

VisiWinNET 2005

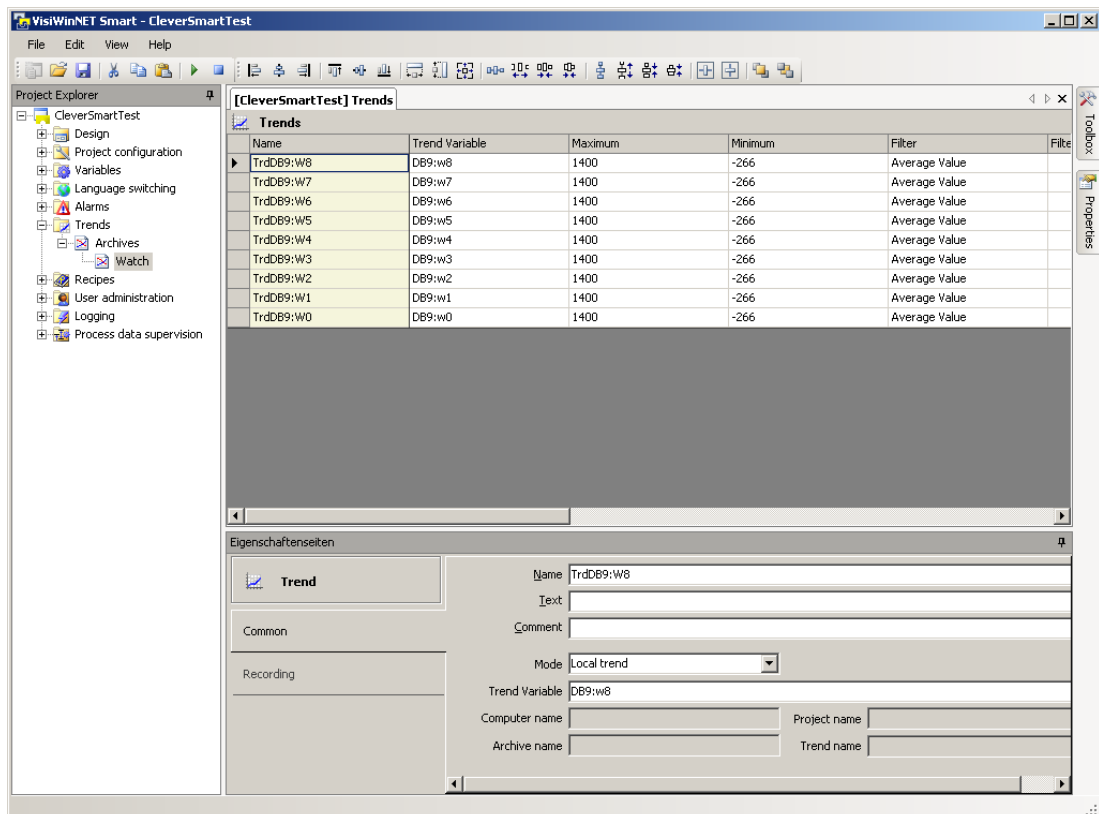
Archive system



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- Class Library
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- Tools
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VisiWinNET 2005

Archive system









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We have checked the contents of this manual for compliance with the described software. Discrepancies can, however, not be ruled out. For this reason we cannot guarantee full compliance. The contents of the manual are subject to regular checking for necessary updates/amendments. Such amendments will be made in the subsequent edition.

Suggestions for improvement are welcome.

Legend

In order to point out particular paragraphs the following symbols are used in the INOSOFT documentations:

	Attention	Passages with this sign should be read – and observed – with particular attention.
	Hint	Important paragraph “additional information”
	Tip	Many roads lead to Rome; here a shortcut is to be found.
	In work	Functions that are in preparation or already implemented but not yet prepared for documentation.
	Example execute	Instructions to be carried out in an example
	Observe result	Results to be observed with carrying out the exemplary instructions

