△ Leuze electronic

the sensor people

COMPACT

Safety Light Curtain
(C14, C30, C50, C90, C300/4,
C400/3, C500/2, C301/4, C401/3
and C501/2)
Diagnosis Software

CONNECTING AND OPERATING INSTRUCTIONS

About this user manual

This user manual is included with delivery.

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Welcome to the COMPACT diagnosis software.
This program helps you to check your COMPACT transmitter and/or receiver.

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2 What's new

This software helps you to check your COMPACT hardware.
You can do data recording on transmitter and receiver, analyze the recorded data and do online visualization. Furthermore you can print a summary for recorded data and even export this to a text file.

3   Setup and Installation

In order to use this Program you must the following hardware and software:

- a IBM PC or 100% compatible with 4 MB RAM or more (8 MB for Windows 3.x and 16 MB for
  Windows 95 recommended)
- a Intel™ 486 processor with 33 MHz clock speed or higher (a Pentium™ with 75   MHz recommended)
- a Hard disk with at least 5 MB free space
- a free COM port with 16550 UART (FIFO)
- Microsoft™ Windows™ 3.1 or higher
- a VGA graphic card with at least 640*480 pixels resolution (800*600 recommended)

To install this software insert disk 1 in your floppy disk drive and

– with Windows™ 3.x or Windows NT™ 3.5x choose Run from the program manager's file menu and enter
  A:\setup.exe (replace A:\ with the letter of your FDD)
– with Windows™ 95 or Windows NT™ 4.x press the Start button, choose Run and
  enter A:\setup.exe (replace A:\ with the letter of your FDD)

The setup process is quite simple. You only have to enter the path where to install this program.

After the setup program has finished, double click the Icon COMPACT from the COMPACT program group.

To setup the hardware please follow the instructions delivered with your COMPACT hardware.

The next step is to set the COM port in the Options menu.

That's it!

4   File menu commands

The **File** menu offers the following commands:

Open log file   Opens an existing log file in text mode. Shortcut: Ctrl + O

Print log file   Prints an log file. Shortcut: Ctrl + P

Print setup   Selects a printer and printer connection.

Export log file   Saves an opened log file in plain text. Shortcut: Ctrl + S

Exit   Exits COMPACT diagnosis.

5   View menu commands

The **View** menu offers the following commands:

Toolbar   Shows or hides the toolbar.

Status Bar   Shows or hides the status bar.

Graphic/Text   Toggles between graphic and text mode.
                     Note that in graphic mode the menu item is **Text** and vice versa.

6　　Help menu commands

The **Help** menu offers the following commands, which provide you assistance with this application:

Index　　　　　　　Offers you an index to topics on which you can get help.

Using Help　　　　Provides general instructions on using help.

About　　　　　　Displays the version number of this application.

7   Command File menu

7.1   Open log file (File menu)

Use this command to open an existing log file. The log file is parsed and a summary information is generated.

You can create new documents with the show messages command.

Shortcuts

Toolbar:
Keys: CTRL+O

7.2   File Open dialog box

The following options allow you to specify which file to open:

File Name
Type or select the filename you want to open. This box lists files with the extension you select in the List Files of Type box.

List Files of Type
Select the type of file you want to open:
– Transmitter log files (*.lct)
– Receiver log files (*.lcr)

Drives
Select the drive in which COMPACT diagnosis stores the file that you want to open.

Directories
Select the directory in which COMPACT diagnosis stores the file that you want to open.

Network...
Choose this button to connect to a network location, assigning it a new drive letter.

8　Export log file command (File menu)

Use this command to export the active log file to plain text. When you save a log file, COMPACT diagnosis displays the Report information dialog.

Shortcuts

Toolbar:
Keys:　　　　CTRL+S

8.1　File Save As dialog box

The following options allow you to specify the name and location of the file you're about to save:

File Name

Type a new filename to save a document with a different name. A filename can contain up to eight characters and an extension of up to three characters. COMPACT diagnosis adds the extension you specify in the Save File As Type box.

