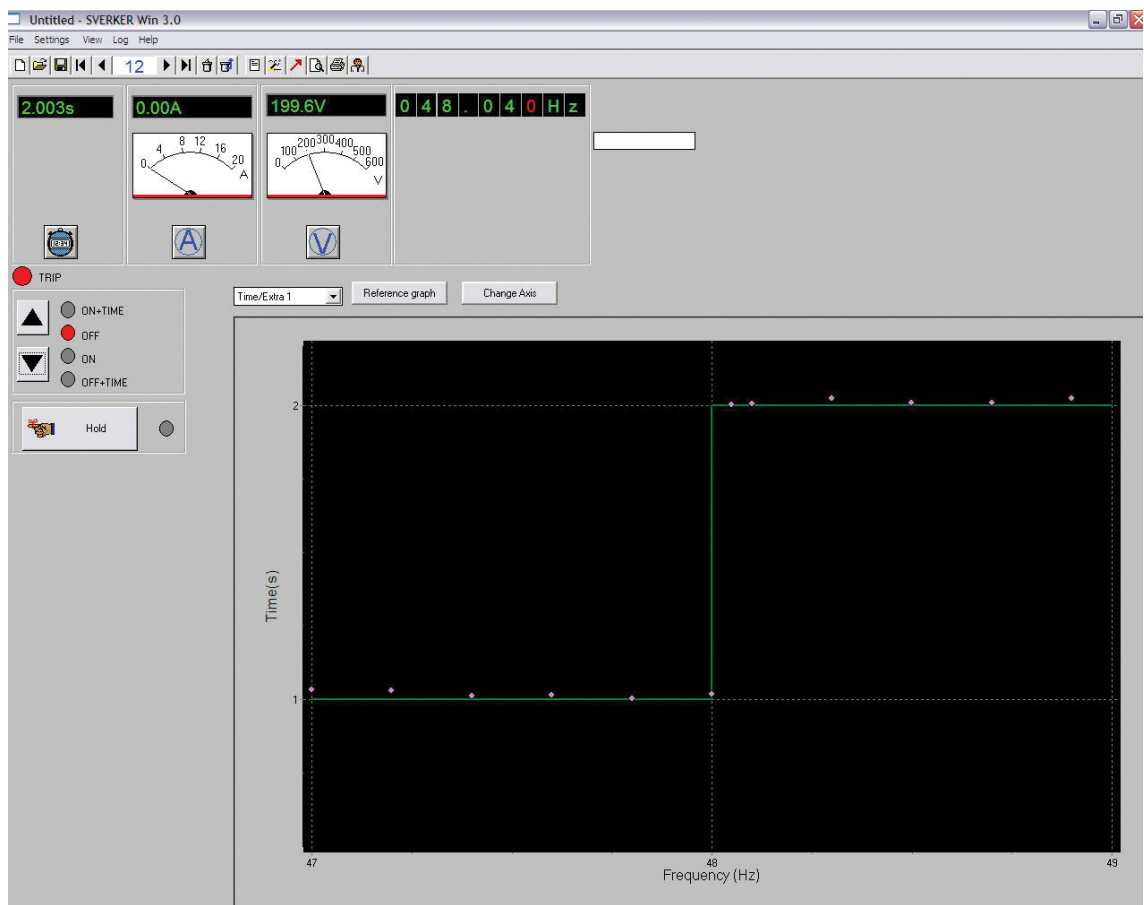


SVERKER Win 3.0

Software for SVERKER 750/760/780

User's Manual



Megger

WWW.MEGGER.COM

SVERKER Win 3.0

Software for SVERKER 750/760/780

User's Manual

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1 Installation

1.1 Computer system requirements

The recommended computer requirement is Windows® XP / Win 7 / 10.

1.2 Installing SVERKER Win

SVERKER win can be delivered on an USB memory stick or downloaded from Megger website.

Note *If you have an old version of ProView PC 750 or earlier version of SVERKER Win installed you must uninstall this first. Make a backup of previous saved test files.*

- 1] Click on the installation file "SverkerWin xxxSetup.exe".
- 2] Select the language to use during installation.

Note *A sample file for Custom help file in Word 6.0 is included.*

You must have acrobat reader 4.0 (or later) to be able to read the documentation. The reader will be installed at the end of the installation, but you can cancel the installation if you already have version 4.0 or later installed.

- 3] The installation of SVERKER Win is now completed.

Change language

You can later on change language from "File", "Select language".

USB driver installation

A driver for the USB port on the SVERKER must be installed on your PC before you can use the USB port. The USB driver is in the SVERKER Win software.

Note *SVERKER Win does not work with Windows® Vista.*

- 1] Select the USB Driver folder and double click on the file:
CP210xVCPInstaller_x64 for 64 bit systems or CP210xVCPInstaller_x86 for 32 bit systems.
- 2] Follow the installation instructions.

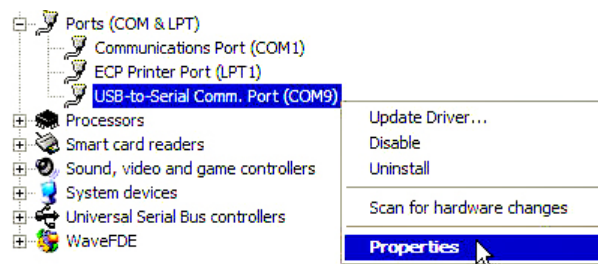
USB setup/Comport settings

- 1] Open Windows "Control Panel".
- 2] Choose "System".

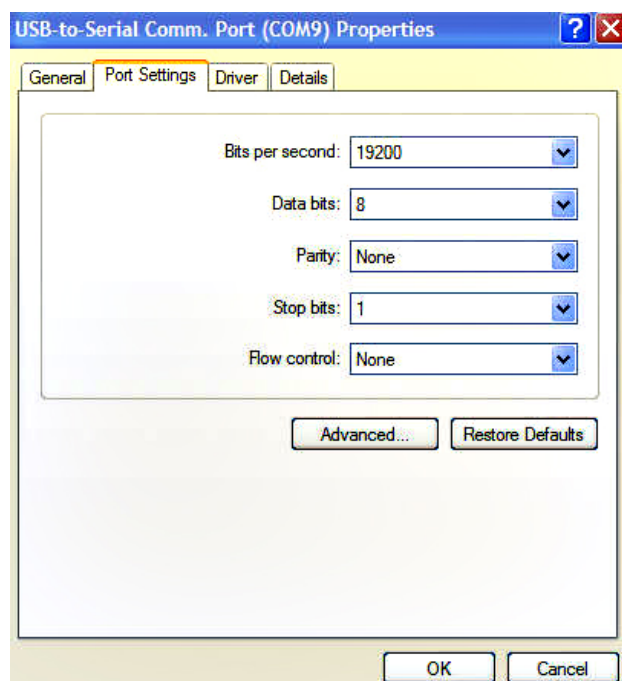
- 3] Under the "Hardware" tab, choose "Device Manager".
- 4] Look at the "Ports (COM & LPT)" submenu. Since the SVERKER Win software cannot handle more than 7 comports, it is needed to check the comport number assigned automatically by Windows and change it to anything equal or lower than 7.