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Contents

1 Preamble	1
2 Introduction to VisiWinNET Archive System	2
3 Design	5
3.1 Start of Archive editor	5
4 Archive system definitions	6
4.1 Definitions and product versions in the archive system	6
4.2 Archive.....	6
4.2.1 Edit Archives	7
4.3 Trend.....	8
4.3.1 Edit Trends	10
5 Definition parameters in the Archive system	11
5.1 Parameter in alphabetic order	11
5.1.1 Archive mode.....	13
5.1.2 Archive name.....	14
5.1.3 Archive Size	14
5.1.4 Cache Size	14
5.1.5 Circular buffer size	15
5.1.6 Comment.....	15
5.1.7 Computer name	15
5.1.8 Create copy	16
5.1.9 Copy path	16
5.1.10 Curve color.....	16
5.1.11 Curve intensity	17
5.1.12 Curve Style.....	17
5.1.13 Deletion variable.....	17
5.1.14 Display maximum	17
5.1.15 Display minimum	18
5.1.16 Error substitution value	18
5.1.17 File Change Event.....	18
5.1.18 File name	20
5.1.19 File path.....	21
5.1.20 File trigger	21
5.1.21 Files count limit	21
5.1.22 File size limit	22
5.1.23 Filter	23
5.1.24 Filter depth	23
5.1.25 Hysteresis	24
5.1.26 Hysteresis mode.....	24
5.1.27 Lower tolerance line.....	25
5.1.28 Lower tolerance line color	25
5.1.29 Maximum	25
5.1.30 Minimum.....	26
5.1.31 Name.....	26
5.1.32 Project name.....	26
5.1.33 Sample Time	27
5.1.34 Sample Mode	27
5.1.35 Save Data	28
5.1.36 Start/Stop variable.....	29
5.1.37 Substitution value maximum	29
5.1.38 Substitution value minimum	29
5.1.39 Text.....	30
5.1.40 Trend name	30
5.1.41 Trend variable	30
5.1.42 Trigger.....	30
5.1.43 Upper tolerance line.....	31

5.1.44 Upper tolerance line color	31
5.1.45 X-Axis	31

1 Preamble

About this manual

This manual contains specific information on the VisiWinNET archive system such as (amongst others) the explanation of the involved components, the operating reference of the editor, and the description of the archive system definitions.

Questions and Problems

For technical questions and problems please contact your responsible INOSOFT agent or the INOSOFT GmbH Support under +49 (5221) 16 66 02 or email: Support@INOSOFT.com

Frequent questions and problems are dealt with on our homepage under www.inosoft.com

There you will also find a support area for direct contact with our Main Office.

2 Introduction to VisiWinNET Archive System

In general archiving systems serve as data storage, to represent and analyze the data at a later date. The assignment of an archiving system is therefore divided in following functions:

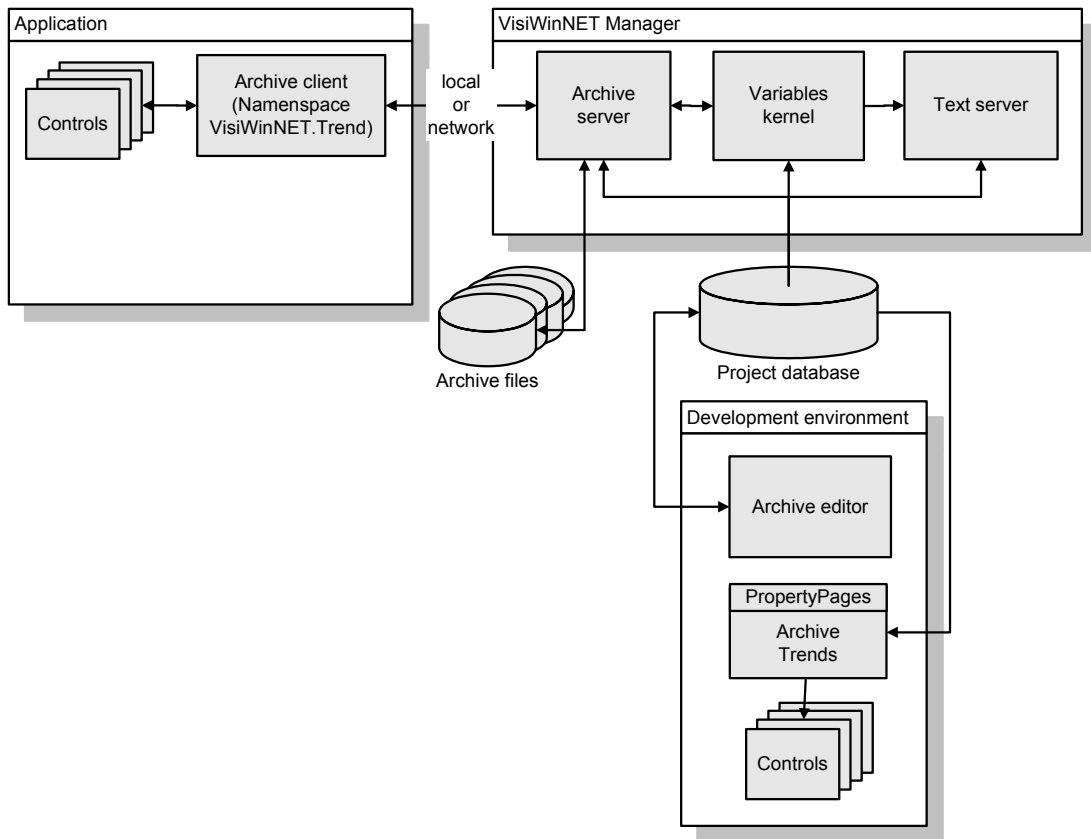
Task	Description
Selection of data to be stored	Which data is relevant for a later evaluation, which data is being archived?
Data format	Data acquisition as raw data, or is it useful to prepare the data before the archiving (error detection coding für Fehlerwertmarkierung, error value selection, data compression, filter...)
Data organization	Where should the data be archived? Is it useful to divide a large quantity of data in subdirectories and files? Which event should trigger a subdivision?
Display	How should the data be displayed (tabular, chart, time progress, x/y-plotter...)?
Evaluation	Where are prominent items in the recorded data (maximum, minimum, stochastic analysis) ?

