

NILU : OR 41/95  
REFERENCE : O-91023  
DATE : AUGUST 1995  
ISBN : 82-425-0696-5

# **RingSys - WetCorr**

## **User's Manual**

**Leif Marsteen**

---

# Preface

This manual describes how to install and use the RingSys - WetCorr software. You should start by reading Appendix A. Installing RingSys and continue with chapter 3. Using RingSys - an exercise. The latter chapter describes the most frequently used commands.

This manual covers software versions:

RingSys	v.5.4.b.	950726
Stat	v.4.3.	921204
WetCorr	v.4.1.a.	941121



# Contents

	Page
<b>Preface</b> .....	<b>1</b>
<b>1. Introduction</b> .....	<b>5</b>
<b>2. Organizing the data</b> .....	<b>5</b>
2.1 Downloaded data from the System Controller.....	5
2.2 Scaled data in the database.....	5
2.3 Data extracted from the database files to work files .....	6
<b>3. Using RingSys - an exercise</b> .....	<b>6</b>
3.1 Starting RingSys .....	7
3.2 Processing WetCorr data.....	7
3.2.1 Building a database.....	7
3.2.2 Extract Data .....	8
3.2.3 Open a work file .....	8
3.2.4 Specify the WetCorr calculations .....	9
3.2.5 Starting the calculations.....	9
3.2.6 Sending the chart to printer .....	10
3.2.7 Quitting RingSys .....	10
<b>4. RingSys Reference</b> .....	<b>10</b>
4.1 The RingSys menu bar .....	10
4.2 The File menu .....	10
4.2.1 The Build Database command.....	11
4.2.2 The Extract Data command .....	12
4.2.3 The Open command.....	13
4.2.4 The Save command .....	14
4.2.5 The System Params command.....	14
4.2.6 The Excel Menu command.....	20
4.2.7 The Exit RingSys command.....	20
4.3 The WetCorr menu.....	20
4.3.1 The Specify WetCorr command .....	21
4.3.2 The Start Calculations command.....	22
4.3.3 The Print Plot command.....	27
4.4 The Options menu .....	28
4.4.1 The Auto Processing command.....	29
4.4.2 The About command .....	31
<b>5. The setup file</b> .....	<b>31</b>
5.1 The System Definition Blocks (SDB).....	32
5.1.1 System Defintion Block 0000 .....	32
5.1.2 System Definition Block 0001 .....	33
5.1.3 System Defintion Block 0002 .....	34
5.2 The File Definition Block .....	36
<b>Appendix A Installing RingSys</b> .....	<b>39</b>



# RingSys - WetCorr

## User's Manual

### 1. Introduction

RingSys is a data processing tool which offers a standardized method for storing and displaying WetCorr data. The system comprises a set of macros that run under Microsoft's spreadsheet Excel. The Windows environment secures a consistent and easy to use user interface.

You must use Excel version 3.0 or 4.0. This software will not run properly under Excel version 5.0.

### 2. Organizing the data

The WetCorr data can be divided into 3 categories:

1. Not scaled data downloaded from the System Controller.
2. Scaled data in the database.
3. Data extracted to work files from the database.

The three categories are described below.

#### 2.1 Downloaded data from the System Controller

You download data from the System Controller (SC) using one file per Sensor Adapter (SA). (To download data you must use a communication program such as Windows' Terminal. This procedure is not covered here.) You must use the following file naming conventions:

ssssSAaa.SYM

where      ssss   is the Site number. It must be 4 numerals.  
            aa      is the SA number, 01 - 16. It must be 2 numerals.

If a site is registered by the site number 0010 and you are using two SAs at the site the downloaded files must be called 0010SA01.SYM and 0010SA02.SYM respectively. You always download data to the \RINGDATA\SYM directory. *The files in this directory are considered temporary. They are overwritten every time you download data.*

---

#### 2.2 Scaled data in the database

When you have downloaded your data files you must scale the data and include it in the site's database. The database files reside in subdirectories in the \RINGDATA\SYM directory. You decide how to organize your database files, e.g. you can use one subdirectory per site or you or one subdirectory per month or some other scheme. If you choose the latter you could call your database

directories \RINGDATA\SYM\9108, ....\9109, and so on. Before creating the database file for the first time you must create the database directory using the File Manager.

When you add new data to the database files the new data is scaled automatically. 0.1 is added to all Current values to avoid 0 (zero) in logarithmic plots. The Temperature values are left unchanged.

### 2.3 Data extracted from the database files to work files

The database files can become very large. Because it is not convenient to work with large files data is extracted from the database files before processed by RingSys, e.g. calculating TOW values and plotting TOW charts. Data is extracted from the database files on a one file per WetCorr sensor basis. That is an extracted file holds Current and Temperature data from one sensor only. The extracted files uses the following naming conventions:

ssssAaac.CSV

where      ssss    is the Site number, 0010 - 9999.  
              aa      is the SA number, 01 - 16.  
              c      is the Cell number 1 - 4.

Data from cell number 2 on SA number 1 at site number 0010 is extracted to a file called 0010A012.CSV. RingSys creates the file names automatically. The extracted files are put in subdirectories in the \RINGDATA\CSV directory. The subdirectory names equal the database file subdirectory names. If a database file is located in the \RINGDATA\SYM\9108 directory then the extracted data files will end up in the \RINGDATA\CSV\9108 directory.

Before extracting data for the first time you must create the extract directory using the File Manager.

## 3. Using RingSys - an exercise

This chapter will guide you through RingSys. We shall use data from two sensor adapter files which is included with the software. In order to complete the examples successfully you must use the selections specified in the text.

The processing of WetCorr data can be divided into the following steps:

1. Download data from the System Controller (SC). You create one file per Sensor Adapter (SA) including Current and Temperature measurements from 4 sensors.
2. Build the downloaded data into the database on your PC. This process also scales the measurements.
3. Extract data from the database to work files. You create one file including Current and Temperature measurements per sensor .
4. Specify the WetCorr calculations.
5. Start the calculations.

We shall look at examples of all steps except step 1.

### 3.1 Starting RingSys

You start RingSys from the Program Manager or from Excel.

#### Starting RingSys from the Program Manager:

- \* Choose the WetCorr program icon in the Excel group window.

#### Starting RingSys from Excel:

1. Choose open from the File menu.
2. Go to the \RINGSYS directory and open the OPENRING.XLA macro.

RingSys is added to the Excel menu bar. If you can not see it is probably because you are using short menus. Switch to long menus. When you choose RingSys from the Excel menu bar the RingSys menu bar appears.

A shranked document called WCSETUP.XLS appears in the lower left corner of your Excel window. The document holds setup information that RingSys uses. It must be open when using RingSys.

### 3.2 Processing WetCorr data

Processing data in RingSys includes scaling and storing your downloaded data files in database files, extracting data from the database, computing statistics and making charts.

#### *3.2.1 Building a database*

Assume that data have been downloaded from the SC into two files 0010SA01.SYM and 0010SA02.SYM containing not scaled data from SA number 1 and 2 and that the files have been copied into the \RINGDATA\SYM directory.

The first thing to do is to scale and include the data in the database.

#### To build a database:

1. Choose Build Database from the File menu. The Build Database dialogue box appears.
2. Locate the Specify Site group box. All available site numbers are listed in the Site No list box. Choose site number 0010. The site's adapters are listed in the Adapter list box.
3. We want to build all of the site's adapter files into the database. Select UseAll in the Adapter list box.
4. Locate the Series: yymmdd hhmm group box. Here you specify which part of the adapter files you want to add to the database. Let us add all data in the adapter files to the database. Select the Auto From and Auto To check boxes.



5. In the Directory text box you specify where the database resides. Enter 9108.
6. Choose command button OK to start the building of the database files.

The data in our 2 adapter files which resides in the \RINGDATA\SYM directory are now scaled and built into the database files which reside in the \RINGDATA\SYM\9108 directory.

### **3.2.2 Extract Data**

Before calculating TOW and plotting charts we must extract the period of interest from the database to work files.

#### To extract data:

1. Choose Extract Data from the File menu. The Extract Data dialogue box appears.
2. Locate the Specify Site group box. All available site numbers are listed in the Site No list box. Choose site number 0010. The site's variables are listed in the Variables list box.
3. We want to extract data concerning all sensors. Select UseAll in the Variables list box.
4. Locate the Series: yymmdd hhmm group box. Here you specify which part of the adapter files you want to extract from the database. Let us extract all data in the database. Select the Auto From and Auto To check boxes.
5. In the Directory text box you specify where the database resides. Enter 9108.
6. Choose command button OK to start the building of the database files.

The data concerning our adapters are now extracted from the databases which reside in the \RINGDATA\SYM\9108 directory to work files which reside in the \RINGDATA\CSV\9108 directory.

### **3.2.3 Open a work file**

After data extraction you have one work file for each sensor. In order to process the data you must open the work file.

#### To open a work file:

1. Choose Open from the File menu. The Open dialogue box appears.
  2. Choose the 9108 subdirectory.
  3. Choose the 0010a011.csv file and open the file.
- 

The file is opened and put in a window covering the upper half of the screen.