To change the comport number

- 1] Right click on the "USB-to-serial Comm. Port" and choose "Properties".

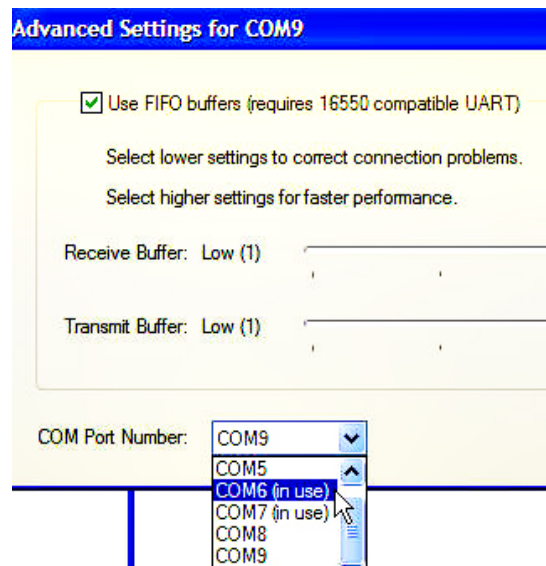


- 2] Under "Port Settings" tab, click on "Advanced"

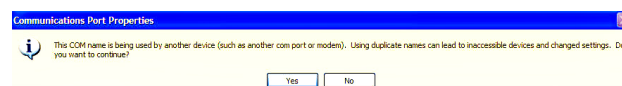


- 3] Change the "COM Port Number" to anything equal or lower than "COM7"

Note *Even if the ports are showed as "(in use)", it can be changed without problems. It is just a virtual usage by Windows.*

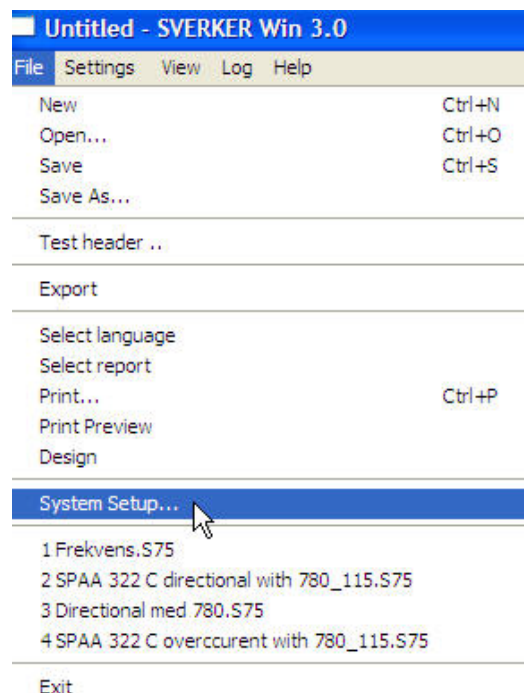


- 4] Click OK
- 5] Answer "Yes" to following message:

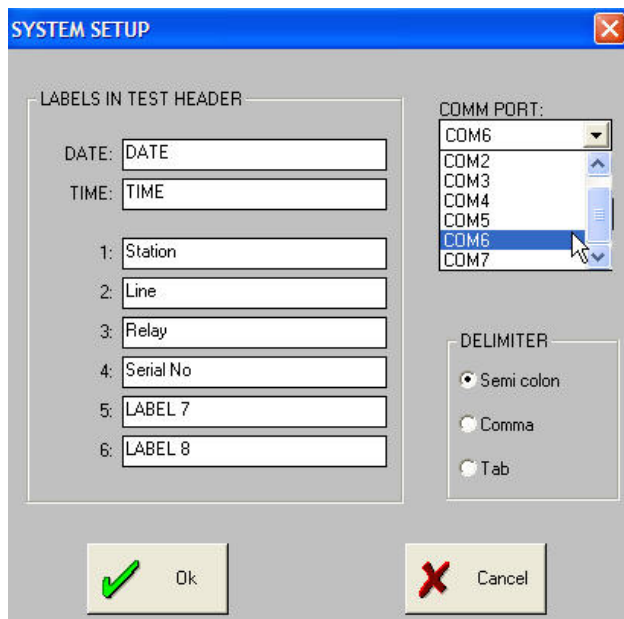


"This COM name is being used by another device (such as another com port or modem). Using duplicate names can lead to inaccessible devices and changed settings. Do you want to continue?"

- 6] Start/Open SVERKER Win software.
- 7] In the toolbar, click on "File" and choose "System Setup"



- 8] In the "COMM PORT" scroll list choose exactly the same number as the one assigned earlier on (in the "Windows/Control Panel/System/Hardware/Device Manager").



9] Click "OK".

10] Exit/close SVERKER Win and re-start it.

Note *Make sure you have the physical connection to SVERKER.*

2 Getting ready for use

2.1 Starting SVERKER Win

- 1] Connect the computer's serial/USB port to SVERKER.
- 2] Click on "SVERKER Win".
- 3] If the message "The Sverker you are connected to doesn't have any key for SVERKER Win installed!" appears on the screen, you have to "unlock" it, see below. You only have to do this once. After SVERKER has been unlocked once, it can be run from any computer on which SVERKER Win has been installed.

If the communication cannot be established

Important

The com port number assigned by Windows to the USB to serial must be the same as the one assigned in SVERKER Win.

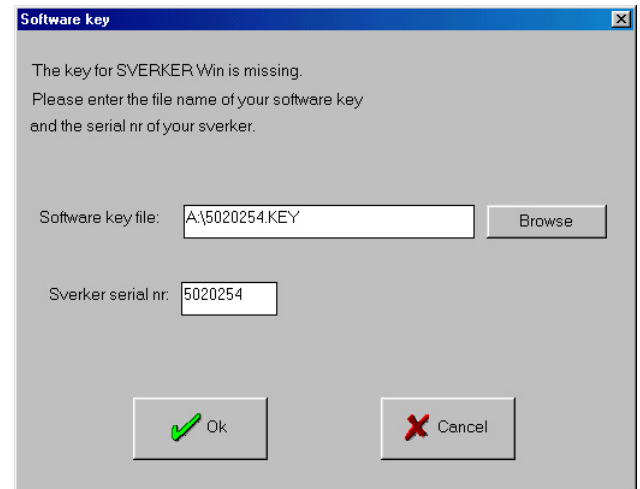
Check the com port number assigned by Windows

- 1] Go to "Control Panel/System/Hardware/Device manager/Ports"
- 2] The number of the comm. Port should not be higher than 7. In case the number will be higher, change the number by double clicking on "USB-to-Serial Comm. Port".
- 3] Go to "port settings" tab and click on "Advanced".
- 4] Change Com Port number (1 to 7).