The VisiWin Archiving System provides the possibility of archiving process variable values with a minimum of configuration effort. As a result, objects, referring to the archiving system, take care of every single archiving task. :

Task	Definition/Object
Selection of data to be stored	Trend definition
Data format	Trend definition
Data organization	Archive definition
Display	Controls "TrendChart", "TrendLegend" and "TrendTime"
Evaluation	"TrendChart" control /access to archive data with help of the classes in namespace "VisiWinNET.Trend"

The archive system components are being introduced on the basis of the following block circuit diagram. Continuing information on the components is provided as cross reference.

VisiWinNET Archive system components



Variables kernel

The Variables kernel provides the process data for recording in the archive server.

(→ Handbooks: process connection)

Archive server

During initializing the archive server reads out the definitions, defined in the project database. Process data to be recorded will be logged on at the variable kernel for monitoring, which means, with process value change, the archive server will be notified. The archive server will save data as trend data in the archive files.

The value recording will directly be forwarded to the connected client application, as required. Thus, online presentation of trend data is enabled. Client-requests on historical trend data will be met through readout of the archive files respective.

The archive server calls application language-dependent texts that are required for the presentation of additional information from the text server.

Text server	<p>The Text server provides additional, optional textual information with all possibilities of dynamic index text. So index text can contain process variable values, further state-referring index text and special formats as date and time, etc.</p> <p>(→ Handbook: Language switching)</p>
Archive files	<p>The archive files contain trend data. They are created, maintained and managed by the archive server.</p>
Archive client	<p>The archive client of a visualization application serves to forward control request on trend data to the archive server.</p> <p>The archive client forwards the functions of the classes in namespace "VisiWinNET.Trend" to the archive server.</p>
Controls	<p>VisiWinNET enables trend data representation in the control "TrendChart". Additional auxiliary controls support the representation with the help of legends and navigation.</p> <p>(→ Handbook: VisiWinNET Class Library)</p>
Project database	<p>The project database contains the archive system definitions. The definition of process value type to be recorded and way of representation is defined in a trend definition.</p> <p>Archive definitions combine trends to a storage unit. _For the included trend definitions it is determined in common, how and where the trend data is to be saved.</p> <p>(→ Chap. "Archive system definitions"/ "Definition parameters" in this handbook)</p>
Archive editor	<p>The archive editor enables the archive system designing during development time. Through the definitions in the project database the runtime behavior of the archive server is determined.</p> <p>(→ Chap. "Designing" in this handbook)</p>
Property pages	<p>The property pages enable the user-friendly selection of definitions from the project database during development time. They are integral part of the VisiWinNET-Controls and can also be included as component with the development of characteristic user controls. As design support for the archive system, VisiWinNET provides property pages for selection of trend- and archive definitions.</p>

3 Design

3.1 Start of Archive editor

VisiWinNET provides an editor for the projection of the definitions of the archive system. This is integrated into the development environment when VisiWinNET is installed. The archive definitions are stored in the project database.

The archive editor is represented in the VisiWinNET Project Explorer by the  symbol.

Following the first click on the "Trends" node the editor initializes itself: All archive definitions that are already defined in the project database are added as sub-nodes to the "Archive" node subjacent to the "Trend Administration" node.

The table editor is opened through the "Display Editor" context menu or by a click on an archive system node in the Project Explorer. The table editor shows the contents of the selected node.

- | | |
|----------------------------------|---|
| "Archive" node | All archive definitions of the project are displayed in the table editor. |
| "Archive Definition" node | All trend definitions projected in the archive are displayed in the table editor. |


4 Archive system definitions

4.1 Definitions and product versions in the archive system

Below a collection of the definitions of the VisiWinNET archive system. In addition the information is provided as to in which product version the definition is contained.

