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Instruments

Sensor

RLS-GD-MONITORING Software V4.5

(PC software for Microsoft® Windows® Vista, XP, 2000, NT® 4.0, Me, 98)

for gloss sensors of the RLS-GD series

This manual describes the installation and operation of the RLS-GD-MONITORING PC software version 4.5.

The software was developed for configuring up to 8 gloss sensors of the RLS-GD series (software version V4.5) in a multi-sensor system that can be used for the continuous inline measurement and inspection of the gloss value of surfaces at several measuring points at the same time. Gloss measurement values are recorded and are also displayed at the PC monitor, and they can be printed out after the end of recording.

The software concept provides two user levels: A password-protected administrator function for configuring the inline gloss measurement system and for setting all the parameters for operation, and an easy-to-use user function that only allows the setting of the start and end of gloss value recording with input of production parameters (that have been determined by the administrator). The print function also is available for the normal user.

As a support for commissioning and operation of the RLS-GD-MONITORING software this manual explains the individual functional elements of the graphic Windows® user interface.



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Shortcuts:	
SEND	F9
GET	F10
GO	F11
STOP	F12



1 Installation of the RLS-GD-MONITORING software

Hardware requirements for successful installation of the RLS-GD-MONITORING software:

- IBM PC AT or compatible PC
- VGA graphics
- Microsoft® Windows® Vista, XP, 2000, NT® 4.0, Me, 98
- Serial RS232 interface at the PC
- Microsoft-compatible mouse
- Cable for the RS232 interface
- CD-ROM drive
- Approx. 5 MByte of free hard disk space

The RLS-GD-MONITORING software can only be installed under Windows. Windows must therefore be started first, if it is not yet running.

Please install the software as described below:

The software can be installed directly from the installation CD-ROM. The CD-ROM contains a 1. folder named INSTALL, where you can find a SETUP program. Start this SETUP program to install the software. 2. The installation program displays a dialog and suggests to install the software in the C:\"FILENAME" directory on the hard disk. You may accept this suggestion with OK or [ENTER], or you may change the path as desired. 3. During the installation process a new program group for the software is created in the Windows Program Manager. In the this program group an icon for starting the software is created automatically. When installation is successfully completed the installation program displays a "Setup OK" message. 4. After successful installation the software can be started with a left mouse button double-click on the icon.

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2 Operation of the RLS-GD-MONITORING software

2.1 Software description

Please read this chapter before you start the process of initialising the software.

When the **RLS-GD-MONITORING** software is started, the following window appears on the Windows user interface:

Depending on the settings in the "Startup Configurationfile", various elements are displayed, hidden, "enabled" or "disabled".

🗮 RLS-GD-MONITORING V4.5							
File Configure Password Rur	File Configure Password RunDataRecording Print ViewData						
GF	-Antriebsseite				GF-Mitte		
2000.0- 1600.0- 1200.0- 800.0- 400.0- 0.0- 0.0- 0 100 200 300	400 500 600 700	300 900 1000	2000.0- 1600.0- 1200.0- 800.0- 400.0- 0.0-, 0.0-, 0	100 200	300 400 500 6	00 700 800	900 1000
SETVALUE 57.0	TOLERANCE 3.0	RESET	SETVALUE	50.0	TOLERANCE	3.0	RESET
GF PP	GF TREND STD DE	V BAD [%]	GF	PP	GF TREND	STD DEV	BAD [%]
0.0 0.0	0.00 0.00	0.00	0.0	0.0	0.00	0.00	0.00
COM PORT 4			COM PORT	5			
	GF-Heizseite				SENSOR 4		
2000.0- 1600.0- 1200.0- 800.0- 400.0- 0.0- 0 100 200 300	400 500 600 700	800 900 1000					
SETVALUE 16.0	TOLERANCE 3.0	RESET					
GF PP	GF TREND STD DE	V BAD [%]					
0.0 0.0	0.00 0.00	0.00					
COM PORT 6	· · · · ·						



2.1.1 "File" menu

File	Configure	Tools	Password	RunDal
1.00	Coningaro	10013	1 03311010	Naniza

Load Configuration File Save Configuration File Save As Startup Configuration File In the **"File"** menu, configuration files that are set under **"Configure"** can be saved to a file or loaded from a file. The **"Save As Startup Configuration File"** item defines the currently set parameters as startup parameters, i.e. these parameters will be loaded automatically when the software is started.