Check the com port number assigned in SVERKER Win

- 1] Start SVERKER Win.
- 2] Click on "File" in the toolbar.
- 3] Choose "System setup..."
- 4] Change COM PORT number to be the same as the one assigned by Windows.
- 5] Click on "OK" and re-start SVERKER Win.

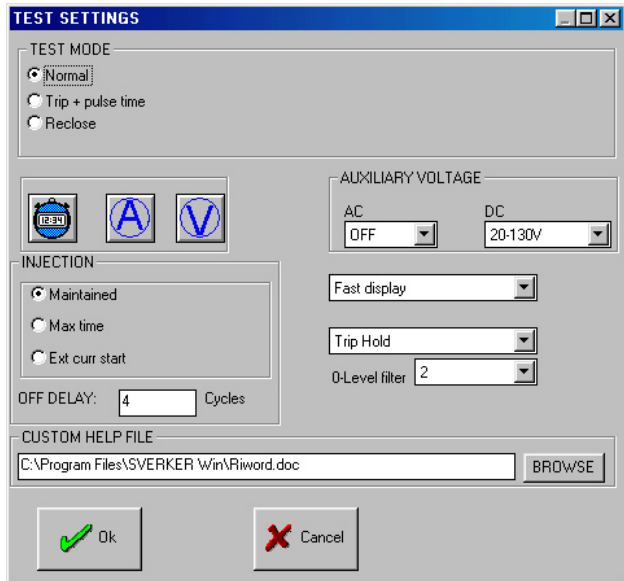
Unlock SVERKER



- 1] When the message "The Sverker you are connected to doesn't have any key for SVERKER Win installed!" appears on the screen, press ENTER.
- 2] The dialogue box shown in the picture above will appear.
- 3] Insert the USB stick labelled "SVERKER Win Software key".
- 4] Click on BROWSE and select the file in "Removable Disk".
- 5] Click "OK".
- 6] Type in the serial number of the SVERKER, you will find it on the under side of the SVERKER.
- 7] Click "OK".
- 8] The "TEST SETTINGS" window will open.

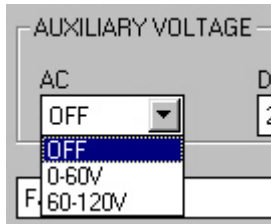
Note *Once you have unlocked your SVERKER (if you have bought a new SVERKER this is normally already done when you receive it) you can use this SVERKER with any computer that have SVERKER Win installed (you can install the program on as many computers as you like). This means you will not by mistake bring the "wrong" computer without any license installed.*

2.2 Test settings



Here, you select the settings for your test. Conduct a trial by clicking on the different buttons and menus. The SVERKER User's manual explains how they function.

Auxiliary voltage



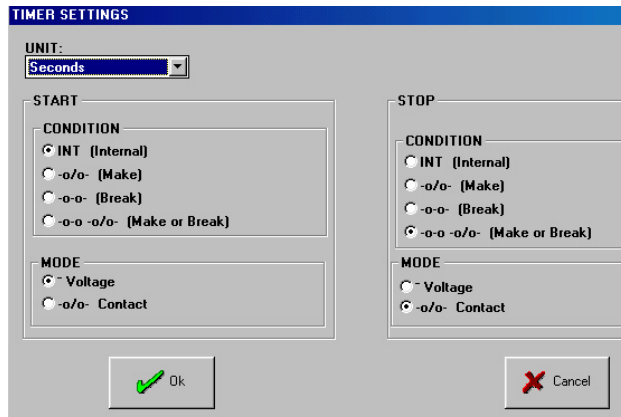
Note *This is for SVERKER 760 and 780.*

The auxiliary voltage ranges can not be controlled from the SVERKER Win if you are connected to a SVERKER 760/780. In this case the auxiliary voltage is controlled directly with the dials on the panel

Timer settings



When you click on this icon, you open up the "TIMER SETTINGS" window.

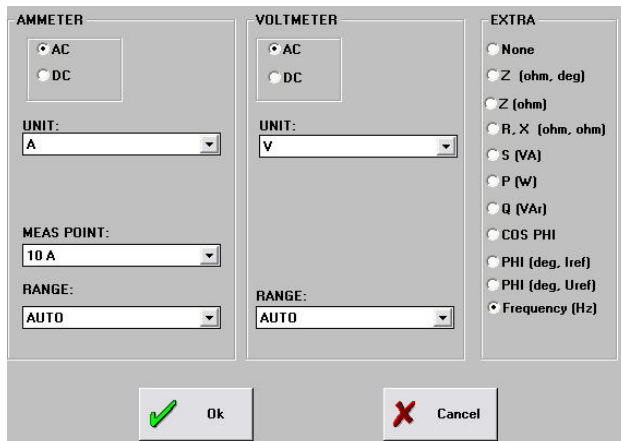


Here you set the conditions for the "START" and "STOP" input, see the SVERKER User's manual for more information.

Meter settings



Any one of these two icons will open up the "METER SETTINGS" window.



Here you set up the meters, see the SVERKER User's manual for more information.

Test header

- 1] Click on the "OK" button in the "METER SETTINGS" window.

TEST HEADER

DATE: 8/10/2000

TIME: 09:40

Station: Hagby

Line: Hagby-Byle

Relay: ABB SPAJ 141C

Serial No: 687686

LABEL 7:

LABEL 8:

Ok Cancel

Here you enter the contents for the report. If you wish to rename a LABEL you can do so under "File", "System setup", see below.

System setup

Here you can rename the Labels, enter the names and click OK.

You can also change com port, com speed and delimiter. You chose suitable delimiter when you export to e.g. Excel.