Definition	VisiWinNET Standard	VisiWinNET Compact	VisiWinNET Embedded
Archive	✓	✓	✓
Trend	✓	✓	✓

4.2 Archive

Archives define the storage behavior of trend data. They are presented in the project explorer under the access node "Archive" (Symbol ) and provide for following functionality:

- Definition of storage media (HD, RAM).
- Trigger for Scanning, memory start, memory stop and memory swap.
- Definition of swap file size and continuous swap filenames.



Applies to VisiWinNET Smart users: Depending on the selected target device there are some settings that are not available or only configurable with limitations. For more information, see the Device Catalog.

Archive definition parameters

Name	Description
Archive mode	Ring buffer/ Sequential archive
Archive Size	Defines the number of samples between the swapping-out events.
Cache Size	Determines the quantity of data logging before recording in the file.
Circular buffer size	Max. number of data sets in the archive
Comment	Comment for archive
Delete variable	Binary variable (Value = 1: current archive is deleted, Trigger is being reset automatically)
File Change Event	Event for new archive file creation
File name	Archive file name
File path	Path, under which the archive data is stored.
File trigger	Event for swapping-out in a new file (i.e.: trigger variable, time, date, formula, ...)
files count limit	Limit for the arising archive data (by number).

files size limit	Limit on arising archive data (by total size).
Create copy	Determines whether an additional copy of archive files is to be created.
Copy path	Determines the directory in which an additional copy of archive files is to be created.
Name	Archive name in the project explorer
Sample Mode	Determines which event triggers the archiving of process variable values.
Sample Time	Determines, with the appropriate setting of scan type, the series of archiving process variable values.
Save Data	Access type to the archive file
Start/Stop variable	Binary variable (Value = 0: Stops the recording, Value = 1: Start of recording)
Text	Localized Name of the definition
Trigger	Scan trigger (automatically reset)
x-axis	Which variable serves as trigger stamp.

4.2.1 Edit Archives

Archives are displayed in the Project Explorer under the equally named node. Every archive definition contains:

- an editable set of parameters: Here the name or for example the accumulative acknowledgement can be set.
- trend definitions where applicable: Trend definitions are displayed in the table editor. They contain the information about which process values are to be recorded.

The editor provides the following functions for the projecting of archives:

Create new archive	Through "New" entry in the context menu of the "Archives" node.
Edit parameters	A click on an archive node loads the appropriate parameters to the VisiWinNET properties page. Here the parameter values of the archive definition can be edited.
Delete archive	Through the "Delete" entry in the context menu of an archive node the definition is deleted. In the process all secondary definitions (trends) are also deleted from the project.

4.3 Trend

Trend definitions are represented in the table editor as definitions, included in an archive definition through table lines. The most essential function of a trend definition is the definition of a process variable, which should be recorded. The trend definition serves in addition for following functions:

- Filter possibilities
- Error correction
- Recording Scaling
- Storage of requested presentation type

Trend definition parameters can be divided into two categories:

1. Recording parameter: Between the process variable value to be recorded and the archiving, a conversion is processed.
2. Display parameter: Between the reading of the recorded values and the presentation in the controls, a conversion is processed.

For a better view, the trend definitions are listed with the following symbols:

Recording parameter:


























Display parameter:



Not all parameters of this definition are supported by each VisiWinNET product type. An overview of the implemented parameters is listed in the chapter "alphabetical parameters overview" (Chapter: 5.1).

Trend definition parameters

Name	Description	Parameter type
Archive name	Name of archive with remote trend	
Comment	Comment for trend	
Computer name	Name of network computer with remote trend	
Curve color	Curve color in the control	
Curve intensity	Curve intensity in pixel image in the control	
Display maximum	Maximum displayed value in the control	
Display minimum	Minimum displayed value in the control	
Error substitution value	Substitution value for recording error	
Filter	Filter method for recording	

Filter depth	Parameter "Filter" settings	
Hysteresis	Recording hysteresis (difference for recording variable value)	
Hysteresis mode	Hysteresis mode, size definition for hysteresis	
Lower tolerance line	Value of lower tolerance line in the control	
Lower tolerance line color	Color of lower tolerance line in the control	
Maximum	Recording maximum (variable or constant)	
Minimum	Recording minimum (variable or constant)	
Name	Unique definition designator	
Project name	Project name with remote trend	
Substitution value maximum	Substitution value, if recording value is above maximum (variable or constant)	
Substitution value minimum	Substitution value, if recording value is below minimum (variable or constant)	
Text	Localized name for the definition	
Trend name	Name of trend definition with remote trend	
Trend variable	Process variable name, being recorded	
Upper tolerance line	Value of upper tolerance line in the control	
Upper tolerance line color	Color of upper tolerance line in the control	

4.3.1 Edit Trends

Trends are projected in archives, and displayed in the table editor. Every trend definition contains an editable set of parameters: Here the name, the variable that is to be recorded, and further functions are set.