Drives

Select the drive in which you want to store the document.

Directories

Select the directory in which you want to store the document.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.

8.2　1, 2, 3, 4 command (File menu)

Use the numbers and filenames listed at the bottom of the File menu to open the last four documents you closed. Choose the number that corresponds with the document you want to open.

8.3　Exit command (File menu)

Use this command to end your COMPACT diagnosis session.

Shortcuts

Mouse: Double-click the application's Control menu button.

Keys: ALT+F4

9 Command view menu

9.1 Toolbar command (View menu)

Use this command to display and hide the Toolbar, which includes buttons for some of the most common commands in COMPACT diagnosis, such as **File Open**. A check mark appears next to the menu item when the Toolbar is displayed.

See Toolbar for help on using the toolbar.

9.2 Toolbar

The toolbar is displayed across the top of the application window, below the menu bar. The toolbar provides quick mouse access to many tools used in COMPACT diagnosis,

To hide or display the Toolbar, choose Toolbar from the View menu (ALT, V, T).

Click   To

Open an existing log file. COMPACT diagnosis displays the Open dialog box, in which you can locate and open the desired file.

Save the active log file as text and prompts for a filename

Print the active log file.

Starts or stops the online visualization.

9.3 Status Bar command (View menu)

Use this command to display and hide the Status Bar, which describes the action to be executed by the selected menu item or depressed toolbar button, and keyboard latch state. A check mark appears next to the menu item when the Status Bar is displayed.

See Status Bar for help on using the status bar.

9.4   Status Bar

```
                                               CAP  ┌────┐  ┌──────┐
                                               └───┘ └────┘  └──────┘
```

The status bar is displayed at the bottom of the COMPACT diagnosis window. To display or hide the status bar, use the **Status Bar** command in the View menu.

The left area of the status bar describes actions of menu items as you use the arrow keys to navigate through menus. This area similarly shows messages that describe the actions of toolbar buttons as you depress them, before releasing them. If after viewing the description of the toolbar button command you wish not to execute the command, then release the mouse button while the pointer is off the toolbar button.

The right areas of the status bar indicate which of the following keys are latched down:

Indicator	Description
CAP	The Caps Lock key is latched down.
NUM	The Num Lock key is latched down.
SCRL	The Scroll Lock key is latched down.

10 Command help menu

10.1 Index command (Help menu)

Use this command to display the opening screen of Help. From the opening screen, you can jump to step-by-step instructions for using COMPACT diagnosis and various types of reference information.

Once you open Help, you can click the **Contents** button whenever you want to return to the opening screen.

10.2 Using Help command (Help menu)

Use this command for instructions about using Help.

10.3 About command (Help menu)

Use this command to display the copyright notice and version number of your copy of COMPACT diagnosis.

10.4 Context Help command

Use the Context Help command to obtain help on some portion of COMPACT diagnosis. When you choose the Toolbar's Context Help button, the mouse pointer will change to an arrow and question mark. Then click somewhere in the COMPACT diagnosis window, such as another Toolbar button. The Help topic will be shown for the item you clicked.

Shortcut
Keys: SHIFT+F1

10.5 Title Bar

The title bar is located along the top of a window. It contains the name of the application and log file or the current mode.

To move the window, drag the title bar. Note: You can also move dialog boxes by dragging their title bars.

A title bar may contain the following elements:

• Application Control-menu button
• Document Control-menu button
• Maximize button
• Minimize button
• Name of the application
• Name of the document
• Restore button

10.6   Scroll bars

Displayed at the right and bottom edges of the document window in text mode. The scroll boxes inside the scroll bars indicate your vertical and horizontal location in the document. You can use the mouse to scroll to other parts of the document.

11 Command system Menu

11.1 Size command (System menu)

Use this command to display a four-headed arrow so you can size the active window with the arrow keys.

⟡

After the pointer changes to the four-headed arrow:
1. Press one of the DIRECTION keys (left, right, up, or down arrow key) to move the pointer to the border you
   want to move.
2. Press a DIRECTION key to move the border.
3. Press ENTER when the window is the size you want.