2.1.2 "Configure" menu

Configure	Tools	Password	Rur
Set Sens	or Confi	iguration	
Set Prod	uct Para	meter	- 1
Set Outp	ut Path		- 1
Set Reco	rd Mode	•	

The **"Configure"** menu can be used for performing certain parameter presettings.

A click on "Set Sensor Configuration" opens the following window:

** SENSOR CONFIGURATION PANEL	
ENABLE SENSOR 1	ENABLE SENSOR 2
INSERT SENSOR NAME GF-Antriebsseite	INSERT SENSOR NAME GF-Mitte
🗖 FIXED SETVALUE 🔲 FIXED TOLERANCE 🔽 ENABLE RESET	FIXED SETVALUE FIXED TOLERANCE FINABLE RESET
SENSOR SETVALUE 57.0 TOLERANCE 1+24 3.0	SENSOR SETVALUE 500 TOLERANCE H/H 30
SELECT CONNECTION COM PORT 4 BAUD 57600 -	SELECT CONNECTION COM PORT 5 BAUD 115200
F ENABLE SENSOR 3	ENABLE SENSOR 4
INSERT SENSOR NAME GF-Heizseite	
🗖 FIXED SETVALUE 📕 FIXED TOLERANCE 🛛 🔽 ENABLE RESET	
SENSOR SETVALUE 16.0 TOLERANCE (+/-) 3.0	
SELECT CONNECTION COM PORT 6 BAUD 19200	
ENABLE SENSOR 5	ENABLE SENSOR 6
ENABLE SENSOR 7	ENABLE SENSOR 8

If data should be recorded from a sensor, the sensor must be activated with "ENABLE".

In the "INSERT SENSOR NAME" field a name can be assigned to the sensor. This name will then be displayed in the main window, saved in the output file, and will also be printed.

If "FIXED SETVALUE" is activated, a setpoint value for the gloss rate can be preset under "SENSOR SETVALUE". This value cannot be changed in the main panel. The same applies to "FIXED TOLERANCE".

If "ENABLE RESET" is activated, the graph can be reset in the main panel.

The interface between sensor and PC is determined under "SELECT CONNECTION".



A click on "Set Product Parameter" opens the following window:

* PRODUCT PARAMETER CONFIGUR	TATION PANEL
ENABLE AND SELECT PRODUCT PAR MUST BE STORED IN THE OUTPUT FIL	AMETERS, WHICH ARE FIX AND E AND PRINTED AT THE REPORT
ENABLE PRODUCT PARAMETER 1	Beispiel_MaschinenId
🔽 ENABLE PRODUCT PARAMETER 2	Beispiel_Werk
■ ENABLE PRODUCT PARAMETER : 「	
■ ENABLE PRODUCT PARAMETER 4 「	
ENABLE PRODUCT PARAMETER 5	
ENABLE AND SELECT PRODUCT PARAM BY THE MACHINE OPERATOR WHEN	ETERS, WHICH MUST BE ENTERED N THE MEASUREMENT STARTS
🔽 ENABLE PRODUCT PARAMETER 6	Beispiel_Rollennummer
🔽 ENABLE PRODUCT PARAMETER 7	Beispiel_Auftragsnummer
🔽 ENABLE PRODUCT PARAMETER 8	Beispiel_Mitarbeiter
🔽 ENABLE PRODUCT PARAMETER 9	Beispiel_beliebiger_Anhang
ENABLE PRODUCT PARAMETER 10	
ATTENTION! Don't use the signs /	' V : . * ? " < > I

There are 5 parameters that can be individually entered. All these data are fixed and are, if they are enabled, saved in the file and printed in the report. Parameters 6 to 10, if they are enabled, must be entered by the operator after pressing **"Start"**. These data also are saved in the file and printed.