The table editor of the archive system is opened through a click on the appropriate node in the Project Explorer.

The editor provides the following functions for the projecting of trends:

- Create new trend** Through the "New" entry in the context menu of the table editor a new trend definition is added to the project.
- Edit parameters** The VisiWinNET properties page displays the parameters of the trend definitions highlighted in the table editor. Editing trends is, however, also allowed directly in the fields of the table editor.
- Delete trends** One or multiple trend definitions can be deleted by:
- first highlighting the trend definition that is to be deleted (click on the selector column at the l.h. margin of the table, where applicable with the Ctrl or Shift key held down for multiple selection)
 - then selecting the "Delete" entry in the context menu of the table editor.

5 Definition parameters in the Archive system

In the following an alphabetical list of parameter of the archive definitions.

The description of the parameter includes following information:

Block	Description
parameter for	lists the objects that contain this parameter.
description	describes the functionality of the parameter.
database box	the name of the table column in the VisiWin project database.
data type	the data type of the parameter.
default value	The value, that is usually awarded to the parameter after inserting a new object.
max. length	the max. length of possible input.

5.1 Parameter in alphabetic order

Below an alphabetic collection of the parameters. In addition the information is provided as to which VisiWinNET product version supports the parameter.

Parameter name	VisiWinNET Standard	VisiWinNET Compact	VisiWinNET Embedded
Archive mode	✓	✓	✓
Archive name	✓		
Archive Size	✓	✓	✓
Cache size	✓	✓	✓
Circular buffer size	✓	✓	✓
Comment	✓	✓	✓
Computer name	✓		
Create copy	✓		
Copy path	✓	✓	✓
Curve color	✓		
Curve intensity	✓		
Delete variable	✓	✓	✓
Display maximum	✓		
Display minimum	✓		
Error substitution value	✓	✓	✓
File Change Event	✓	✓	✓
File name	✓	✓	✓

File path	✓	✓	✓
File trigger	✓	✓	✓
Files count limit	✓	✓	✓
Files size limit	✓	✓	✓
Filter	✓	✓	✓
Filter depth	✓	✓	✓
Hysteresis	✓	✓	✓
Hysteresis mode	✓	✓	✓
Lower tolerance line	✓		
Lower tolerance line color	✓		
Maximum	✓	✓	✓
Minimum	✓	✓	✓
Name	✓	✓	✓
Project name	✓		
Sample Time	✓	✓	✓
Sample Type	✓	✓	✓
Save Data	✓		
Start-/Stop variable	✓	✓	✓
Substitution value maximum	✓	✓	✓
Substitution value minimum	✓	✓	✓
Text	✓	✓	✓
Trend name	✓		
Trend variable	✓	✓	✓
Trigger	✓	✓	✓
Upper tolerance line	✓		
Upper tolerance line color	✓		
x-Axis	✓		

5.1.1 Archive mode

Parameter for

Archive

Description

The "Archive Mode" parameter determines whether the archive is to act as a circular cache or a sequential archive.

Setting

Description

Ring buffer (on Hard disk)

The maximum number of scan values in the archive is set by the "Ring Buffer Size" parameter. For this a firm memory area is reserved. Once this memory area is reserved. Once this memory area is for the first time filled with recorded values the recording is continued at the beginning of the recording area. With this the "oldest" recording values are overwritten. In the process the data are written to the hard disc, and can for example be looked at in retrospective after re-starting the computer.

Ring buffer (RAM)

Opposite to the setting "Ring Buffer (on hard disc)" the data are filed in the main memory. After a re-start of the project the data are no longer available.

Sequential archive (on Hard disk)

The archive file can take any size. A file change takes place if:

- a) the archive exceeds the previously set size ("Archive Size" > 0) or
- b) a swapping event occurs (see "File Change Event" parameter).

5.1.2 Archive name



Parameter for

Description

Trend

Specifies the name of the archive with remote access.

"Remote trends" obtain their data not from the variable kernel but from the trend server of another project running in the network. The following parameters are relevant as specifications for the remote access:

Computer name: network name of the computer on which the remote trend server runs

Project name: name of the VisiWinNET project running on the remote computer

Archive name: name of the archive in the remote project

Trend name: name of the trend definition in the remote project

5.1.3 Archive Size

Parameter for

Description

Archive

Defines the number of samples, before swapping-out the archive file.