Note: This command is unavailable if you maximize the window.

Shortcut
Mouse: Drag the size bars at the corners or edges of the window.

11.2   Move command (Control menu)

Use this command to display a four-headed arrow so you can move the active window or dialog box with the arrow keys.

Note: This command is unavailable if you maximize the window.

Shortcut
Keys: CTRL+F7

11.3 Minimize command (application Control menu)

Use this command to reduce the COMPACT diagnosis> window to an icon.

Shortcut

Mouse: Click the minimize icon [▼] on the title bar.
Keys: ALT+F9

11.4 Maximize command (System menu)

Use this command to enlarge the active window to fill the available space.

Shortcut

Mouse: Click the maximize icon [▲] on the title bar; or double-click the title bar.
Keys: CTRL+F10 enlarges a document window.

11.5 Close command (Control menus)

Use this command to close the active window or dialog box.
Double-clicking a Control-menu box is the same as choosing the Close command.

Shortcuts
Keys: ALT+F4 closes the COMPACT window or dialog box

11.6 Restore command (Control menu)

Use this command to return the active window to its size and position before you chose the Maximize or Minimize command.

11.7 Switch to command (application Control menu)

Use this command to display a list of all open applications. Use this "Task List" to switch to or close an application on the list.

Shortcut

Keys: CTRL+ESC

Dialog Box Options

When you choose the Switch To command, you will be presented with a dialog box with the following options:

Task List

Select the application you want to switch to or close.

Switch To

Makes the selected application active.

End Task

Closes the selected application.

Cancel

Closes the Task List box.

Cascade

Arranges open applications so they overlap and you can see each title bar. This option does not affect applications reduced to icons.

Tile

Arranges open applications into windows that do not overlap. This option does not affect applications reduced to icons.

Arrange Icons

Arranges the icons of all minimized applications across the bottom of the screen.

12   Command View Menu

12.1   Graphic command (View menu)

This command toggles between graphic and text mode.

In graphic mode you can visualize data received by the receiver, record transmitter or receiver data to a log file and analyze a log file.

The text mode gives summary information about a log file. You can print or export this summary as text file.

13 Command Diagnosis Menu

13.1 Generate log file (receiver diagnosis menu)

This command shows the receiver data recording dialog.

Shortcuts

Keys: F5

13.2 Analyze log file command (receiver diagnosis menu)

This command shows the analyze log file dialog. Choose this command to analyze a transmitter log file.

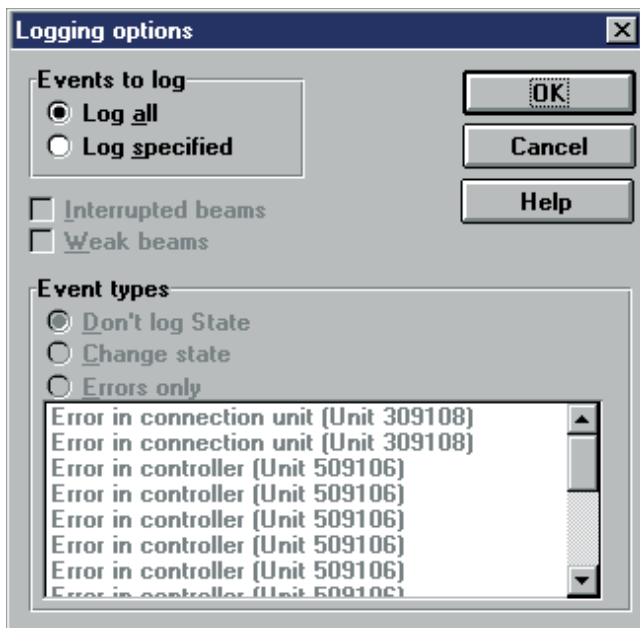**Shortcuts**

Keys: SHIFT+F5

13.3 Analyze log file dialog

With this dialog you can analyze a log file recorded with the receiver data recording dialog.