SYSTEM SETUP

LABELS IN TEST HEADER

DATE: Date

TIME: Time

1: Station

2: Line / Object

3: Relay

4: Serial No

5: LABEL 7

6: LABEL 8

COMM PORT: COM1

COMM SPEED: Fast

DELIMITER

Semi colon

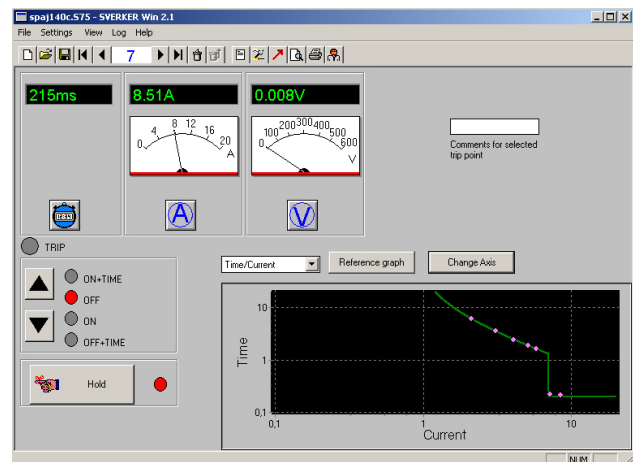
Comma

Tab

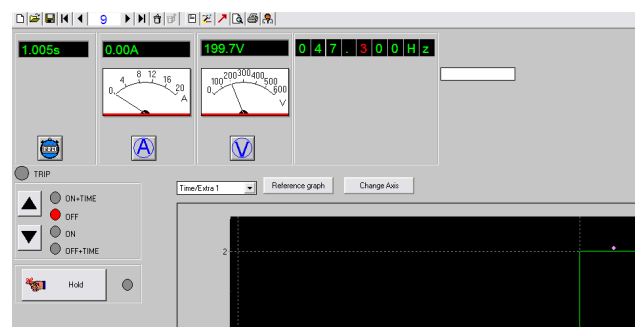
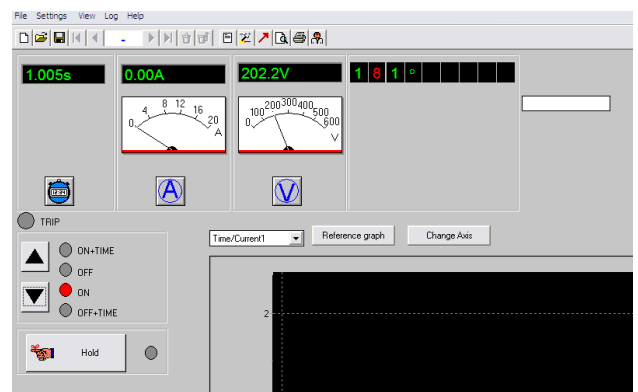
Ok Cancel

2.3 Manage the test

- 1] Click on the "OK" button in the "TEST SETTING" window see "2.2 Test settings" on page 10.


















This is the SVERKER Win window from which you control most of the test. The "Comments for selected trip point" field is used if you want to write a comment to the actual test shot, e.g. Pick-up test, this will then be printed in the report on the same line as the test shot.



For SVERKER 780 the the phase angle and the frequency are displayed.

2.4 Tool bar

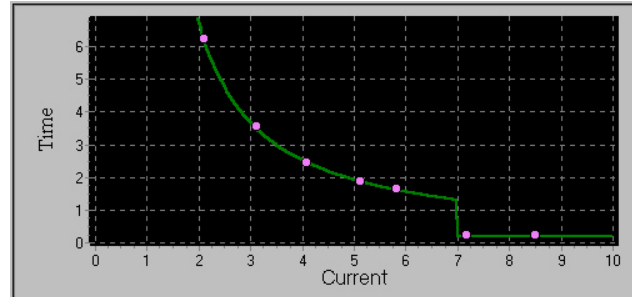


-  New test
-  Open a test
-  Save the test
-  Beginning of the log list
-  One step down in the log list
- Number 7 in the log is displayed
-  One step up in the log list
-  End of the log list
-  Delete the settings and the result for the selected log number.
-  Undo delete
-  Test header, to add information for the report
-  Test settings
-  Export result as an ASCII file
-  Print preview
-  Print
-  Custom help

2.5 Oscilloscope

Depending on what "TEST MODE" you have selected ("Normal", "Trip+pulse time" or "Reclose"), the look of the black oscilloscope will differ.

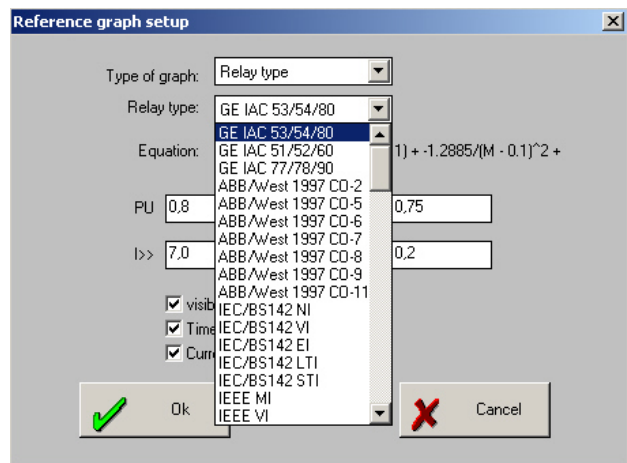
Normal



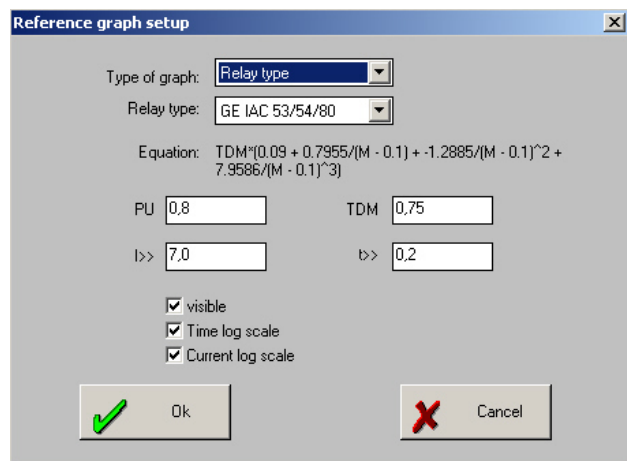
Reference graph

It is possible to create the theoretical reference graph to visually compare the test results with.

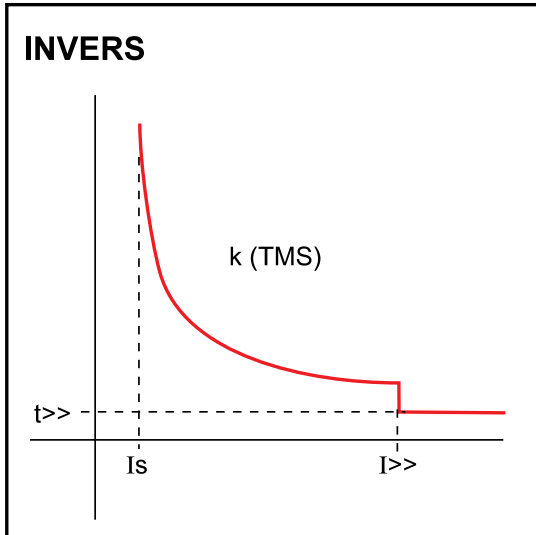
1] Press the "Reference graph" button.