If the archive is defined as a subsequent archive ("Archive mode" parameter) the archive size only has a function if the "File change event" parameter is not set to "never" or "Trigger variable set".



The number of samples is not identical with the number of data sets in the archive file. The archive file includes changed trend data only, that means, if the trend variable value does not change, the time stamp only, will be changed in the archive file with repeated sampling.

5.1.4 Cache Size

Parameter for

Description

Archive

Determines how many measured values are buffered before writing to the archive file. The establishment of cache for stored measuring data reduces the number of accesses to the archive file. Thus, system utilization is reduced. If the cache size "0" (start value) remains, every recorded measured value is written directly in the archive file.

Property is ignored by the archival system if the archive type is set on "RAM" (Look at parameter "Archive mode").

5.1.5 Circular buffer size

Parameter for

Archive

Description

Defines the maximum number of data sets in the archive.



The period of time in which data is overwritten does not only depend on the number of samples, set here. A new sample value will only be recorded in the archive if the recorded trend variable value changes. With repeated sampling, an unchanged trend variable value results in the time stamp change of the last entered value in the archive.



This parameter is activated only, if the parameter "Archive mode" was set appropriately. A dimensional information for sequential archives can be set in the parameter "Archive size".

5.1.6 Comment

Parameter for

Archive, Trend

Description

Line for any text: A short reference to the appropriate definition functionality improves the survey and improves orientation for the designer.

5.1.7 Computer name



Parameter for

Trend

Description

Specifies the name of the computer with remote access.

"Remote Trends" obtain their data not from the variable kernel but from the trend server of another project running in the network. The following parameters are relevant as a specification for the remote access:

Computer name: network name of the computer on which the remote trend server runs

Project name: name of the VisiWinNET project running on the remote computer

Archive name: name of the archive in the remote project

Trend name: name of the trend definition in the remote project.

As a computer name either the name of a computer itself or a reference to a computer name can be specified. The specification of a reference is indicated to the trend server by a leading "@" character in the computer name.



The project configuration contains a section named "Computer names". Here the synonymns specified as computer names are dissolved. Editing of the project configuration is possible with the "VWNConfig.exe program (in the VisiWinNET directory).

5.1.8 Create copy

Parameter for

Description



Archive

Determines whether a copy of the archive files is to be created.

The parameter only has a function if:

- the "Archive mode" parameter is set to "...(on hard disk)"
- the "copy path" parameter contains a path specification.

The "Create Copy" parameter is missing in the Compact/Embedded runtime. Instead, if there is a valid path specification in "Copy Path", a copy of the archive file is created.

5.1.9 Copy path

Parameter for

Description



Archive

Determines the directory into which archive files are to be copied.

VisiWinNET allows copying of archive files during a file change event. When a new file is being created by the archive server an additional copy of the file that was written to so far can be created by entering the copy path.

If a network drive is specified as copy path and if at runtime that network drive is temporarily not available the copy order is prebooked until the next file change event. When the network drive becomes available again later all pending copy orders are executed.

In the "Standard" runtime the parameter only has a function if "Create Copy" is activated.

In the "Compact" runtime no copy is created if nothing has been specified in "Copy Path".

Path specifications under Windows CE

Not all indices under Windows CE are persistent. Certain path specifications such as "\Windows" are newly generated with every new start. Here no permanent copy can be created.

Windows CE does not know drive letters. When developing an CE project it is recommended to read the correct path specification on the CE appliance through the File Explorer.

5.1.10 Curve color




Parameter for

Description

Trend

Determines the trend curve color displayed in the control.

In the editor, a dialog window for color selection is opened through the button .

5.1.11 Curve intensity



Parameter for
Description

Trend

Determines the curve width in the 'TrendChart' control. "Pixel" image.

5.1.12 Curve Style



Parameter for
Description

Trend

Determines how the individual reading points are to be connected with each other. This setting can be used in the TrendChart control element.

Style	Description
-------	-------------

Interpolated	The trend values recorded in the archive are connected with each other in the control element through a straight line.
---------------------	--

Step	The trend values recorded in the archive are connected with each other in the control element through a step.
-------------	---


5.1.13 Deletion variable

Parameter for
Description

Archive

Process variable name (digital variables). If the variable value is set to "1", the archive file content is deleted.

After deletion of archive file content the deletion variable value is reset to "0" automatically.

In the editor, a dialog window for process variable selection is opened through the button .

5.1.14 Display maximum



Parameter for
Description

Trend

Maximum visual recording value in the control: defines the value with which the presented recording value will migrate upwards in the control.