If the default log file receiver.lcr exists it is initially displayed. To choose a different log file click the button **Browse**.

Use the scroll bar to position the error you are interested in.

13.4   Logging options dialog

With this dialog you can log only selected errors and/or states.

To log all errors and/or states choose the Log all radio button, to specify what to log choose **Log specified**.

To log interrupted beams check **Interrupted beams.**

To log weak beams check **Weak beams.**

If you are interested in state changes choose either **Change state** to log every state change or **Errors only** to specify which errors you are interested in. To select the errors to log select the errors in the errors list box.

13.5   Receiver data recording dialog
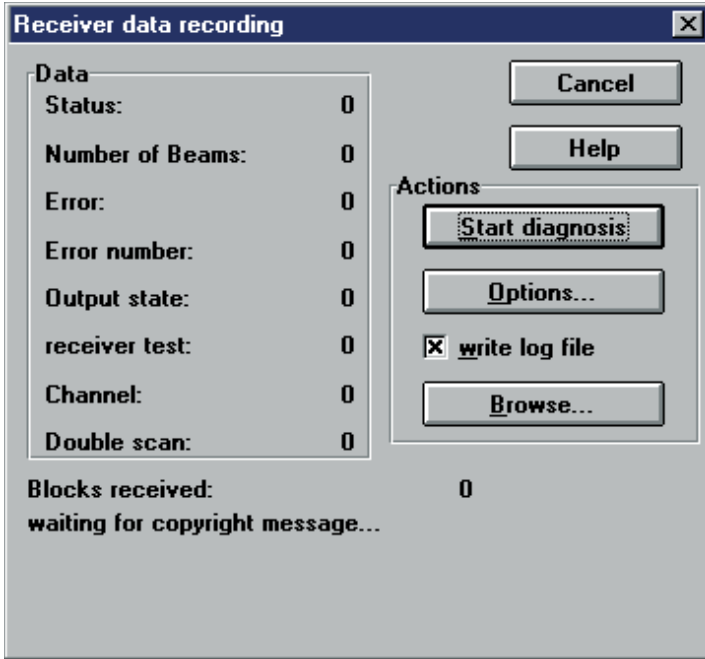
With this dialog you can do the data recording. In the **Data group** box you can see the data as it is received from the transmitter.

To start data recording click the button **Start diagnosis.**

To write a log file check the check box **write log file.** If this check box is checked the button **Browse** is enabled and you can choose a filename and path. The default filename is **receiver.lcr.**

To record only selected errors choose the button **Options** to show the Logging options dialog.

Hint:

waiting for copyright message... means that you have to start data recording with switched off light curtain (no data transmission). After you have pressed Start Diagnosis start your light curtain. The first sent data is the copyright and the firmware version of your light curtain. If this data wasn't received (diagnosis is started and light curtain is already switched on), the message **waiting for copyright message...** remains on the dialog.

13.6   Receiver menu commands (Diagnosis menu)

The Receiver menu offers the following commands:

generate log file   Shows dialog for data recording. Shortcut: F5

analyze log file   Shows dialog for analyzing a recorded log file. Shortcut: SHIFT+F5

Visualization   Starts or stops the on-line diagnosis of receiver data. Shortcut: F8

This command is enabled only in graphic mode. To enable graphic mode choose Graphic from the View menu. If this menu item is checked then the graphic mode is enabled.

13.7   Visualization (receiver diagnosis menu)

This command starts or stops the on-line visualization of the COMPACT receiver.
You can see the beams as graphic lines.

Shortcuts

Toolbar:
Keys: F8

14   Diagnosis menu commands

The Diagnosis menu offers the following commands:

Transmitter   Shows commands for transmitter diagnosis

Receiver   Shows commands for receiver diagnosis

The commands of this menu and its submenus are enabled only if in graphic mode. To enable graphic mode choose Graphic from the View menu. If this menu item is checked then the graphic mode is enabled.