The block to the right in the work file window is called the Variable Definition Block (VDB). It specifies a range of format variables which RingSys uses when it

formats the work file and charts. The VDB is read from the site's File Definition Block (FDB) in the setup file WCSETUP.XLS each time the file is opened.

### 3.2.4 *Specify the WetCorr calculations*

Before running the calculations you must specify TOW thresholds and how to present the results.

To specify the WetCorr calculations:

1. Choose Specify WetCorr from the WetCorr menu. The Specify WetCorr Analysis dialogue box appears.
2. We want to run statistics on the Current only and be able to plot both variables. Locate the Include group box. Select check boxes Plot for both variables and check box Statistics for the Current variable only.

You can enable calculation of Temperature Statistics and Threshold detection by selecting the Temperature statistics check box.

To specify the TOW thresholds:

1. Choose the Thresholds command button in the Specify WetCorr Analysis dialogue box. The Specify thresholds dialogue box appears.
2. Specify the TOW thresholds separated by commas. Do not include spaces! Enter the TOW thresholds 20 and 30. (You can enter a maximum of 4 Values).
3. Choose the OK command button to return to the Specify WetCorr Analysis dialogue box.
4. Choose the OK command button to exit the Specify WetCorr Analysis dialogue box.

### 3.2.5 *Starting the calculations*

You can either process one of the variables or you can process both Current and Temperature together. In the latter case TOW will be calculated for the Current only.

To process all data concerning the Current variable:

1. Activate the 0010a011.csv window.
2. Select the Current column heading.
3. Choose Start Calculations from the WetCorr menu.

---

After some time a chart appears in the lower half of your screen.

The statistics are output to the target worksheet. The target worksheet is hidden behind the workfile and chart windows. The values in the target worksheet always appear in the following order:

Variable	File name	Avg.	Min	Max	%>20	%>30	From date	To date
Current	0010A014	144.0	5	2506	30.61	2.55	91.08.25	91.08.26

### 3.2.6 *Sending the chart to printer*

Once a chart is made you can send it to the printer.

Sending the chart to printer:

1. Activate the chart
2. Choose Print Plot from the WetCorr menu.

If the chart is printed over two pages you should try to experiment with the Chart Width and Chart Height values in the System Parameters dialogue box. You enter the dialogue box by choosing System Params from the File menu.

### 3.2.7 *Quitting RingSys*

When you have finished your session you can quit RingSys.

Quitting RingSys:

1. Choose Exit RingSys from the File menu. The End RingSys dialogue box appears.
2. Choose command button OK. The RingSys menu bar is deleted and you are returned to the Excel menu bar.

The setup document WCSETUP.XLS is not closed. You must close it manually.

This completes the exercise.

## 4. RingSys Reference

This chapter describes all commands on all of RingSys' menus.

### 4.1 The RingSys menu bar

When you choose RingSys from the Excel menu bar the RingSys menu bar appears, see fig. 1.

File    WetCorr    Options

*Figure 1: The RingSys menu bar.*

### 4.2 The File menu

The File menu includes commands for database processing, specification of system parameters, return to the Excel menu bar and quitting RingSys, see fig. 2.

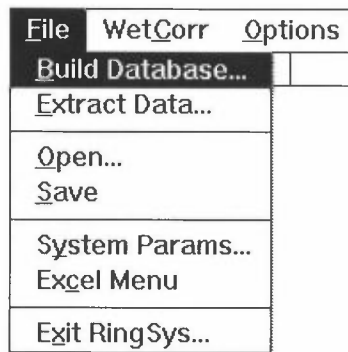


Figure 2: File menu.

#### 4.2.1 The Build Database command

Building a database is the process of adding new data to an existing database or creating a new database.

When you choose the Build Database command from the File menu the Build Database dialogue box appears, see fig. 3.

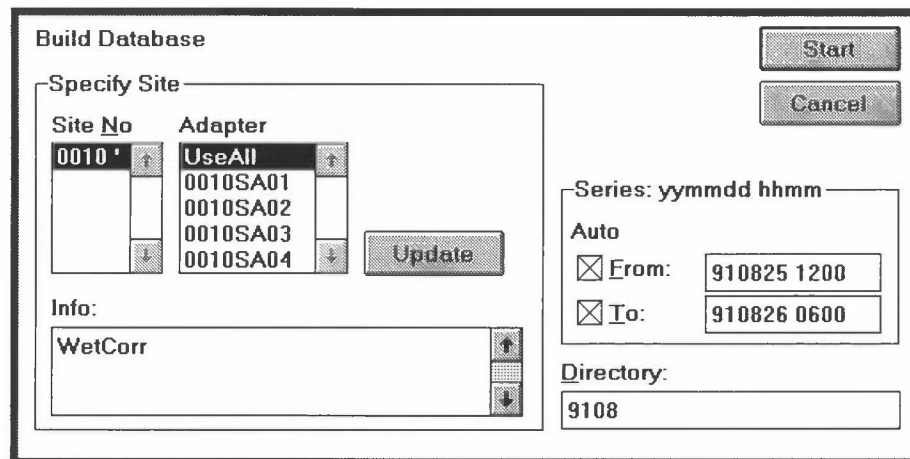


Figure 3: The Build Database dialogue box.

Look up \_\_\_\_\_ To read about

Chapter 5.1.2. \_\_\_\_\_ How to fill in the SDB 0002 table.

To build a database:

1. Locate the Specify Site group box.
2. Select the site number in the Site No list box. The site's adapters are listed in the Adapter list box.
3. Select an adapter in the Adapter list box. If you want to add data from all adapters select UseAll.
4. Locate the Series: yymmdd hhmm group box
5. Specify the time period you want to add to the database.

You must enter the date and time using the following formats:

yymmdd hhmm

Do not include any separators.

6. Specify the database directory in the Directory text box. Do not include any "\" before or after the name. The directory always resides in the \RINGDATA\SYM directory.
7. Choose command button Start to start the building of the database files.

The time period in the Series group box gives you the following options:

<u>Use this option</u>	<u>To do this</u>
Auto From	Add data from the start of the adapter file to the database. The date specified in the From text box is ignored.
From (text box)	Add data from the date specified. You must clear the Auto From check box.
Auto To	Add data until the end of the adapter file to the database. The date specified in the To text box is ignored.
To (text box)	Add data until the date specified. You must clear the Auto To check box.

<u>Look up</u>	<u>To read about</u>
Chapter 4.4.1.	How process multiple databases automatically.

#### ***4.2.2 The Extract Data command***

The database files can become very large. Because it is not convenient to work with large files data is extracted from the database files before processed by RingSys, e.g. calculating TOW values and plotting TOW charts. Data is extracted from the database files on a one file per WetCorr sensor basis. That is an extracted file holds Current and Temperature data from one sensor only.

When you choose the Extract Data command the Extract Data dialogue box appears. The dialogue box is identical to the Build Database dialogue box, see fig. 3, except for the Adapter list box which is replaced by the Variables list box. The Current and Temperature variables for each cell are listed in the Variables list box.

To extract data from a site:

1. Locate the Specify Site group box.
2. Select the site number in the Site No list box. The site's Current and Temperature variables are listed in the Variables list box.
3. Select a sensor in the Variables list box. The sensor variables are identified by an "A" in front of the adapter and sensor number. If you want to extract data from all sensors choose UseAll.  
When you choose a sensor both Current and Temperature variables for that sensor will be extracted together and put in a single sensor file. The variables in the Variables list box which begin with a "T" represent the Temperatures. Choosing them has no effect.
4. Continue with specifying the time and date as described in chapter 3.2.1.

**4.2.3 The Open command**

You use the Open command to open a work file. The work file includes Current and Temperature values from one sensor only.

To open a work file:

1. Choose the Open command from the File menu. The Open dialogue box appears.
2. The directories are listed in the Directories list box. Change directory if necessary.
3. The files are listed in the Files list box. Select the file you want.
4. Choose command button Open to open the file.

The work file is put in a window covering the upper half of the screen, see fig. 4.

Site: 0010 0010SA01

Date	Curr	Temp.	VarName=	A013	T013
91.08.25	102	8.8	Current	Current	Temp.
91.08.25	111	9.3	InfoNo=	2	2
91.08.25	99	8.6	ChartTitle=	Cell 3, Current	Cell 3, temp.
91.08.25	103	8.5	Ytext=	Current [nA]	Temp [°C]
91.08.25	97	7.9	YFormat=	Standard	Standard
91.08.25	99	7.8	Ymin=	0.1	-10
91.08.25	96	7.4	Ymax=	1000	50
91.08.25	91	6.9	Xtext=	Date	
91.08.25	94	7.2	Xmin=	00:00	
91.08.25	93	6.8	Xmax=	23:59	
91.08.25	92	6.9	Xscale=	1	01:00
91.08.25	87	6.7	XlsDateFmt=	åå.mm.dd	
91.08.25	92	7			
91.08.25	85	7.3			
91.08.25	88	6.7			

*Figure 4: A work file loaded into RingSys.*

The block to the right in the work file window is called the Variable Definition Block (VDB). It specifies a range of format variables used by RingSys to format the work file and charts made by RingSys. Each measurement variable (e.g. Current and Temperature) has its own set of format variables specified in the Site's File Definition Block (FDB) in the setup file WCSETUP.XLS. The VDB is read from the setup file each time the work file is opened.