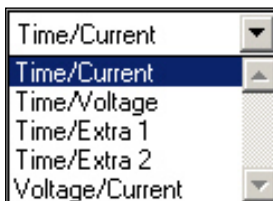
2] In the Reference Graph setup you can select "Relay type" and use one of the ready-made relay curves for a specific relay instead of a characteristic.



It is also possible to create different types of inverse characteristics for e.g. overcurrent relays. There are several different types specified in the IEEE and IEC standards and also ABB RI (note: for ABB RI $k = s/10$) and ABB IDG. It also possible to select logarithmic scales. The reference graphs can be defined as follows:



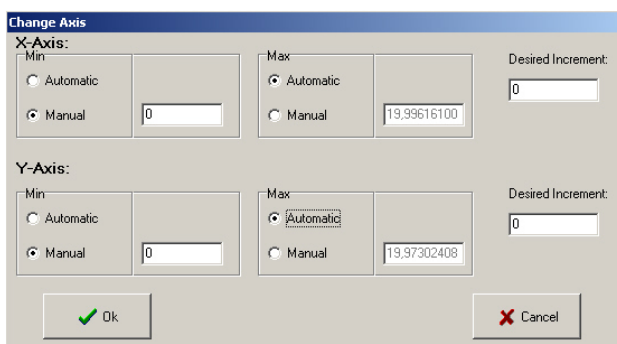
Name on axis



Here you can select values on the horizontal axis. "Extra 1" and "Extra 2" can be used when you have selected any extra meter. "Extra 2" can only be used if the extra meter have two values (e.g. Z and Zphi). "Extra 2" would then be the second value (Zphi in this case). However most commonly is probably to use "Current" for testing the time characteristic of on overcurrent relay.

Scale of the axis

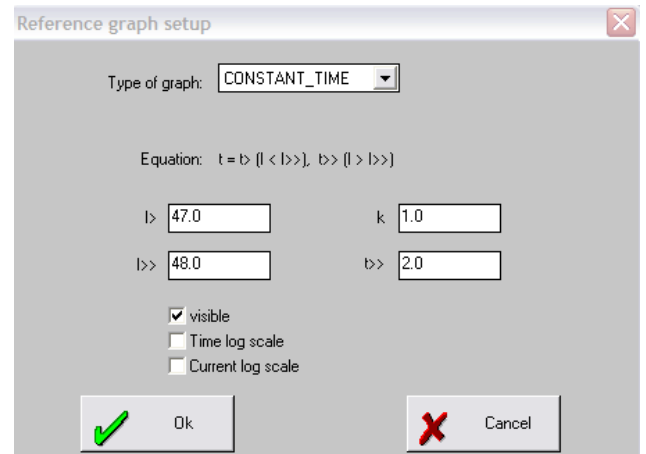
The scale of the axis can be set automatic or adjusted manually.



Reference graph for frequency test

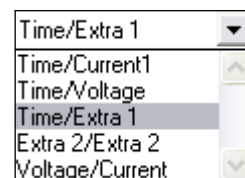
To create a reference graph for a frequency relay choose "CONSTANT TIME" characteristic for a current relay.

- 1] Enter the settings as follows:
- 2] Step one: "I>>" will be the f1 setting and "t>>" will be the "t1" (operating set time for stage 1)
- 3] Step two: "I>" will be "f2" and "k" will be "t2" (operating time for stage 2)

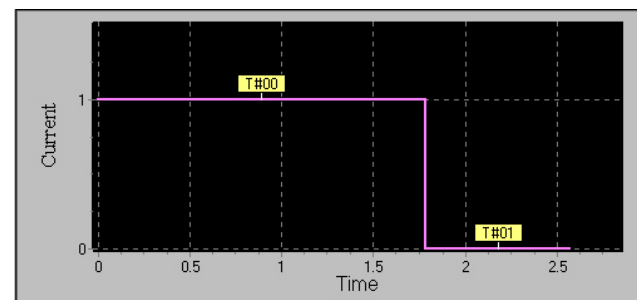


Name on axis

Choose Time/Extra1 in order to have a time/frequency reference graph.



Trip + pulse time



This shows two different times:

- T#00 Trip time, the time for the relay to trip
- T#01 Pulse time, the time for the Trip contact to release.

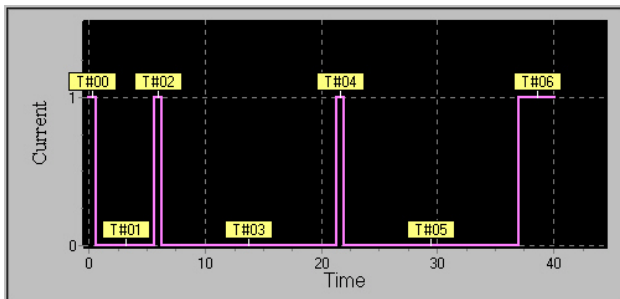
In this case it is not possible to create a reference graph.

Axis

The axis can not be changed. The vertical axis, "Current" indicates:

- 1 = Current ON
- 0 = Current OFF

Reclose



This is a test of an overcurrent relay with autoreclose.

T#00 trip time, the time for the relay to trip

T#01 dead time.

T#02 reclose time.

...and so on depending on the number of recloses.

In this case it is not possible to create a reference graph.

Axis

The axis can not be changed. The vertical axis, "Current" indicates:

- 1 = Current ON
- 0 = Current OFF

3 Conduct the test

3.1 Define the reference graph

The reference graph can only be used in "Normal mode". The reference graph is used to visually compare the test results with the theoretical settings of the relay.

- 1] Click on the "Reference graph" button.



Tip

If you for some reason do not want any reference graph, unmark "Visible".

- 2] Select the type of reference graph curve. IEC is normally used in Europe and Asia. IEEE is normally used in USA.
- 3] Select if you want to use logarithmic scales.
- 4] Set the variables

I>	I start
k	constant
I>>	Instantaneous trip
t>>	Time for I>>

- 5] Click on "OK"

Note *The scale is automatic and will adjust for each test shot.*

3.2 Invoking a start-up condition

To invoke a start-up condition (which may consist of simply turning on an indicator lamp), you must highlight it manually.

- 1] Click on "View" and highlight the "Manual trip" button. The "Trip" button appears.
- 2] Start generation (ON). Click on ▼ or press ↓ on the keyboard.
- 3] Click the "Trip" button when the protective relay system is actuated.
- 4] Stop generation (OFF). Click on ▲ or press ↑ on the keyboard.