15   Command of Options menu

Options

The File menu offers the following commands:

Colors   Displays a dialog where you can set the colors of the on-line visualization

Test mode   Displays a dialog where you can enable a test mode for this application

Port settings   Displays a dialog where you can set the port settings that COMPACT will use for data connection

The commands of this menu and its submenus are enabled only if in graphic mode. To enable graphic mode choose Graphic from the View menu. If this menu item is checked then the graphic mode is enabled.

15.1   Colors (Options menu)

This command shows the Colors dialog. With this dialog you can modify the colors of the on-line visualisation.

15.2   Test mode (Options menu)

This command shows the Testmode dialog. With this dialog you can activate a test mode. In test mode the COMPACT software reads test data from a file and not from the Hardware. This allows you to explore the COMPACT diagnosis software.

15.3   Port settings (Options menu)

This command shows the Port settings dialog. With this dialog you can set the serial port that COMPACT diagnosis is using.

15.4   Color settings dialog
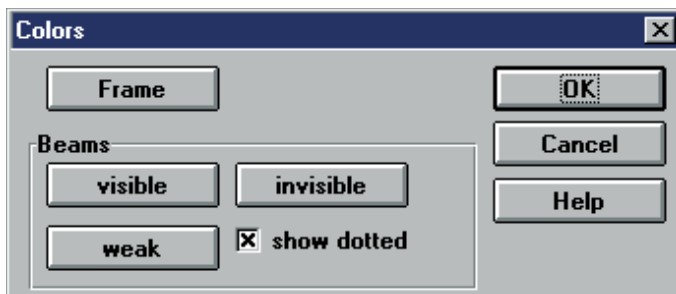
With this dialog you can set the colors for the **Frame** which represents the COMPACT hardware, the Beams when **visible**, **invisible** and **weak**.

For weak beams you can also check the check box to show these beams with a dotted line. When you choose the buttons the Color dialog is displayed.

15.5　Test mode dialog
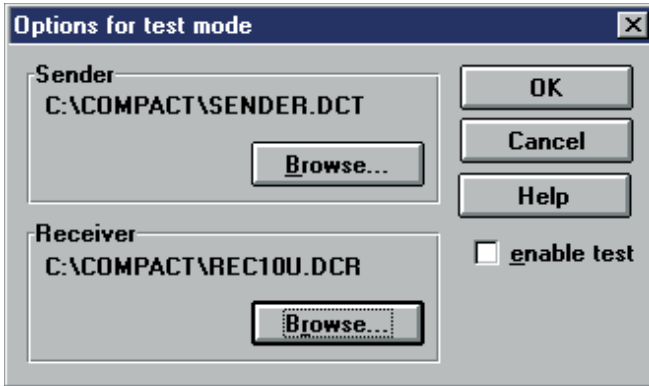
With this dialog you can choose datafiles to test the application and to learn how this software is used. To enable test mode check the enable test check box.

When enabled, the data is read from the files shown in this dialog and not from the communication port.

15.6   Port settings

With this dialog you can set the various options for the communication port. In general you must only change the port where your COMPACT hardware is connected.

Port: Choose the right port from the list

Baud rate: The transmitter operates at 9600 baud, the receiver at 57600   baud.

Parity: Choose **none** (the default)

Stop bits: Choose **1** (the default)

15.7   Transmitter data recording dialog
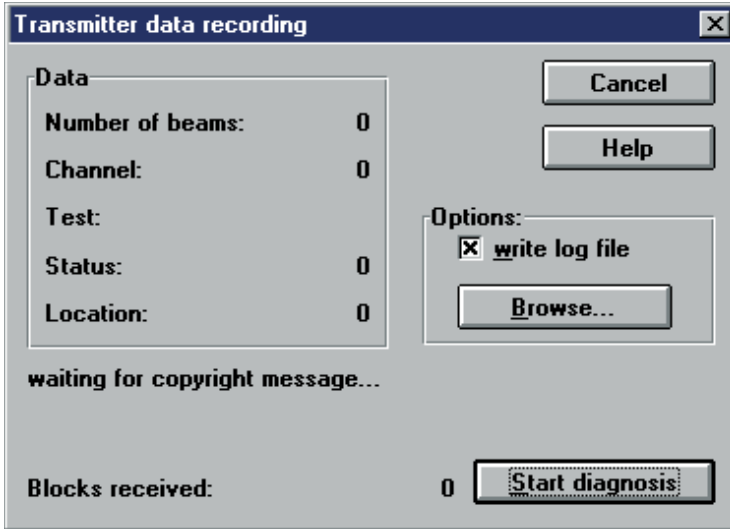
With this dialog you can do the data recording. In the **Data** group box you can see the data as it is received from the transmitter.