#### 4.2.4 The Save command

The Save command writes your worksheet or chart to file.

To save a worksheet or chart:

- \* Choose Save from the File menu.

Depending on the file type RingSys does the following:

File to save is	Action
RingSys work file	Saves the document without warning.
Setup file	Saves the document without warning. The document is saved to an Excel file as well as an ASCII file with extension .FMT. The FMT file is used by the database manipulating stand alone programs.
Any other file	Displays Excel's Save As dialogue box.

#### 4.2.5 The System Params command

You use the System Params command to define and activate global settings used by RingSys.

When you choose the System Params command the System Parameters dialogue box appears, see fig. 5.

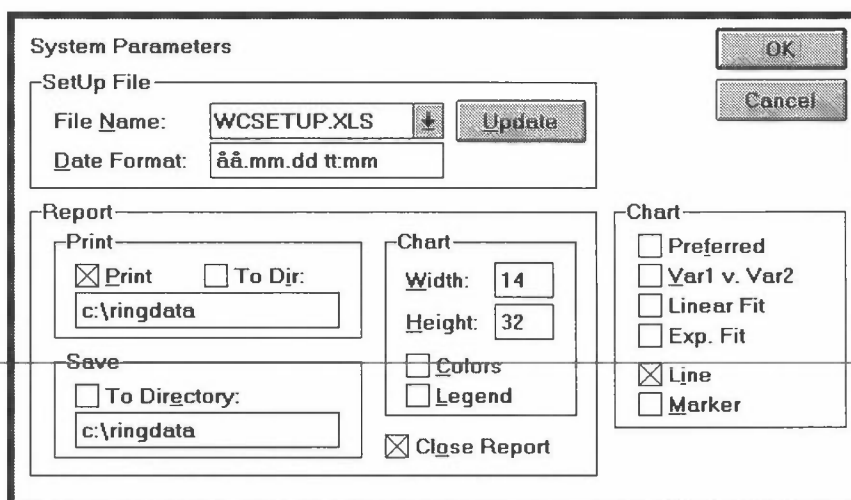


Figure 5: The System Parameters dialogue box.

The dialogue box is divided into 3 main group boxes:

<u>Group box:</u>	<u>Function:</u>
SetUp File	Select setup file and setup file date and time formats. Activate changes made to SDB no. 0000.
Report	Specifies how the chart report is formatted before printing and how it is printed.
Chart	Specifies how the chart is formatted.

### **The SetUp File group box**

In the SetUp File group box you specify the setup file name. You can also activate changes made to SDB no. 0000.

You may have several setup files, but only one can be active. You define the active setup file in the SetUp File group box. The default setup file is WCSETUP.XLS.

#### To create a new setup file:

1. Activate the setup document.
2. Choose Save As from Excel's File menu and specify a new name in the Save Worksheet as text box.
3. Choose command button OK to save the file.
4. Return to the RingSys menu.
5. Choose Save from the File menu to save the file as a RingSys document.

#### To open a new setup file:

1. Choose System Params from the File menu. The System Parameters dialogue box appears.
2. Locate the SetUp File group box.
3. Choose the Down Arrow in the File Name list box.
4. Select a new setup file from the list.
5. Choose command button OK.

The new setup file is opened upon exit from the dialogue box.

---

If you make changes to SDB no. 0000 in the current setup document those changes are not automatically activated.

#### To activate changes made to SDB no. 0000:

1. Locate the SetUp File group box.
2. Choose Update. Changes made to SDB no. 0000 are activated.



Look up \_\_\_\_\_ To read about

Chapter 5.1.1.                      How to fill in SDB no. 0000.

### **The Report group box**

In the Report group box you specify how the chart report is formatted and printed. The Report group box is divided into 3 sub-groups:

Group box: \_\_\_\_\_ Function:

Report Print	Specifies where to print the chart report: No printout, to printer or to file.
Report Save	Specifies where to save the chart report or not to save it.
Report Chart	Prepares the chart in the report before printout.

### **The Report Print group box**

In the report Print group box you specify where to print the chart report. If you choose to print the report to file you can print it later by copying the file to the printer port. This is useful if you do not have a printer connected to your PC.

Use this option: \_\_\_\_\_ To do this:

Print	Print the chart report to printer or file. Clear the check box if do not want a printout of your report.
To Dir	Print the chart report to the directory specified in the To Dir text box. The directory must exist. The active printer must be a file called \ToDir\PRINTFIL.PRN. where ToDir is the directory specified in the To Dir text box. After the file is printed to PRINTFIL.PRN RingSys makes a copy of the file. The copy is named after the chart report worksheet with extension .PRN. That is \ToDir\STDRPn.PRN where n is an integer. Clear the check box if you want the file printed to your printer.

### **The Report Save group box**

In the Report Save group box you specify where to save the chart report worksheet or not to save it. If you choose to save the report you can open it as a worksheet later. In order to format the x-axis date labels correctly you should also open the work file from which the chart was made.

Use this option: \_\_\_\_\_ To do this:

To Directory	Save the chart report worksheet to the directory specified in the To Directory text box. The directory must exist. The report is saved to an XLS-file and named after the report worksheet. That is \ToDirectory\STDRPn.XLS where n is an integer and ToDirectory is the directory specified in the To Directory text box. Clear the check box if you do not want to save the report.
--------------	---

### **The Report Chart group box**

In the Report Chart group box you specify the appearance of the chart in the chart report. You can specify the size of the chart in the printout, choose to print in colours or black and white, use legend and use solid or dotted data lines.

In order for the chart to fit in on one page in the report printout you must specify a suitable chart width and height. If you change printer you may have to change these values.

Use this option: \_\_\_\_\_ To do this:

Width	Specify the width in columns that the chart will cover in the report worksheet.
Height	Specify the height in rows that the chart will cover in the report worksheet.

Experiment with different width and height values until the chart covers a satisfactory part of your report printout.

In order to make the chart printout as informative as possible you can control some chart attributes. If you have a colour printer or plotter you can print the chart in colours. If you can only make black and white printouts you can still distinguish different data lines by adding dot patterns to them. You can also add a legend box. These options only apply to the chart printout. They do not affect the way the chart appears on screen.

Use this option: \_\_\_\_\_ To do this:

Colours	Add different colours to data lines in the chart report printout. You will usually use this option only when printing to a colour printer or plotter.
Legend	Add a chart legend to the report printout. You will usually use this option only when Colours is selected too.

Look up \_\_\_\_\_ To read about

The Chart group box                      Additional ways of controlling chart formats.

### **The Chart group box**

In the chart group box you can control the way the chart appears on screen as well as what kind of chart you want to make. The chart attributes are preserved in the printout.

The chart attributes include data lines and/ or data marks. You can also choose to format the chart according to Excel's current preferred chart.

Use this option: \_\_\_\_\_ To do this:

Line	Display the data series as lines. If you want to mark each data point only switch Line off and Marker on. You can use both.
Marker	Mark each data point in the chart.
Preferred	Format a chart according to Excel's preferred chart type. Select this option if you want to make other chart s then scatter charts. The option is explained in more detail below.

If you select the Preferred option your charts will be formatted according to Excel's preferred chart type. Before making charts you will have to tell Excel what your preferred chart is.

To modify the default chart type:

1. Make a WetCorr chart.
2. Choose Excel Menu from the File menu. Excel's chart menu bar appears.
3. Modify the chart using Excel's chart formatting commands.
4. Choose Set Preferred from the Gallery menu.
5. Choose RingSys Menu from the RingSys menu. The RingSys menu bar appears.
6. Choose System Params from the File menu.
7. Locate the Chart group box.
8. Select the Preferred check box. All charts made by RingSys will be modified according to the preferred chart type.

The preferred chart type you specified is active only until you exit Excel. Excel's preferred chart type is reset to default the next time you start Excel.

The main use of the preferred chart function is to instruct RingSys to make bar, line or pie charts instead of scatter charts. Not all chart attributes can be changed. These are the most important limitations:

- \* All formats specified in the File Definition Block (FDB) in the work file are applied to the chart if possible.
- \* Selections made in the Chart group are applied to the chart if possible.
- \* Selections made in the report Chart group box are applied to the printed chart if possible.
- \* If the preferred chart is not a scatter chart and both variables are plotted in one chart using two y-axes the second variable will be a line graph.
- \* If both variables are plotted in one chart using two Y-axes the text attached to the second y-axis will always be oriented downwards.
- \* The major and minor tick marks are always put outside the axes. The position of the x-axis tick labels are always at the bottom of the page. The position of the y-axis tick labels are always at the far left.

The last group of options in the Chart group box allows you to make a scatter chart using two data series as x and y values respectively and include the least square fitted line for either linear or exponential fit. You can also choose to output statistical results to the chart report.