Attention! The characters / \ : . * ? " < > | must not be used.

000 1	0 000 000 1000 0 100	200 0	"
.)		0.0	
PP	🗮 Insert Product Parameter 🛛 🔀	ър	1
	Beispiel_Rollennummer	.0	ľ
			1
r 3	<u></u> K		
		-	

Example:

"ENABLE PRODUCT PARAMETER 6" is activated and is assigned the input of "Beispiel_Rollennummer" (i.e. example roll number).

When "RunDataRecording" and "Start" is pressed, a window will appear prompting the operator to enter a roll number.



A click on **"Set Output Path"** opens the following window:

🗮 OUTPUT FILE CONFIGURATION PANEL	This window is used for defining the output file.
SELECT HOW TO CREATE THE OUTPUT FILENAME	"SAVE DATA TO FILE" determines whether the data should be stored to a file, or whether they should be visualized only. If "SAVE DATA TO FILE" is not enabled, all setting possibilities will be faded out.
SELECT A FILE EXTENSION XXX. Out	If "OPERATOR CREATES FILENAME MANUALLY" is activated, the software, after the operated presses "Start" , prompts the operator to define an output file.
 CREATE FILENAME AUTOMATICALLY PRODUCT PARAMETER 1 PRODUCT PARAMETER 2 PRODUCT PARAMETER 3 PRODUCT PARAMETER 4 PRODUCT PARAMETER 5 PRODUCT PARAMETER 5 PRODUCT PARAMETER 6 PRODUCT PARAMETER 7 PRODUCT PARAMETER 8 PRODUCT PARAMETER 9 	If "CREATE FILENAME AUTOMATICALLY" is activated, the software automatically creates the output file. The output path is determined with "Output Directory". The file name comprises the activated "PRODUCT PARAMETER", the sensor name and the extension defined under "SELECT A FILE EXTENSION". Under "SELECT DATA WHICH SHOULD BE SAVED TO FILE" that data are selected, which should be stored.
☐ PRODUCT PARAMETER 10 SELECT DATA WHICH SHOULD BE SAVED TO FILE ☐ SAVE CH_REF Image: SAVE GLOSS FACTOR GF ☐ SAVE CH_DIR Image: SAVE PEAK TO PEAK VALUE PP ☐ SAVE CH_DIF Image: SAVE VECTOR NUMBER V-No: ☐ SAVE NORM Image: SAVE TEMP ☐ SAVE INT	INFO! If the output file should be opened with Microsoft EXCEL, the regional settings in Windows should first be set to an Anglo-American country (Great Britain, USA,). The reason for this is that EXCEL interprets the gloss factor, which is a floating point number, as a date information. If the file is saved in the Anglo- American mode, and if the regional settings are then set back to the respective country, EXCEL recognises the gloss factor as a floating point number.

The following steps must be performed to change to an Anglo-American language: Start \rightarrow Settings \rightarrow Control Panel \rightarrow Regional and Language Settings An Anglo-American language can then be selected in the "Regional Settings" tab.



A click on **"Select Record Mode"** opens the following window:

** RECORDER CONFIGURATION PANEL		
SELECT THE RECORD MODE		
SELECT DATA RECORDING AUTO LIMITED		
RECORD-TIME INTERVAL IN SECONDS		
VALUES TO BE RECORDED (MAX 50 000) 1000		

This window is used for determining the data recording mode.

With **"AUTO LIMITED**", an adjustable number of data is recorded after an adjustable time interval.

With "AUTO UNLIMITED" data are recorded after an adjustable time interval until recording is stopped by pressing "Stop".