To start data recording click the button **Start diagnosis.**

To write a **log file** check the check box write log file. If this check box is checked the button **Browse** is enabled and you can choose a filename and path. The default filename is **Sender.lct.**

Hint:

waiting for copyright message... means that you have to start data recording with switched off light curtain (no data transmission). After you have pressed **Start Diagnosis** start your light curtain. The first sent data is the copyright and the firmware version of your light curtain. If this data wasn't received (diagnosis is started and light curtain is already switched on), the message **waiting for copyright message...** remains on the dialog.

15.8 Generate log file (transmitter diagnosis menu)

This command shows the transmitter data recording dialog.

Shortcuts
Keys: F4

15.9 Analyze log file dialog (transmitter diagnosis menu)
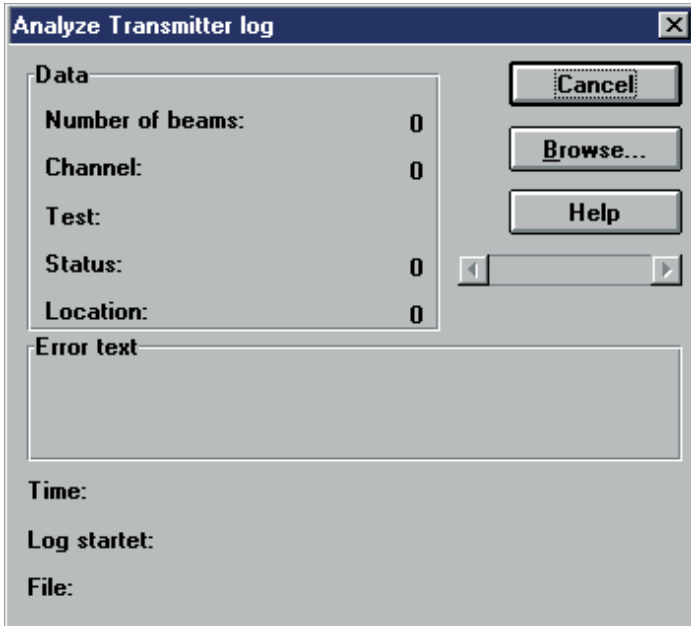
With this dialog you can analyze a log file recorded with the transmitter data recording dialog.

If the default log file **sender.lct** exists it is initially displayed. To choose a different log file click the button **Browse.**

Use the scroll bar to position the error you are interested in.

15.10 Analyze log file command (transmitter diagnosis menu)

This command shows the analyze log file dialog. Choose this command to analyze a transmitter log file.