Use this option:                      To do this:

Var1 v. Var2

Create a scatter chart between two data series. The second variable (Var2) in the work file is plotted along the x-axis while the first variable (Var1) is plotted along the y-axis. In order to use the option you must use both variables when making a chart. In order to get an intelligent chart you should turn Line off and Marker on in the Chart group box.

Linear Fit

Draw a straight line that best fits the data using the method of least squares. If Var1 v. Var2 is not selected the analysis is applied to the date and selected variable using the dates as x-values. If Var1 v. Var2 is selected the analysis is applied to the two variables using the second variable as x-values. Both data series have to be continues. In order to get an intelligent chart you should turn Line off and Marker on in the Chart group box. The straight line is always drawn. If you want the regression factors you must select Linear Fit in the Specify Statistics dialogue box and Statistics here in the Chart group box.

---

Exp. Fit

Draw an exponential line that best fits the data using the method of least squares. See Linear Fit for further explanation.

Statistics Output statistics to the chart document. The statistics output are those selected in the Specify Statistics dialogue box. You must select the Interval Size All check box in the Specify Statistics dialogue box.

The formula used to compute the regression line is:

Linear regression	$y = m * x + b$
Exponential regression	$y = b * m^x$

The factor  $r^2$  is the coefficient of determination. It compares estimated and actual y-values, and ranges in value from 0 to 1. If it is 1 there is a perfect correlation in the sample.

#### 4.2.6 The Excel Menu command

To return to the Excel menu bar choose the Excel Menu command. The RingSys menu bar is deleted and the Excel menu bar appears.

#### 4.2.7 The Exit RingSys command

The Exit RingSys command closes the RingSys macros. The RingSys menu bar is deleted and you are returned to the Excel menu bar. When you choose the Exit RingSys command the End RingSys dialogue box appears, see fig. 6.



Figure 6: The End RingSys dialogue box.

To exit RingSys:

1. Choose Exit RingSys from the File menu. The End RingSys dialogue box appears.
2. Select the Save Settings check box if you want to save RingSys' dialogue box settings. You cannot save the settings in the dialogue boxes that belong to the WetCorr menu. If you do not want to save the settings clear the check box.

The RingSys macros are closed. The RingSys menu bar is deleted and you are returned to the Excel menu bar. The setup document WCSETUP.XLS is not closed. You must close it manually.

### 4.3 The WetCorr menu

The WetCorr menu includes commands for specifying and running WetCorr calculations, see fig. 7.

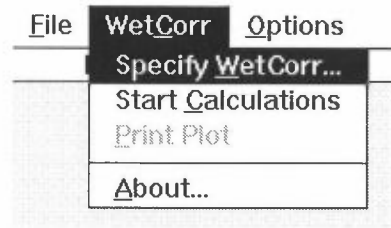


Figure 7: The WetCorr menu.

#### 4.3.1 The Specify WetCorr command

Before running the calculations you must specify TOW thresholds and how to present the results. When you choose the Specify WetCorr command the Specify WetCorr Analysis dialogue box appears, see fig. 8.

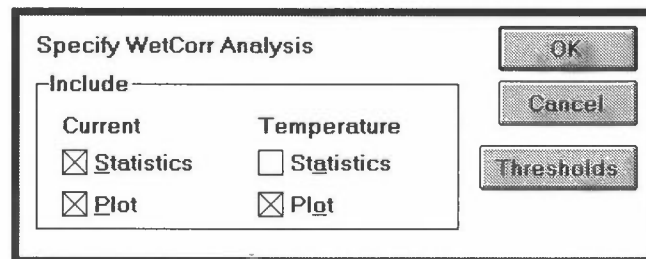


Figure 8: The Specify WetCorr Analysis dialogue box.

The dialogue box is divided into 2 main groups:

Group	Function
Include (group box)	Specifies what to include in the analysis.
Thresholds (command button)	Specifies the threshold values used to calculate the TOW.

#### The Include group box

In the Include group box you specify what to include in the analysis.

Use this option	To do this
Current Statistics	Compute statistics including thresholds using the Current variable.
Current Plot	Plot the Current variable.
Temperature Statistics	Compute statistics including thresholds using the Temperature variable.
Temperature Plot	Plot the Temperature variable.

Remember that you can only specify one set of threshold values. If you choose to calculate thresholds using the Temperature variable these thresholds will be used.

### The Thresholds command button

RingSys calculates the percentage of the total time that the values are above the specified thresholds. To specify the threshold values choose command button Thresholds. The Specify Thresholds dialogue box appears, see fig. 9.

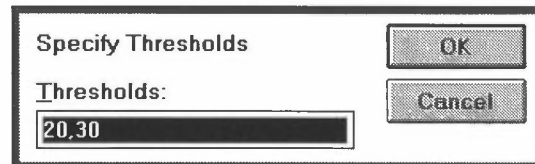


Figure 9: The Specify Thresholds dialogue box.

To specify the TOW threshold values:

1. Choose the Thresholds command button in the Specify WetCorr Analysis dialogue box. The Specify Thresholds dialogue box appears.
2. Enter your threshold values separated by commas in the Thresholds text box. Do not enter any spaces! You can enter up to 4 values.
3. Choose OK to return to the Specify WetCorr Analysis dialogue box.

To specify the standard WetCorr analysis setup:

1. Choose the Specify WetCorr command from the WetCorr menu. The Specify WetCorr Analysis dialogue box appears.
2. Locate the Include group box.
3. Select the Current Statistics, Current Plot and Temperature Plot check boxes.
4. Clear the Temperature Statistics check box.
5. Choose command button Thresholds to specify the TOW threshold values.

#### 4.3.2 The Start Calculations command

You use the Start Calculations command to manually start the statistical calculations and chart creation.

To prepare for start calculations:

1. Activate your work file.
2. Select the variable(s) and time period you want to process.
3. Choose the Start Calculations command.

You can choose to process one or both variables and you can choose to process the entire data series or only part of it.

To process the entire data series of only one variable:

1. Select only one cell in the data column you want to process.
2. Choose the Start Calculations command.

To process the entire data series of both variables together:

1. Select one cell in the first data column and drag the mouse over to the next data column so that one cell in each column is selected.
2. Choose the Start Calculations command.

To process a continuous subset of the data series:

1. Select one cell in the data column you want to process and drag the mouse until you have marked the subset of the data series. You do likewise when you want to process both variables together.
2. Choose the Start Calculations command.

After the calculations are done a chart appears in the lower half of your screen. The statistics are always output to the target worksheet. The results appear in the following order:

Variable	File name	Avg.	Min	Max	%>20	%>30	From date	To date
Current	0010A014	57.19	6	161	81.94	13.89	91.08.25	91.08.25

If the To and From date columns contain "#####" it is because they are too narrow to display the dates. In the work file you will see some red spots above the variable Definition Block. They indicate notes which contain the results of the thresholds calculations. Do not alter their contents. They are used when the chart is sent to the printer.

You are only allowed to process data that lies in column number 3 or 4 (column number 2 is not visible). The Date column must not include any empty cells except after the end of the data series. RingSys searches the Date column for the first occurrence of an empty cell. This cell is defined to be the end of the data series.

If you try to process data outside the legal area the Select Variable dialogue box appears, see fig. 10.



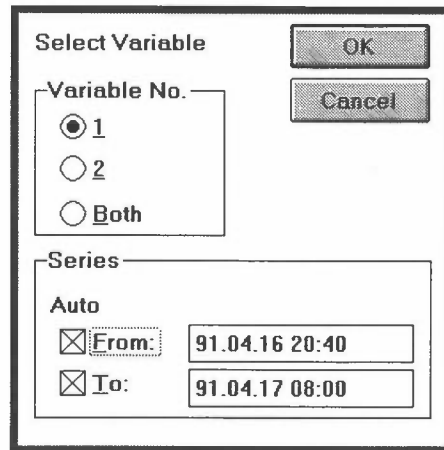


Figure 10: The Select Variable dialogue box.

In the Select Variable dialogue box you specify which variable(s) you want to use and which period you want to process.

To specify manually what to process:

1. Select a cell outside the legal processing area, e.g. the upper left cell in the work file.
2. Choose the Start Calculations command. The Select Variable dialogue box appears.
3. Locate the Variable No. group box.
4. Choose which variable(s) to process.
5. Locate the Series group box.
6. Specify the time period you want to process. You must enter the date and time using Windows date and time formats.
7. Choose command button OK. The processing starts.

In the Variable No. group box you choose which variable(s) to process.

Use this option                      To do this

- |      |                                   |
|------|-----------------------------------|
| 1.   | Process the Current variable.     |
| 2.   | Process the Temperature variable. |
| Both | Process both variables together.  |

In the Series group box you specify which part of the data series you want to process.

---

<u>Use this option</u>	<u>To do this</u>
Auto From	Process data from the start of the work file. The date specified in the From text box is ignored.
From (text box)	Process data from the date specified. You must clear the Auto From check box.
Auto To	Process data until the end of the work file. The date specified in the To text box is ignored.
To (text box)	Process data until the date specified. You must clear the Auto To check box.