With "AUTO TRIGGERED" the sensor automatically sends data which are then recorded and saved.

Attention!

For using the "AUTO TRIGGERED" function the sensor must operate in one of the trigger modes, because data only are sent when the trigger condition drops (cf. Manual RLS-GD-Scope V4.4).

2.1.3 "Password" menu

Password RunDataRecording Print Vie	The "File", "Configure
Activate Password Protection Deactivate Password Protection Change Password	password. Password protection ca The default password is (in words: 10 zeros). The password can be ir
CHANGE PASSWORD PANEL	When password prote "Configuration", and ' "Deactivate Passwor password.
NEW PASSWORD CONFIRM PASSWORD	Attention! Password protection Password Protection"
SAVE CHANGES	

ne "File", "Configure", and "Tools" items can be protected by a assword.

Password protection can be enabled and disabled. The default password is: 0000000000 in words: 10 zeros). The password can be individually changed.

When password protection is enabled, the menu items **"File**", **"Configuration**", and **"Tools**" only can be accessed after pressing **"Deactivate Password Protection**" and entering the correct password.

Password protection must be activated again with "Activate Password Protection".

2.1.4 "RunDataRecording" menu

RunDataRecording Start Pause Continue Stop In this menu item data recording can be started with "Start" and stopped with "Stop". Data recording furthermore can be paused with "Pause" and then continued again with "Continue".

The data are immediately saved in the correspondingly created file and are visualised on the user interface.

When "Start" is pressed, the product parameters 6 to 10 that are enabled in "Set Product Parameters" must be entered.

If "OPERATOR CREATES FILENAME MANUALLY" is activated under "Set Output Path", the operator will be prompted to specify a file.



The data are immediately saved in the correspondingly created file and are visualised on the user interface.

For memory space reasons, only the last 1,000 values are shown in the graph.

The output file, however, contains all the values.

The **GF** display shows the last gloss value. This display turns red if the gloss value is outside the tolerance window defined by **SETVALUE** plus/minus **TOLERANCE**.

The **PP** display shows the peak-to-peak value when trigger mode **SELF** or **EXT3** is set at the sensor (cf. RLS GD Scope V4.4).

In the **GF TREND** display the average value of all the gloss values recorded so far is formed and displayed. This display and the graph also turn red, if the tolerance window defined by **SETVALUE** plus/minus **TOLERANCE** is exceeded.

In the **STD DEV** display the standard deviation from average is displayed. The formula of calculation is:

$$STD_DEV = \sqrt{\frac{\sum (GF_i - GF_TREND)^2}{N-1}}$$

The BAD[%] display shows the number of gloss values outside the tolerance window in percent.

Pressing **RESET** sets the graph and the display window back to 0. This has no effect on the data in the file.

2.1.5 "Print" menu

Print ViewData

Print Configuration Data Print Monitoring Data A stored configuration file can be selected and printed by pressing "Print Configuration Data".

"Print Monitoring Data" prints the activated product parameters and a screenshot of the current user interface.



2.1.6 "ViewData" menu

ViewData	For reasons of space only 4 sensors can be displayed on a screen.
Page1	4 sensors.
Page2	"Gloss Values GF", however, shows the gloss values of all 8 connected
Gloss Values GF	sensors.

Attention! The display only shows the sensors that are set to enabled.

👻 RLS-GD-MONITORING V4.5			
File Configure Password RunDataRecording Print ViewData			
GF-Antriebsseite		GF-Mitte	
GF	V-No:	GF	V-No:
0.0	0	0.0	0
GF-Heizseite		SENSOR 4	
GF	V-No:	GF	V-No:
0.0	0	0.0	0
SENSOR 5		SENSOR 6	
GF	V-No:	GF	V-No:
0.0	0	0.0	0
SENSOR 7		SENSOR 8	
GF	V-No:	GF	V-No:
0.0	0	0.0	0