change segments" on page 39.
	Change protective/warning segment with all fieldf	See "Change segments with all zones" on page 41.
	Reduce protective/warning field limits	See "Reduce field limits" on page 41.
	Blank out protective/warning field segment	See "Blank out segments" on page 42.
	Define protective field segment as reference contour	See "Set reference contour" on page 44.

Icon	Button	Function
	Reset reference contour definition for protective field segment	See "Set reference contour" on page 44.
	Delete protective/warning field	See "Protective/warning fields" on page 62.
	Transfer changed protective/ warning fields from PC to scanner	See "Transfer from the PC to the Safety Sensor" on page 47.

6.2.5 System data

In addition to the toolbar, you can also use the following buttons in the **Protective/ warning fields definition** operating mode.

Icon	Button	Function
	Transfer status information from scanner to PC	See "Print status information" on page 49.
	Display the scanner's diagnostics list	See "Create diagnostics list" on page 56.
	Create service file	See "Create service file" on page 57.
	Calibrate the front screen	See "Calibrate the front screen" on page 52.
	Reset scanner	See "System data" on page 64.