<u>Look up</u>	<u>To read about</u>
----------------	----------------------

Chapter 4.3.1.	Which variable to calculate and plot.
----------------	---------------------------------------

We will look at some examples of charts made by RingSys. The charts are made using the Variable Defintion Block (VDB) in fig. 11.

	A013	T013
VarName=	Current	Temp.
InfoNo=	2	2
ChartTitle=	Cell 3, Current	Cell 3, temp.
Ytext=	Current [nA]	Temp [°C]
YFormat=	Standard	Standard
Ymin=	0.1	-10
Ymax=	1000	50
Xtext=	Date	
Xmin=	00:00	
Xmax=	23:59	
Xscale=	1	01:00
XlsDateFmt=	åå.mm.dd	

*Figure 11: This VDB is used in the example charts.*

We will only process the subset 91.08.25 00:00 - 91.08.25 11:50 of the work file.

### **Creating a chart including only the Current variable**

Fig. 12. shows the chart when only the Current variable was processed.

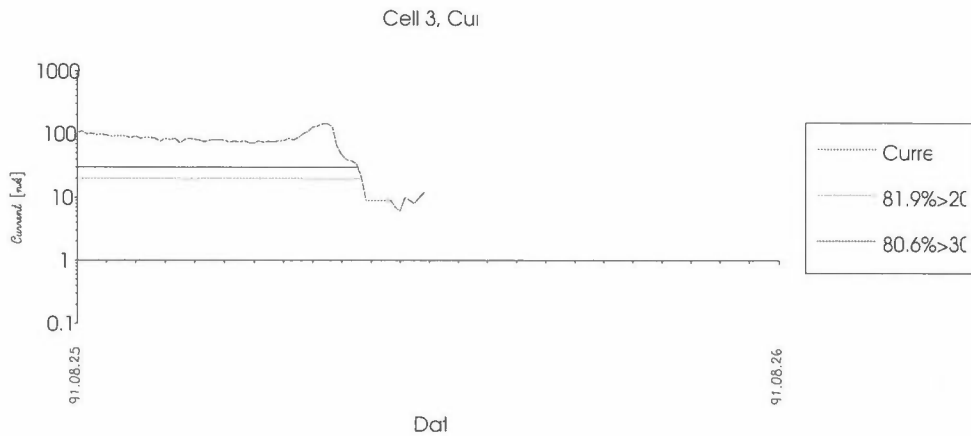


Figure 12: The chart generated when only the Current variable was processed.

Notice how the text labels, axes scaling and date format are taken from the VDB in the work file. The Xmin= format variable specifies that the X-axis minimum value should be at 00:00 of the first day in the processing period while The Xmax= format variable specifies that the X-axis maximum value should be at midnight of the last day in the processing period.

### Creating a chart including only the Temperature variable

Fig. 13. shows the chart when only the Temperature variable was processed.

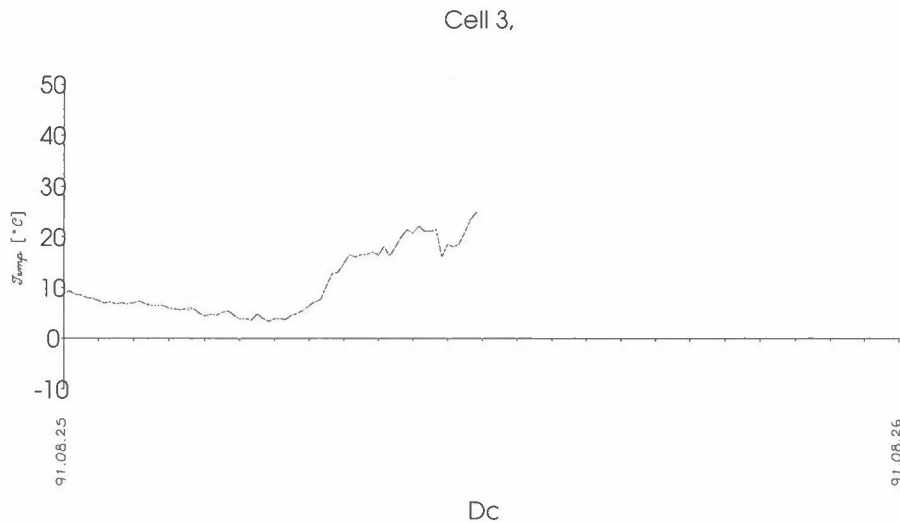


Figure 13: The chart generated when only the Temperature variable was processed.

Notice that you do not get any legend when the chart includes only one variable and no threshold lines.

## Creating a chart including both variables using individual Y-axis

Fig. 14. shows the chart when only the Current variable was processed.

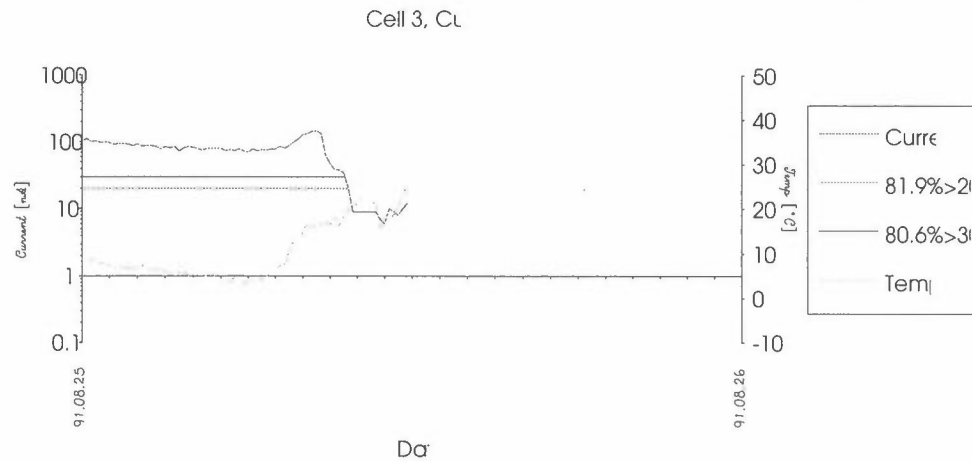


Figure 14: A chart including both variables using individual Y-axis.

The chart title equals the value of the ChartTitle= format variable of the Current in the VDB in the work file. You get two individually scaled and labelled Y-axes if at least one of the format variables Ytext=, Ymin= or Ymax= of the Current and Temperature do not equal each other respectively.

### 4.3.3 The Print Plot command

Once the chart is made you can create a report and send it to the printer by choosing the Print Plot command. You can only print the last chart you made from a work file. If you have made two TOW-charts and decide to print the former the report will include the TOW values of the latter chart! Also the work file which the chart was made from must be open. Fig. 15. shows a printed report of the chart in fig. 12.

Date	Threshold	% TOW
From: 91.08.25 00:00	20 nA	81.9
To: 91.08.25 11:50	30 nA	80.6
Printed: 95.07.26 10:12		

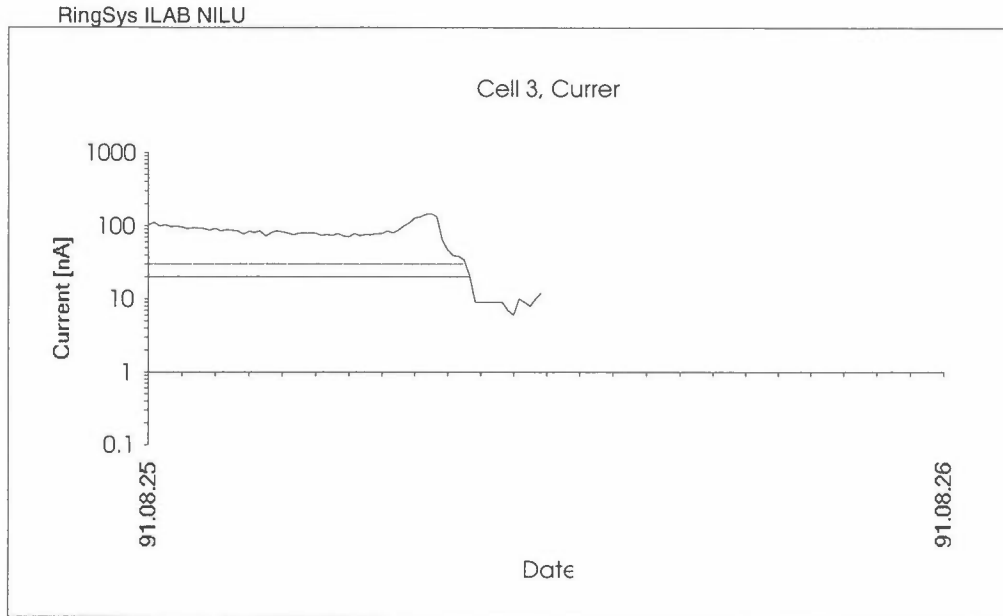


Figure 15: Report printout of the chart in figure 12.

Look up \_\_\_\_\_ To read about

Chapter 4.2.5.                      Other ways of formatting and printing the report.

You must print the target worksheet using Print from Excel's File menu.