Tip

Now you can fill in your own comments in the field "Comments for selected trip point".

3.3 Testing tripping times

- 1] "Increase the current by pressing ▲(ON+TIME) and turn the main knob/dial to adjust the current."

Important

If you want to set the current before conducting the timing test you must do the following.

- 2] Reset the "Hold" button by clicking on it or by pressing the keyboard space bar.
- 3] Then activate "Hold" again by clicking on it or by pressing the keyboard space bar.
- 4] Increase the current by pressing ▲ (ON+TIME). Repeat until the current reaches the desired level

3.4 When the test is finished



When the test is finished, the results will appear in a log list. You can scroll through this list by pressing ◀ or ▶ on the keyboard or by clicking on the appropriate buttons. If you want to delete a reading, click the "Delete" button. If you change your mind, you can undelete the reading by clicking "Undo".



Tip

Now you have the possibility to write comments for each test point. Use the field "Comments for selected trip point", see "2.3 Manage the test" on page 11

3.5 How to save a file

- 1] To save a file, click on the "Save" button
- 2] Type in the file name and then click on "OK", whereupon the file will be saved and a file name extension of .S75 will be added automatically.

3.6 Testing the same protective relay system again

The next time you wish to test the same protective relay system or one that resembles it closely, all you have to do is open the test file, whereupon all your settings will be invoked automatically.

- 1] Click on the "Open" button.
- 2] Click on the "New" button to clear the log list.
- 3] Start the test.


3.7 How to use “Custom help” to conduct a test

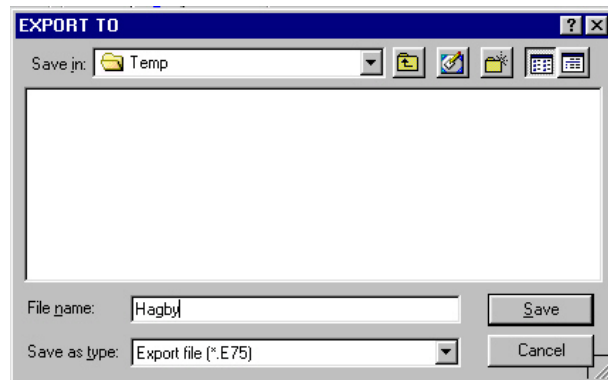
Custom help file

In the “TEST SETTINGS” window you will find the “CUSTOM HELP FILE” line. Here you can enter the name of a user-written help file. You can write this file in WordPerfect, Word or Write or you can prepare a Windows help file in HLP format. Illustrations can be inserted via a scanner or via Paintbrush or the like. You can explain how to test a specific protective relay system and clarify your explanation with illustrations. This help file can then be linked to the test file that is saved after the test is concluded. Different help files can thus be linked to tests conducted at different times. This enables you to write test instructions well in advance of testing. Then, at test time, a single mouse click will open the help file containing your instructions, thereby simplifying testing. How to use “CUSTOM HELP” is explained below.

- 1] Click the “Custom Help” button.
- 2] The file specified previously under “TEST SETTINGS” will now be started.
- 3] You can switch back and forth between SVERKER WIN and WP/Word by pressing Alt+TAB on the keyboard.

3.8 How to generate a report

- A] If you wish to read through the report in advance on your screen, click on the “Print Preview” button.
- B] To print the report, click on the “Print” button.
- C] You can also export the test file to a spreadsheet program such as Excel or Quattro Pro where the table can be converted to a chart and the report’s appearance can be enhanced.
 - 1] Set the delimiter using “System Setup” in the “File” menu
 - 2] In the SVERKER WIN window, click the button  on the button-bar.
 - 3] Specify the same file name as that assigned to the test file. The file name extension will become .E75 automatically.



Note *The printout is not working if there is no printer driver installed. This is also valid for “Print Preview”. To solve this, select a local printer (even if there is no local printer connected) when you make “Print Preview”.*

Change logotype in the report

Exchange the file “logo.bmp” in C:\Program files\Sverker Win\ to your logo file in bmp file format.

Change the report design

The report templates can be changed. For more information see the full manual “List&Label – The Report Designer”. Start the report designer (List&Label) from SVERKER Win menu, “File”, “Design”.

4 Report design

4.1 General

With the report generator it is possible to change the design of the reports. It is quite easy to change the layout of the report by adding lines, text and pictures.

Here is a short introduction in how to use the List&Label Report Designer. For more detailed information see the List&Label manual as a pdf-file (in English or German language only). You will find the file under "Program", "Programma", "Sverker Win", "List & Label Report Designer Manual".

Templates

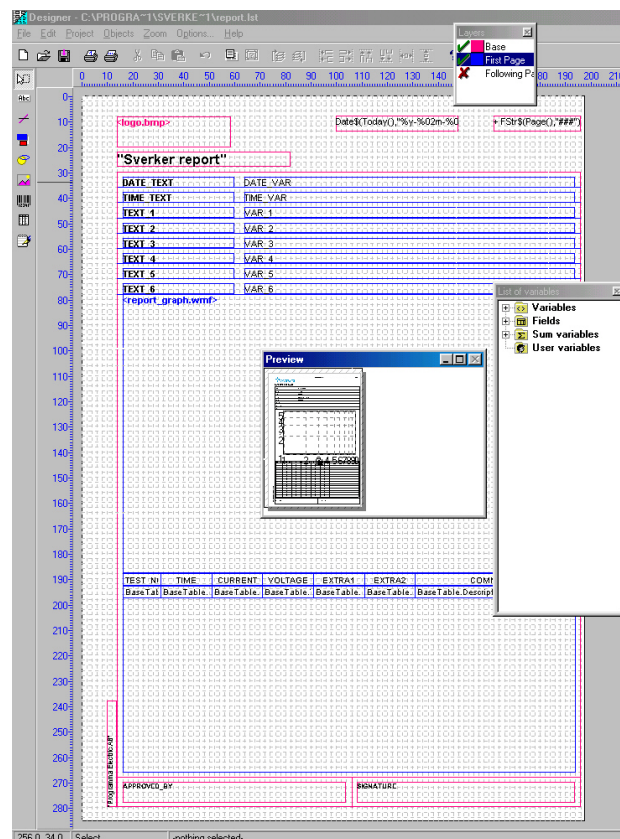
To make reports you use different templates. The templates are different types of list files (LST-files). You can edit the templates your self, some parts are quite easy to edit some parts not so easy.

Change logotype

Exchange the file "logo.bmp" in C:\PETTOOLS\REPORT to your logo file in bmp file format.