Shortcuts
Keys: Shift+F4

15.11   Transmitter menu commands (Diagnosis menu)

The Transmitter menu offers the following commands:
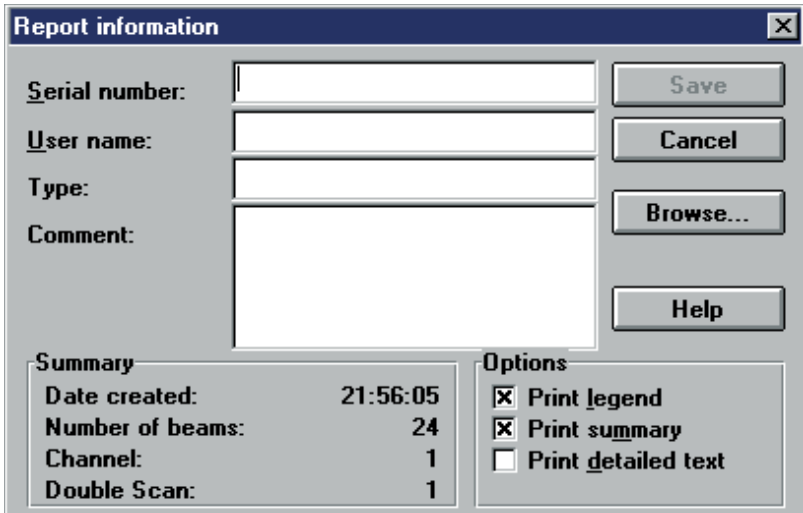
generate log file   Shows dialog for data recording. Shortcut: F4

analyze log file   Shows dialog for analyzing a recorded log file. Shortcut: Shift+F4

This command is enabled only if in graphic mode. To enable graphic mode choose Graphic from the View menu.
If this menu item is checked then the graphic mode is enabled.

15.12   Report information dialog

This dialog is displayed before exporting or printing a log file. You can enter information which is included in the resulting output. Furthermore you can choose what further information should be included by checking the appropriate check boxes.

Serial number: Enter the serial number of the device you are testing. (required)

User name: Enter your name. (required)

Type: Enter the type of the device you are testing. (optional)

Comment: Enter up to 100 characters of further information that should be included in the output. (optional)

Print legend   If checked a description of the columns in the output is included.
                    (enabled only if current file is a receiver log file)

Print summary   If checked the summary information is included in the output as
                    shown in this dialog.
                    If the current file is a transmitter log file then Double Scan is not
                    included.

Print detailed text If checked detailed error information is included in the output.

Browse   Displays the Save As dialog box where you can choose a file name
                    and path for export. (enabled only if exporting a file)

16　How to diagnose a COMPACT transmitter

Follow these simple steps to test a COMPACT transmitter.

1　　Make sure the COMPACT transmitter is connected to a COM port of your computer and that COMPACT diagnosis software is setup correctly

2　　Make sure that COMPACT diagonsis software is in graphic mode. The title bar should read like COMPACT Diagnosis - (Graphic mode). You toggle between text and graphic mode by choosing **View** ⇒ **graphik** or **View** ⇒ **Text**.

3　　Show the transmitter data recording dialog by choosing **Diagnosis** ⇒ **Transmitter** ⇒ **generate log file** from the menu bar or via **F4**

4　　Make sure the write **log file** checkbox is checked. You can choose a file name and path by clicking the Browse command button or accept the default (sender.lct).

5　　Click the **Start diagnosis** command button

6　　Switch on power at the COMPACT transmitter

7　　After a few seconds you should see the copyright message and blocks received increasing

8　　The configuration of your COMPACT transmitter should match the data displayed in the Data group

9　　Click **Stop diagnosis** command button

10　　Close the dialog by choosing **Cancel** or by pressing **ESC**

11　　Show the analyze log file dialog by choosing **Diagnosis** ⇒ **Transmitter** ⇒ **analyze log file** from the menu bar or via SHIFT+F4

12　　If you have used the default file name for data recording you already see the log file displayed. Otherwise select the log file by clicking **Browse**

13　　Step through the log file with the scrollbar

14　　Close the dialog by choosing **Cancel** or by pressing **ESC**

15　　Enter Text mode by selecting **View** ⇒ **text**

16　　Open the log file by choosing **File** ⇒ **Open** log file

17　　Choose **File** ⇒ **Print** log file to show the report information dialog

18　　Enter the information required and click **Print**

Congratulations! You have successfully tested your COMPACT transmitter.

17   How to diagnose a COMPACT receiver

Follow these simple steps to test a COMPACT receiver.