#### 4.4 The Options menu

The Options menu, see fig. 16, includes the Auto Processing command which gives you the possibility of automating some of the processing task and the About command which displays system information.

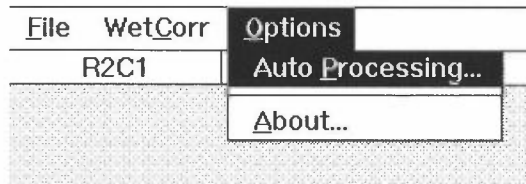


Figure 16: The Options menu.

#### 4.4.1 The Auto Processing command

You use the Auto Processing command to process your data automatically.

The Auto Processing command uses the information in System Definition Blocks (SDB) no. 0001 and 0002 in the setup document to process the data files.

When you choose the Auto Processing command the Auto Processing dialogue box appears, see fig. 17.

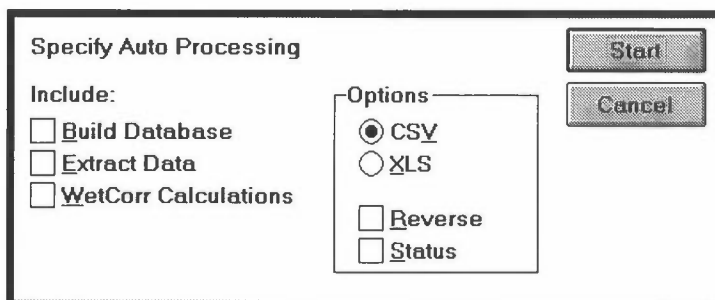


Figure 17: The Specify Auto Processing dialogue box.

The number of options in the Include list in the dialogue box will vary depending on which add in macros you are using. Fig. 17 shows the standard options. The Include list is always executed from top to bottom. You can combine several tasks such as extracting data and making charts in one action.

Use this option	To do this
Build Database	Build database files according to SDB no. 0002.
Extract Data	Extract data from database files to CSV-files according to SDB no. 0001.
WetCorr Calculations	Compute WetCorr statistics and charts according to SDB no. 0001. Remember to turn on the Print check box in the Report Print group box in the System Parameters dialogue box in order to make hard copies of the charts.

The Build Database and Extract Data options all work on database files while the WetCorr Calculations option process extracted work files only.

The options in the Options group box allow you to specify what kind of work files you want to process, the order of processing and whether you want a status report or not. The options are used by the Charts and Statistics options only.

<u>Use this option</u>	<u>To do this</u>
CSV	Process CSV work files.
XLS	Process Excel work files. The Excel work files must be formatted as a RingSys work file.
Reverse	To process SDB no. 0001 from bottom to top. Use this option to reverse the order of your printouts.
Status	To print a status report. The status report includes information about missing data or files.

The Status option is useful for detecting missing data or files. Fig. 18. shows a status report.

Status report printed: 93.07.26 15:07

No data in: c:\ringdata\csv\0011ozon.csv, Utvika, Ozon, 91.05.01 00:00 - 91.05.02 00:00  
Directory not found: c:\ringdata\csv\93oct, 0010SA01, 0011, A011

*Figure 18: A status report showing some error conditions.*

#### To start automated processing:

1. Fill in SDB no. 0001 and 0002 depending on what kind of functions you want to run.
2. Save the setup document using Save from the File menu.
3. Choose Automated Processing from the Options menu. The Automated Processing dialogue box appears, see fig. 17.
4. Select the functions you want to run in the Include list.
5. Specify file type etc. in the Options group box as necessary.
6. Choose Start. The automated processing begins.

Once the automated processing is started it must run to it's end. But if you have chosen Charts and you are making hard copies the Cancel dialogue box appears every time a chart is sent to the printer. If you Cancel the printout you also abort the automated processing.

#### To abort automated printout of charts:

1. Wait for the Cancel dialogue box to appear.
2. Choose Cancel. The automated processing is aborted.

~~You can also abort the processing by hitting <Esc> at any time. Doing so displays Excel's Macro Interrupt dialogue box. This does not apply to the The Build Database and Extract Data functions. This is an illegal way of aborting the process. RingSys is left in an unstable state and strange things might happen later. You should not choose Save Settings upon exiting RingSys if you have interrupted the macro at any time by hitting <Esc>.~~

To abort any automated processing:

1. Hit <Esc>. The Macro Interrupt dialogue box appears.
2. Choose Halt. The automated processing is aborted.
3. Choose Close from the File menu to close all open documents.

Look up \_\_\_\_\_ To read about

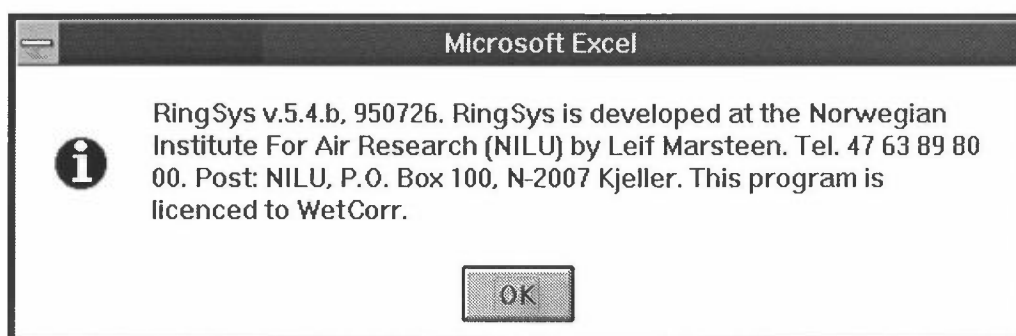
Chapter 5.1.2.                      How to specify SDB no. 0001.

Chapter 5.1.3.                      How to specify SDB no. 0002.

#### 4.4.2 *The About command*

You use the About command to display information about the RingSys macro's version number and user support.

When you choose the About command the RingSys About dialogue box appears, see fig. 19.



*Figure 19: The RingSys About dialogue box.*

## 5. The setup file

The setup file is an XLS-document. It must be open during a RingSys session. The active setup file is defined and opened in the System Parameters dialogue box. ***If you make changes to the setup file you must always save it using the Save command from RingSys' File menu before proceeding.***

The information in the setup file is organized in Site Definition Blocks (DB). There are two main types of DBs, the System Definition Blocks (SDB) and the File Definition Blocks (FDB).

Site Definition Block                      Holds

System Definition Block                      System information and tables for automated processing. Occupies site numbers 0000 - 0009.



File Definition Block	Description of the database file formats and information about how the work file and charts should be formatted. Occupies site numbers 0000 - 0009.
-----------------------	---

Each DB is identified by a unit site number. The site number must consist of 4 numerals. Legal site numbers are 0000 - 9999. The 0000 - 0009 site numbers are reserved for SDB use. You can only use site numbers 0010 - 9999 for FDBs.

The WCSETUP.XLS setup file assumes that you have installed RingSys on the C drive. A File Definition Block called 0010 is included in the setup file. It is ready for use. You can change the site number and database file names if necessary.

## 5.1 The System Definition Blocks (SDB)

The System Definition Blocks (SDB) hold system information and tables for automated processing. The SDBs are identified by a site number less than 0010. That is site numbers 0000 - 0009 are reserved for SDB use.

### 5.1.1 System Definition Block 0000

System settings are defined in SDB 0000. Fig. 20. shows SDB 0000.

```
[Site]No=      0000
SiteNumbers=  0010'
DatabaseDir=  C:\RINGDATA\SYM
ExtractDir=   C:\RINGDATA\CSV
[End]
```

*Figure 20: System Definition Block 0000.*

The following format variables are of interest:

<u>Format variable</u>	<u>Value(s)</u>
DatabaseDir=	The standard database file directory including the drive specifier. RingSys assumes that the unscaled database files are stored in this directory. The database files are assumed to be stored in subdirectories that reside in this directory.
ExtractDir=	The standard extracted file directory including the drive specifier. RingSys will extract data from the database files to subdirectories that reside in this directory.

---

<u>Look up</u>	<u>To read about</u>
Chapter 4.2.5.	Other system settings.

### 5.1.2 System Definition Block 0001

SDB no. 0001 is a table that specifies the following automated procedures:

- \* Extracting data from the database files to work files.
- \* Work file processing such as computing statistics and making charts.

Fig. 21 shows an example of SDB no. 0001.

```
[Site]No=0001
SiteNumber  Sensor  UseCurr  UseTemp  FromDate      ToDate      Period  Directory
0010       A011    Y        N        91.08.25 13:00  91.08.25 21:00  A       9018
0010       B        Y        N                A                A       9108
[End]
```

Figure 21: System Definition Block no. 0001.

SDB no. 0001 uses the following format variables:

Format variable	Value(s)
[Site]No=0001	The site identifier. Start of SDB. The site number must be 0001.
[End]	End of SDB.

The table between the start and end markers specifies which variables should be processed and in which periods.