5.1.15 Display minimum



Parameter for	Trend
Description	Minimal visual recording value in the control: defines the value with which the presented recording value will migrate downwards in the control. The "Display minimum" defines, together with the "Display maximum", the display surface for recording values.

5.1.16 Error substitution value



Parameter for	Trend
Description	In case of connection failure between PLC and computer, when the process variable value can no longer be determined, a substitution value can be defined. This value will be recorded instead of the true value. The parameter "Error substitution value" allows following input:

Input	Type	Description
	Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)
	String	Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button .

5.1.17 File Change Event

Parameter for	Archive	
Description	Defines the event that leads to creation of a new archive file.	
Input	File change event	
	Trigger variable set	A new swapping-out file will be created if the variable, specified in the parameter "file trigger" assumes the value "1".
	Number of data sets achieved	A new swapping-out file will be created if the number of data sets, saved in the current archive exceeds the number, specified in the parameter "Archive Size".
	Change of year	A new swapping-out file will be created with every change of year of the system time.
	Change of month	A new swapping-out file will be created with every change of month of the system time.
	Change of week	A new swapping-out file will be created with every change of week of the system time.

Change of day	A new swapping-out file will be created with every change of day of the system time.
Change of hour	A new swapping-out file will be created with every change of hour of the system time.
Change of minute	A new swapping-out file will be created with every change of minute of the system time.
Change of second	A new swapping-out file will be created with every change of second of the system time.
None	The archive file can adopt any size.



The "Year change" ... "Second change" settings can be combined with the "Archive size" parameter. If the number of scans set here is exceeded a new file is created prior to the the set file change event. This additional restriction makes sense if new scans are for example initiates through a trigger.

5.1.18 File name

Parameter for
Description


Archive

Determines the file name under which the archive content should be stored. The file name is set either automatically or manually.

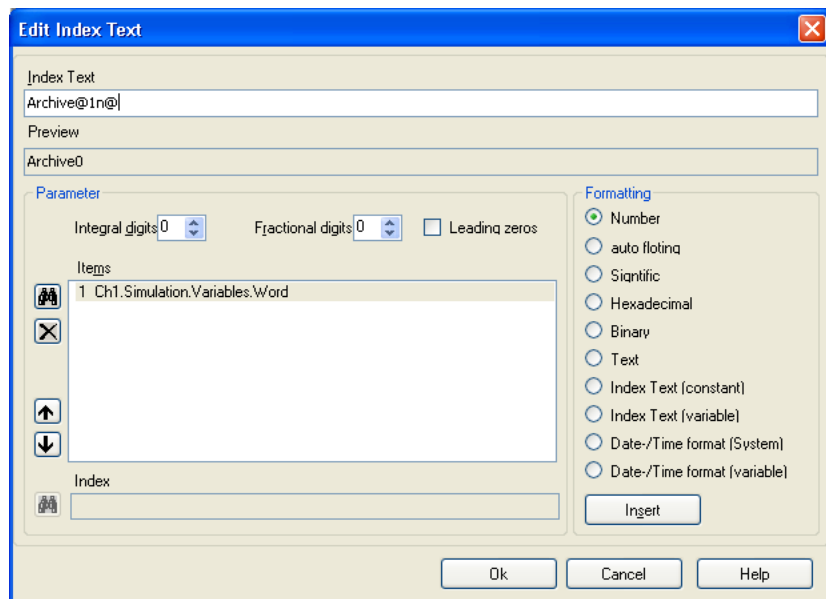
automatically

The file name consists of a consecutive number, the current date, and the current time at which the file was created.

manually

The input possibilities for "File name" are similar to those of a voice related text in the index text editor: Process variable values can be included dynamically in the file name. The appropriate help dialog for editing dynamic integral process variable values is opened through the button 

Example:



The integrated dynamic process variable value is resolved during run time with the indicated format characters. If the process variable value is "Ch1.Simulation.Variables.Word", i.e. 100, at saving time, the archival file is stored under the name Archive100.

The path, under which the file is set up, is defined through the parameter "File path".

5.1.19 File path

Parameter for

Archive

Description

Defines the path under which the archive file should be stored. The path declaration can be absolute (ie.: C:\VisiWinNET\Projects\MyProject) as well as comparative to the project directory. Comparative path declaration starts with the key word "<ProjectDir>" (i.e.: "<ProjectDir>\Archive" accesses to the sub directory "Archive" of the project directory. The filename is defined in the parameter "File name".



In the "Compact" runtime the "File Path" parameter is set commonly for all archive definitions under the "Trends→Configuration" node.

In the "Compact" version the key word for the project index is to be specified as "#ProjectDir#".