4.2 Edit the report layout

- 1] Click "File", "Design" in the menu to start the List&Label report designer. You will see the picture below.



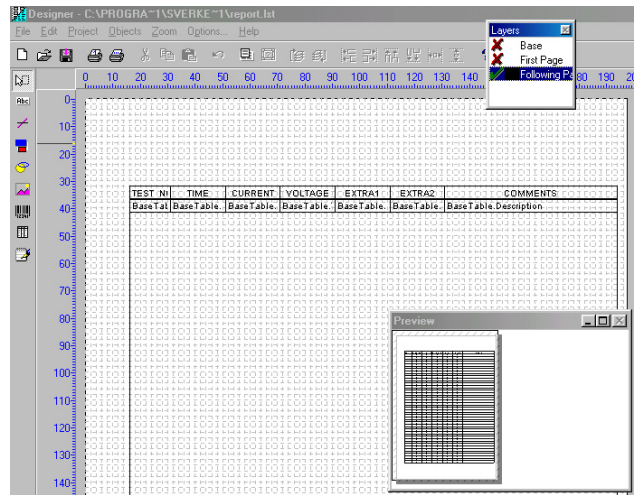
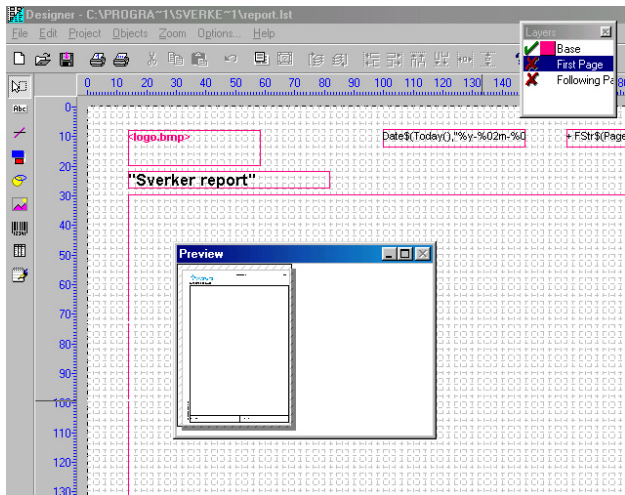
Layers

In the "Layers" window you can open or close the different layers.

Base layer

The "Base layer" show the objects that will be printed on every page.

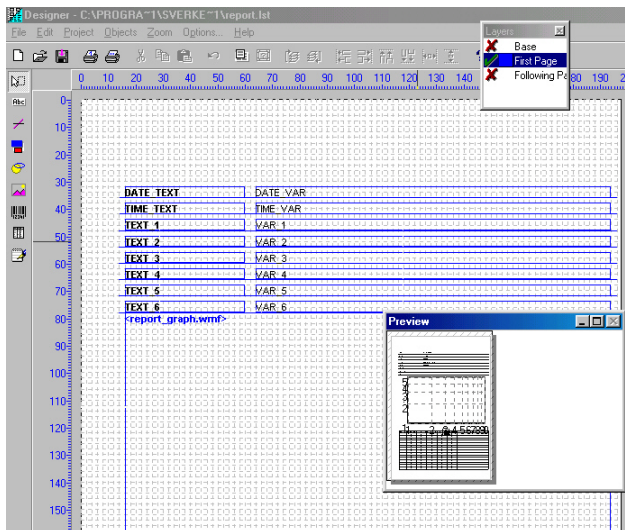
4 REPORT DESIGN



Note! All objects you create on the "Base" layer will be shown on all pages. If you want them only to be shown on the first page, make sure you have selected the "First page" layer only. You can also mark an object, right-click and select "Assign to layer".

First page layer

The first page shows the objects that will be printed on the first page.



Following pages layer

This layer shows the objects for the page(s) after page one. In this case the table continues on the next page if it did not fit into page one.

4.3 Tools



Objects > Select



Objects > Insert > Text



Objects > Insert > Line



Objects > Insert > Rectangle



Objects > Insert > Ellipse/Circle



Objects > Insert > Picture



Object > Insert > Bar code



Objects > Insert > Table



Objects > Insert > Formatted text

Move objects

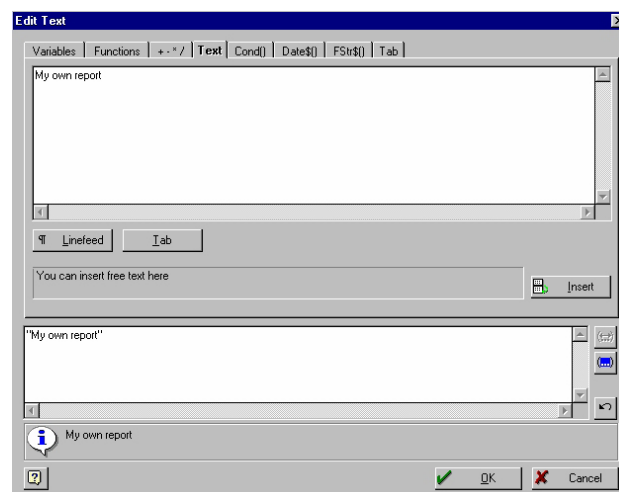
Use the "Select" button and click on the object. Put the pointer to the square in the center of the object and drag it into the new position.

Add text fields

- 1] Click the "Insert text" button.
- 2] Mark an area where to place the text.
- 3] Right click and select "Properties".



- 4] Click the "Insert paragraph" button, or double click on the ---(blue line).



- 5] Select the "Text" tab.
- 6] Insert the text in the upper field.
- 7] Click the "Insert" button.
- 8] Click "OK".
- 9] Select font.
- 10] Click "OK".

Insert lines

Use the "Insert line" button, drag the line from start to end.

Insert rectangles

Use the "Insert rectangles" button, drag the rectangle with the mouse.

Multiple copies

Multiple copies are good to use e.g. when you want to make a table.

- 1] First create a rectangle.
- 2] Select it with the "Select" button.
- 3] Right click and select "Multiple copies".
- 4] Define the number of copies, in columns and rows.

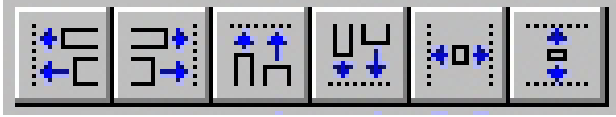
Group

- 1] Select the objects to group.
- 2] Click the "Select" button and use <Shift>+left mouse button to mark the objects, or mark several objects in an area using the mouse.
- 3] Right click and select "Group". This can be very good when you e.g. have used "Multiple copies".

Ungroup

Select the object to ungroup. Right-click and select "Ungroup".