Column	Value
Site Number	The number of the site you want to process. It must be 4 numerals. If you enter ';' in front of the number RingSys ignores the row. In order for Excel to display leading zeros (e.g. 0091) the column's number format must be 0000.
Sensor	The file identity of the variable you want to process as specified by the FileIdentity= format variable in the site's File Definition Block in the setup. Enter * (asterisk) to process all variables belonging to the site. Even if you want to process the second variable in the work file you must enter the file identity of the <u>first</u> variable.
Use Current	Enter 'Y' if you want to process the Current. Enter 'N' if you do not want to process it. If you enter 'B' (Both) and choose automated printout of charts both variables will be plotted together in one chart. But only the statistics of the Current will be computed.
Use Temp.	Enter 'Y' if you want to process the Temperature. Enter 'N' if you do not want to process it.

From Date	The date from which you want the processing to start. Enter 'A' (Auto) if you want to process data from the start of the file.
To Date	The date at which you want the processing to stop. Data at To Date is processed if found. Enter 'A' (Auto) if you want to process data until the end of the file.

You must enter the From and To Dates using Windows' date format notation.

Period	You can process data between From Date and To Date in intervals. Enter 'A' (Auto) to process the whole period as one interval. The column is not used by the database processing commands. Legal interval size codes are:
--------	---

nY n Years  
 nM n Months  
 nD n Days  
 nH n Hours  
 nN n miNutes  
 nS n Seconds

where n is an integer. There is no spaces between the integer and the letter. The first period starts at From Date and ends just before From Date + Period. The second Period starts at From Date + Period and so on.

Directory	The name of the database and work file subdirectories. The directories must be located in the standard database and extracted work file directories respectively. Do not include any '\' (backslash) before or after the directory name. You can specify a subdirectory such as 9108\NORTH. If you do not specify any directory it is assumed that the standard database and work file directories will be used.
-----------	--

### 5.1.3 System Defintion Block 0002

SDB no. 0002 is a table that specifies the following automated procedures:

- \* Building database files.

---

Fig. 22. shows an example of SDB no. 0002.

```

[Site]No=0002
SiteNumber Adapter No. Use Adapter      FromDate      ToDate      Directory
0010          *          Y          A          A          9108
0010          1          N      91.08.25 00:00  91.08.25 12:00  9108
[End]

```

Figure 22: System Definition Block no. 0002.

SDB no. 0002 uses the following format variables:

Format variable	Value(s)
[Site]No=0002	The site identifier. Start of SDB. The site number must be 0002.
[End]	End of SDB.

The table between the start and end markers specifies which database files should be processed and in which periods.

Column	Value
Site Number	The number of the site you want to process. It must be 4 numerals. If you enter ';' in front of the number RingSys ignores the row. In order for Excel to display leading zeros (e.g. 0091) the column's number format must be 0000.
Adapter No.	The <u>number</u> of the adapter you want to process, 1 - 4. You find the number by counting file names after the FileName= format variable in the site's FDB. Do not count the text 'UseAll' if it appears. Enter * (asterisk) if you want to process all adapters used at the site.
Use Adapter	Enter 'Y' if you want to process the specified adapter. Enter 'N' if you do not want to process it.
From Date	The date from which you want the processing to start. Enter A (Auto) if you want to process data from the start of the database file.
To Date	The date at which you want the processing to stop. Enter 'A' (Auto) if you want to process data until the end of the database file.

You must enter the From and To Dates using Windows' date format notation.

Directory=	The name of the database file subdirectory. It is <del>assumed that the directory is located in the standard</del> database file directory. Do not include any '\' before or after the directory name. You can specify a subdirectory, e.g. 9108\NORTH. You <u>must</u> specify a subdirectory.
------------	---

## 5.2 The File Definition Block

Every site must be defined in a FDB in the setup file in order for RingSys to be able to process it. The declaration includes a unit site number which identifies the site and the site's FDB. Fig. 23. shows the FDB for site 0010.

```
[Site]No=0010
FileName=      UseAll      0010SA01  0010SA02  0010SA03  0010SA04
Info=         WetCorr      WetCorr, SA 1  WetCorr, SA 2  WetCorr, SA 3  WetCorr, SA 4

FileIdentity1= Date  UseAll  A011  T011  A012  T012  A013  T013  A014  T014  A021
/ExcelData/
VarName=      x      x      Curr  Tmp.  Curr  Tmp.  Curr  Tmp.  Curr  Tmp.  Curr
ChartTitle=   x      x      Cur1  Tmp1  Cur2  Tmp2  Cur3  Tmp3  Cur4  Tmp4  Cur5
Ytext=        x      x      [nA]  [°C]  [nA]  [°C]  [nA]  [°C]  [nA]  [°C]  [nA]
Ymin=         x      x      A      -10   A      -10   A      -10   A      -10   A
Ymax=         x      x      1000  50    1000  50    1000  50    1000  50    1000
Xtext=        Date
Xmin=         00:00
Xmax=         23:59
Xscale=       1      01:00
XlsDateFmt=   åå.mm.dd
[End]
```

Figure 23: A File Definition Block.

Some of the lines in the FDB are hidden because they are rarely changed.

You should change the [Site]No= and FileName= entries to reflect your site number and database file names respectively. You should also change the XlsDateFmt= variable to reflect your (Windows) language. If the language is English change the entry to yy.mm.dd hh:mm.

Like the SDB the FDB has the standard format variables:

Format variable	Value(s)
[Site]No=nnnn	The SDB identifier. nnnn is a site number consisting of 4 numerals. Legal values are 0010 - 9999.
Info=	The contents of the information cells belong to the cell above them respectively. That is each adapter has its own information cell. The information is output to the adapter's charts.
[End]	The end marker of the FDB.

The FDB in fig. 23. describes a typical WetCorr setup. The site includes 4 adapters called 0010SA01, 0010SA02, 0010SA03 and 0010SA04 respectively. Because of lack of space only the first 5 sensors are shown in the figure.

The following format variables describe the database file format:

<u>Format variable</u>	<u>Value(s)</u>
------------------------	-----------------

FileName=	The first value must equal UseAll. This text appears in the Build Database dialogue box. In the following cells enter the name(s) of the database/ adapter file(s), e.g. 0010SA01, 0010SA02 etc.
-----------	--

FileIdentity=	The values identify the cells. The values must equal:
---------------	---

Date UseAll A011 T011 A012 T012 A013 T013 A014 T014 A021...

The values continue until the current and temperature on the last cell, A044 T044.

The format variables below the /ExcelData/ label are used to format the work file and charts:

<u>Format variable</u>	<u>Value(s)</u>
------------------------	-----------------

VarName=	The text appears on top of the data column in the work file and in the chart legend box. You may format the text.
----------	---

ChartTitle=	The text appears as chart title text. You may format the text.
-------------	--

Ytext=	The text appears along the Y-axis. You may format the text.
--------	---

Ymin=	The Y-axis minimum value. Enter A (Auto) if you want Excel to auto scale the minimum value.
-------	---

Ymax=	The Y-axis maximum value. Enter A (Auto) if you want Excel to auto scale the maximum value.
-------	---

Xtext=	The text appears along the X-axis. You may format the text.
--------	---

Xmin=	The X-axis start date. Enter A (Auto) if you want Excel to auto scale the start date.
-------	---

Xmax=	The X-axis start date. Enter A (Auto) if you want Excel to auto scale the start date.
-------	---

The start end date must be entered using Windows' date format notation and the column's number format must equal the format specified in the System Parameters dialogue box.

If you do not specify a year and day but only the hour, e.g. 00.01.00 00:00 or 00:00 in Ymin= the start date is set to the specified hour of the first date in the data series. If you do not specify a year and day but only the hour, e.g. 00.01.00 23:59 or 23:59 in Ymax= the end date is set to the specified hour of the last date in the data series. 00:00 and 23:59 respectively is the default setting.