1   Make sure the COMPACT receiver is connected to a COM port of your computer and that COMPACT diagnosis software is setup correctly

2   Make sure that COMPACT diagonsis software is in graphic mode. The title bar should read like COMPACT Diagnosis - (Graphic mode). You toggle between text and graphic mode by choosing **View** ⇒ **graphik** or **View** ⇒ Text.

3   Show the receiver data recording dialog by choosing **Diagnosis** ⇒ **Receiver** ⇒ **generate log file** from the menu bar or via F5

4   Make sure the write log file checkbox is checked. You can choose a file name and path by clicking the Browse command button or accept the default (**receiver.lcr**).

5   You can select logging options by clicking the Options command button if you like

6   Click the **Start diagnosis** command button

7   Switch on power at the COMPACT receiver

8   After a few seconds you should see the copyright message and blocks received increasing

9   The configuration of your COMPACT receiver should match the data displayed in the Data group

10   Click **Stop** diagnosis command button

11   Close the dialog by choosing **Cancel** or by pressing **ESC**

12   Show the analyze log file dialog by choosing **Diagnosis** ⇒ **Receiver** ⇒ **analyze log file** from the menu bar or via SHIFT+F5

13   If you have used the default file name for data recording you already see the log file displayed.
Otherwise select the log file by clicking **Browse**

14   Step through the log file with the scrollbar

15   Close the dialog by choosing **Cancel** or by pressing **ESC**

16   Enter Text mode by selecting **View** ⇒ **text**

17   Open the log file by choosing **File** ⇒ **Open log file**

18   **Choose File** ⇒ **Print log file** to show the report information dialog

19   Enter the information required and click **Print**

Congratulations! You have successfully tested your COMPACT receiver.

18   How to visualize a COMPACT receiver

Follow these simple steps to visualize COMPACT receiver data on-line.

1   Make sure the COMPACT receiver is connected to a COM port of your computer and that COMPACT diagnosis software is setup correctly

2   Make sure that COMPACT diagnosis software is in graphic mode. The title bar should read like COMPACT Diagnosis - (Graphic mode). You toggle between text and graphic mode by choosing **View ⇒ graphik** or **View ⇒ Text**.

3   Start the on-line visualization by choosing **Diagnosis ⇒ Receiver ⇒ Visualization file** from the menu bar or via F8

4   Switch on power at the COMPACT receiver

5   After a few seconds you should see the beams displayed

6   The number of beams displayed should match the number of beams of your COMPACT receiver

7   Stop the on-line visualization by choosing **Diagnosis ⇒ Receiver ⇒ Visualization file** from the menu bar or via F8Close the dialog by choosing Cancel or by pressing ESC

8   Move the mouse over the beams. At the statusbar you can see the beam count and the currently selected (by mouse pointer) beam number. **Hint:** This kind of visualization is not available in zoom mode.

Congratulations! You have successfully tested your COMPACT receiver.

18.1   Print command (File menu)

Use this command to print a document. This command presents the Report information dialog, where you may specify the output.

Shortcuts

Toolbar:
Keys: CTRL+P

18.2   Print dialog box

The following options allow you to specify how the document should be printed:

Printer

This is the active printer and printer connection. Choose the Setup option to change the printer and printer
connection.

Setup

Displays a Print Setup dialog box, so you can select a printer and printer connection.

18.3   Print Setup command (File menu)

Use this command to select a printer and a printer connection. This command presents a Print Setup dialog box, where you specify the printer and its connection.

18.4   Print Setup dialog box

The following options allow you to select the destination printer and its connection.

Printer

Select the printer you want to use. Choose the Default Printer; or choose the Specific Printer option and select
one of the current installed printers shown in the box. You install printers and configure ports using the Windows Control Panel.

Orientation

Choose Portrait or Landscape.

Paper Size

Select the size of paper that the document is to be printed on.

Paper Source

Some printers offer multiple trays for different paper sources. Specify the tray here.

Options

Displays a dialog box where you can make additional choices about printing, specific to the type of printer you have selected.

Network...

Choose this button to connect to a network location, assigning it a new drive letter.