Align



Using these buttons you can align different objects. Align to the left, right, up or down. You can also get the same size for horizontal and vertical.

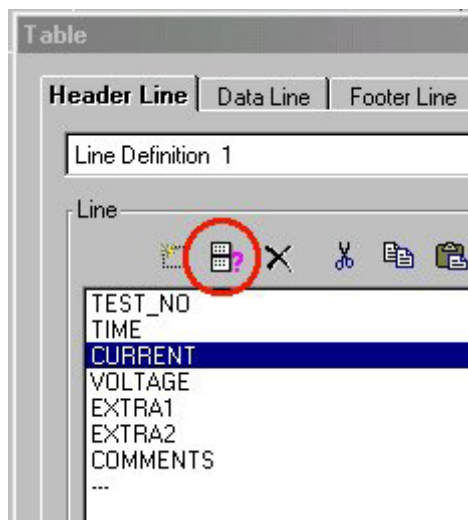
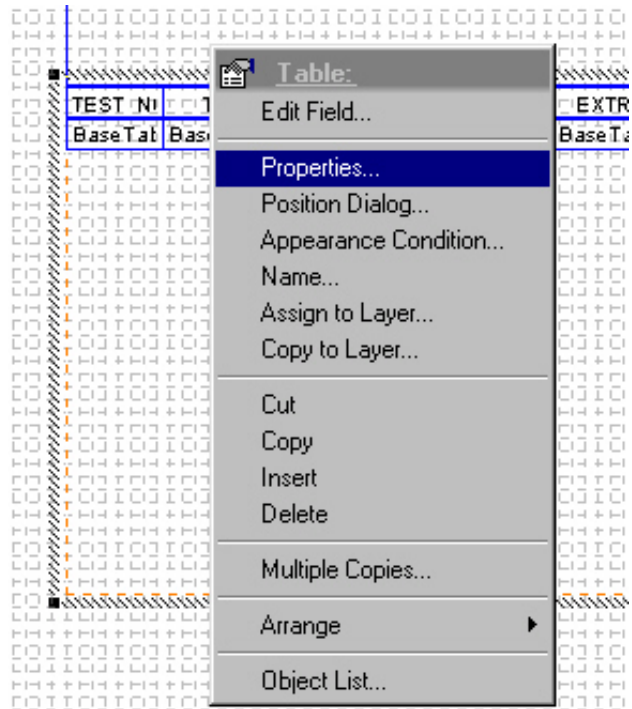
- 1] Click the "Select" button and use <Shift>+left mouse button to mark the objects, or mark several objects in an area using the mouse.

4.4 Edit text in tables

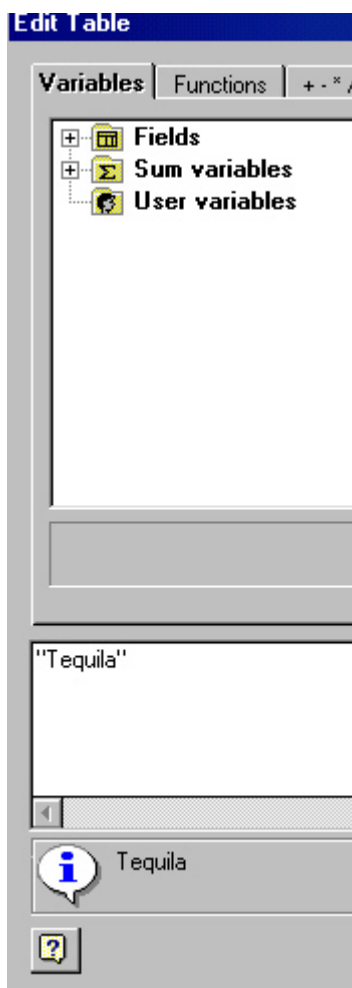
SVERKER Win will automatically change the column names when you change language in "File", "Language".

If you want to change the column names to a name in a language which is not selectable from the additional language list you should do as follows.

- 1] Select the "First page" layer.
- 2] Select the table.
- 3] Right-click and select "Properties".



- 4] Select the line (column name) you want to edit.
- 5] Click the "Edit line" button



- 6] Change the text to what you want, but be sure that it is within "brackets".
- 7] Click "OK".
- 8] Now do the same for the other columns and also for the columns on the "Following page" layer.

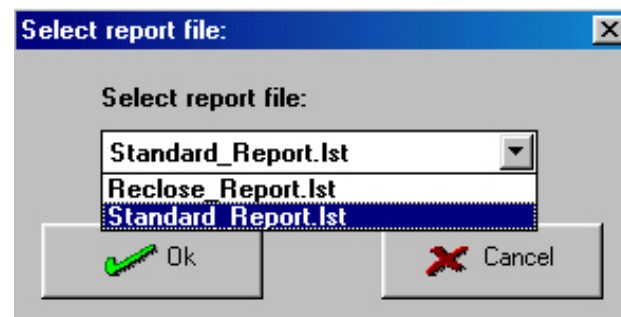
4.5 Save report templates

The report template you have created should be saved as an LST-file in,

C:\Program Files\SVERKER WIN\

By doing this you can later on elect it from "File", "Select report".

Report templates



Standard_Report.lst

This report is designed for testing in Normal mode, e.g. overcurrent test.

Reclose_Report.lst

This report is designed for testing in Reclose and Trip+pulse mode.

Design help for report templates

For more information on how to make report templates you can use the built in help from List&Label, as pdf-file (only available in English or German language). You will find the file under "Program", "Programma", "Sverker Win", "List & Label Report Designer Manual".

5 Troubleshooting

Fault	Cause	Remedy
No communication	SVERKER not unlocked The message "The SVERKER you are connected to doesn't have any key for SVERKER Win installed!" appears on the screen.	Unlock it, see "2.1 Starting SVERKER Win" on page 9.
	Wrong com port	Change com port on the PC or change the setup in "File", "System setup".
	Wrong cable	The cable between SVERKER and PC is not the correct type, it must be a straight pin-to-pin cable, 1-1, 2-2, 3-3,....9-9. Change cable.
The Print preview and the printout is not working	You have no printer installed	Install a printer driver
Times are not being measured	A. You have selected " <i>Internal STOP</i> "	Change to " <i>Make</i> " or " <i>Break</i> "
	B. " <i>Voltage</i> " has been selected	Select " <i>Contact</i> " instead.
Custom Help won't start	A. There is no associated file	See the Windows manual
	B. Word is not installed	Instal Word
Excel don't show correct figures	Wrong delimiter	Check the settings of the delimiter in "File", "System setup". In Excel or in the Windows "CONTROL PANEL", from the "NUMBER FORMAT" menu, select "Full stop" as the correct delimiter.

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