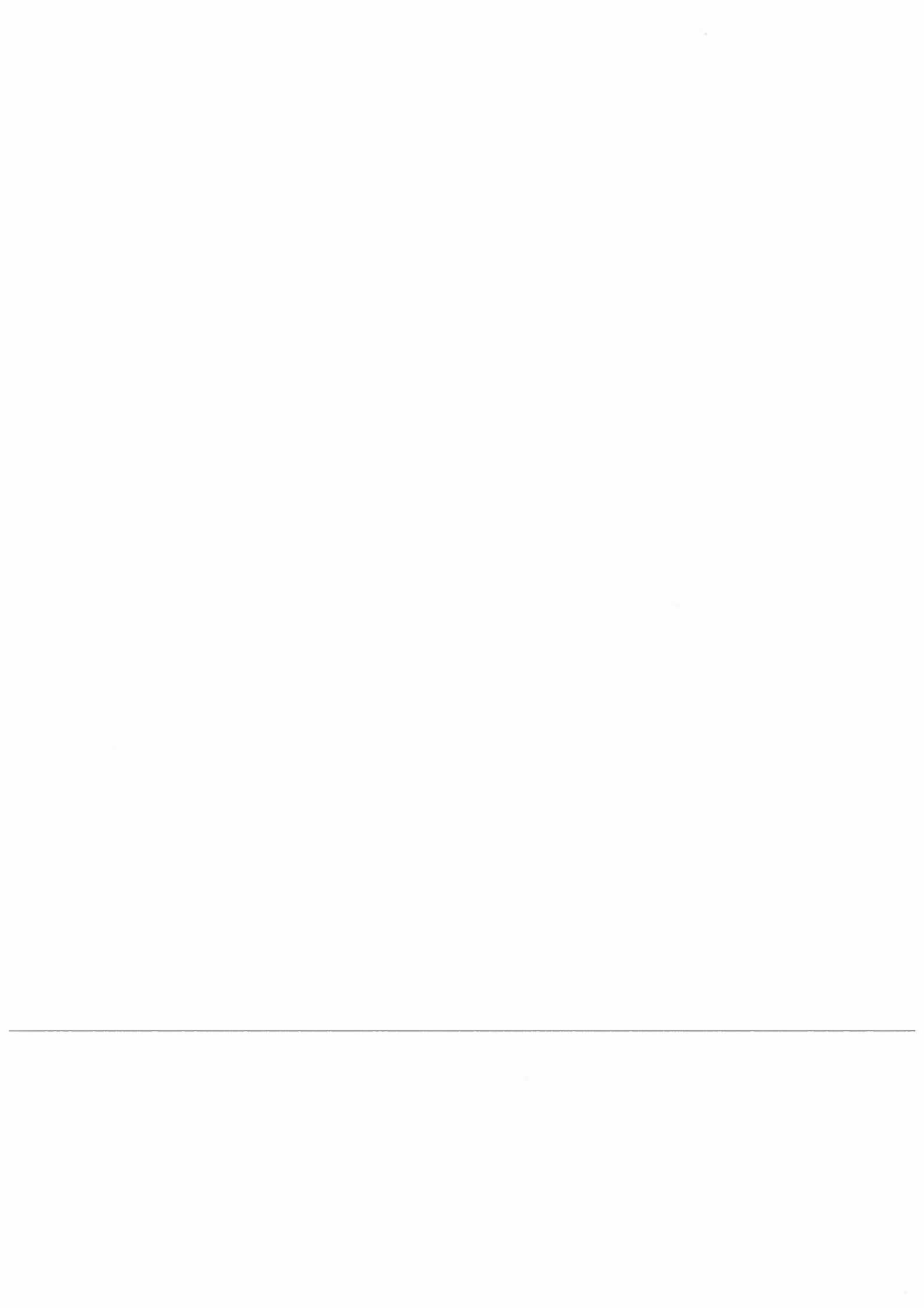
Xscale= The distance between X-axis tick labels (in days) and tick marks (in hours) respectively. Enter A (Auto) if you want Excel to auto scale the distances. The hours are specified as hh:mm, e.g. 12:00 for tick marks every 12 hours.

XlsDateFmt= The date and time format used to format the date column in the work file and the X-axis tick labels in the chart. The format must be entered using Excel's date format number notation. e.g. yy.mm.dd if you only want to display the dates or yy.mm.dd hh:mm if you want to display both date and time.

# **Appendix A**

## **Installing RingSys**





## Installing RingSys

In order to run RingSys you must satisfy the following minimum requirements: A 80386 SX PC including 4Mbytes of RAM, a mouse, VGA monitor, printer, DOS 3.3 or later, MS Windows 3.0 or later and MS Excel 3.0. or 4.0. You will run in to problems when using MS Excel 5.0.

It is assumed that you will install RingSys on drive C:. If you want to use another drive you must contact Leif Marsteen at NILU for a customised installation.

## Adding RingSys to your DOS path

You must add the path of the RingSys program files directory to your DOS path.

### Editing AUTOEXEC.BAT:

1. Start Windows.
2. Open the Accessories document icon in the Program Manager and choose the Notepad program item icon.
3. Choose Open from the File menu. In the File Name text box enter:  
`c:\autoexec.bat`  
 and choose command button OK.
4. Locate the PATH=... entry. Add the following text to your existing path command:  
 `;C:\RINGSYS`
5. Choose Save from the File menu to save your changes and exit Notepad.
6. Reboot the computer.

### Installing RingSys:

1. Start Windows.
2. Choose Run from the File menu in the Program Manager.
3. In the Command Line text box enter:  
`A:INSTALL.BAT A: C:`  
 where A: is your source diskette drive and C: is the target drive for your installation.
4. Choose OK. RingSys will be installed.

## Adding RingSys to the Excel group window

---

If you do not want to be able to start RingSys from the Program Manager you can skip this chapter. You can always start RingSys from Excel.

Adding RingSys to the Excel group window in the Program Manager:

1. Activate the Excel group window.
2. Choose New from the File menu. The New Program Object dialogue box appears.
3. Choose Program Item.
4. Choose command button OK. The Program Item Properties dialogue box appears.
5. In the Description text box enter:  
RingSys
6. In the Command Line textbox enter:  
c:\excel\excel.exe c:\ringsys\openring.xla
7. Choose command button OK. RingSys is added to the Excel group window.

**Checking Windows' International settings**

In order for RingSys to processes our data files correctly we need to adjust Windows' date and time formats, the number separator and the list separator.

Setting Window's date and time formats:

1. Open the Main document icon in the Program Manager and choose the Control Panel program icon.
2. Choose the International program icon in the Control Panel document window.
3. Locate the Date Format and Time Format group boxes. We recommend that you use the following date and time formats respectively:  
yy.mm.dd      hh:mm
4. Change the formats if necessary.

The International dialogue box also displays Window's number separators which we must inspect.

Setting Window's number separators:

1. Locate the Number Format group box. The 1000 separator must equal "," (a comma) while the decimal separator must equal "." (a dot).
2. Change the formats if necessary.

---

~~The International dialogue box also displays Window's list separator which we must inspect.~~

Setting Window's list separator:

- \* Locate the List Separator text box. Change the list separator to "," (a single comma). Choose OK.

## Setting the date and time formats in RingSys

The installation is now almost done. We only need to register Window's date and time formats in RingSys. Choose program icon RingSys in the Excel document window or start RingSys from Excel by opening the C:\RINGSYS\OPENRING.XLA macro . RingSys should be loaded successfully. The RingSys menu is added to your Excel menu bar.

### *Setting the date and time formats for charts and work files*

A shrunked window called WCSETUP.XLS appears in the lower left corner of your Excel window. This is the setup file. Here all sites are specified individually.

#### Setting the date and time formats used to format charts and work files:

1. Maximize the WCSETUP.XLS window.
2. Select the entire first column.
3. Choose Find from the Formula menu. The Find dialogue box appears. In the Find What text box enter:  
`XlsDateFmt=`  
 and choose OK. Hopefully Excel found the entry.
4. Change the value of the entry to reflect your Windows' language, e.g. åå.mm.dd tt:mm if it is Norwegian or yy.mm.dd hh:mm if it is English.
5. Repeat the procedure for all occurrences of the entry.

### *Setting the system date and time format*

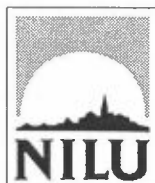
The RingSys system date and time format is used to format the date and time in System Definition Blocks 0001 and 0002 in the setup file. It is specified in the System Parameters dialogue box.

#### Setting the system date and time formats:

1. Choose RingSys from Excel's menu bar. The RingSys menu bar appears.
2. Choose System Params from the File menu. The System Parameters dialogue box appears.
3. Locate the Setup File group box.
4. Change the value of the Date Format to reflect your Windows' language, e.g. åå.mm.dd tt:mm if it is Norwegian or yy.mm.dd hh:mm if it is English.
5. Choose command button Update to register the changes in RingSys.
6. Choose OK.

---

This completes the installation. If you want to use another site number then 0010 which is default you should read chapter 3.2. The File Definition Block. However you should change the number only after having done the exercise in chapter 1. Using RingSys - an exercise.



## Norsk institutt for luftforskning (NILU)

P.O. Box 100, N-2007 Kjeller - Norway

REPORT SERIES OPPDRAGRAPPORT	REPORT NO. OR 41/95	ISBN-82-425-0696-5	
DATE 17.8.95	SIGN. <i>Leif Marsteen</i>	NO. OF PAGES 43	PRICE NOK 75,-
TITLE RingSys - WetCorr User's Manual		PROJECT LEADER Jan F. Henriksen	
		NILU PROJECT NO. O-91023	
AUTHOR(S) Leif Marsteen		CLASSIFICATION * A	
		CONTRACT REF.	
REPORT PREPARED FOR: Norwegian Institute for Air Research (NILU)			
ABSTRACT This report is a user's manual. It describes the RingSys-WetCorr software which calculates and presents time of wetness results.			
NORWEGIAN TITLE RingSys-WetCorr brukermanual			
KEYWORDS WetCorr	Software	Data presentation	
ABSTRACT (in Norwegian) Denne rapporten er en brukermanual. Den beskriver programvaren RingSys-WetCorr som beregner og presenterer våttids (TOW)-resultater.			

\* Classification    A    *Unclassified (can be ordered from NILU)*  
                          B    *Restricted distribution*  
                          C    *Classified (not to be distributed)*