5.1.20 File trigger

Parameter for

Archive

Description

Defines the variable name, through which value change to "1" a new swapping-out file will be created.

Through the button  a dialog for process variable selection will be opened in the editor.

The file trigger is relevant only, if the parameter "File change event" is set to "Trigger variable set".

After swapping-out the file, the trigger variable will automatically be reset.

5.1.21 Files count limit

Parameter for

Archive

Description

The parameter "files count limit" defines the maximum number of archive files to be created on the hard disk through the archive definition. If the number, given here is exceeded, first saved archive files will be deleted. This protects the hard disk from overflow.

Setting this value to "0" (default) means that no limitation will be executed.



The parameter is activated only, if the parameter "Archive mode" is set to "Sequential archive".

Another way of restricting the archive data on the hard disk is enabled through the parameter "file size limit".

5.1.22 File size limit

Parameter for

Archive

Description

The parameter "Maximum total file size" defines the maximum memory space that the archive files of the archive definition can take up. If the size given here (in kilobyte) is exceeded, the first saved archive files will be deleted. This protects the hard disk from overflow.

Setting this value to "0" (default) means that no limitation will be executed.

The parameter is activated only, if the parameter "Save data" is set to "Sequential archive".

If the parameter "Save data" is set to "fast" the size given here, can be exceeded. Size comparison is executed only after the archive files from the cache were written into the file. If the data quantity in the cache is very large, this can possibly lead to the deletion of several first saved files to keep the maximum total file size.

Another way of restricting the archive files on the hard disk is enabled through the parameter "maximum number of files".



5.1.23 Filter



Parameter für

Trend

Description

Recording filter: Before the process variable value is stored, it can be filtered by the parameters "Filter" and "Filter depth". The parameter "Filter depth" indicates the number of measured values processed in the filter. The current measured value is processed together with the <Filter depth> number of last measured values in the filter operation.

Settings

Filter	Value	Description
no Filter	0	No filter will be used
Mean	1	$M = \frac{\sum_{\text{Filter depth}}^{\text{actual}} \text{measured value}}{\text{Filter depth}}$ <p>If "filter depth" is set to "0", no filter will be used.</p>
weighting Mean	2	$\left(\sum_{\text{Filter depth}}^{\text{actual}-1} \text{measured value} \right) * \frac{\text{Filter depth}-1}{\text{Filter depth}} + \frac{\text{actual value}}{\text{Filter depth}}$ <p>If "filter depth" is set to "0", all measured values (since recording start) will be used for filtering</p>
Maximum	3	The maximum value of last <Filter depth> measured values is stored.
Minimum	4	The minimum value of last <Filter depth> measured values is stored.

5.1.24 Filter depth



Parameter for

Trend

Description

Indicates the number of measured values for filter operations (also see parameter "Filter") .

Data type

Integer (Long)

Default value

0

5.1.25 Hysteresis



Parameter for


Trend

Description

The definition of hysteresis in the trend definition can be used for data compression. Process variable values are only stored in the archive if their value changes in relation to the last stored value defined in the parameter "Hysteresis". The hysteresis value can be specified as absolute as well as comparative (also see: parameter "Hysteresis mode").

Input

The parameter "Hysteresis" allows following input:

Type	Description
Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)
String	Another process variable name, whose current value serves as hysteresis. In the editor a dialog window for process variable selection is opened through the button  .

5.1.26 Hysteresis mode



Parameter for

Trend

Description

The hysteresis mode determines how the value of the parameter "Hysteresis" will be interpreted.

Input

Hysteresis mode	Value	Description
Absolute	0	Value of parameter "Hysteresis" serves as recording hysteresis.
Per mil of 'Maximum–Minimum'	1	Value of parameter "Hysteresis" is interpreted as 1/1000 of the difference of the parameters "Maximum" and "Minimum" .
Per mil of recording value	2	Value of parameter "Hysteresis" is interpreted as 1/1000 of the last recorded value.


5.1.27 Lower tolerance line



Parameter for	Trend
Description	Determines the y-position of the line, which represents the lower tolerance line in the control. The value for the lower tolerance line applies to the stored trend value
Data type	Integer (Double)
Default value	0




5.1.28 Lower tolerance line color



Parameter for	Trend
Description	Determines the lower tolerance line color in the control. Tolerance lines are displayed as horizontal lines in the control. They highlight the exceeding of limits. In the editor a dialog window for color selection is opened through the button  .

5.1.29 Maximum



Parameter for	Trend								
Description	Defines the upper range the process variable value can have, without being overwritten by the "Substitution value maximum". The parameter "Maximum" allows following input:								
Input	<table border="0"> <thead> <tr> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Double</td> <td>Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)</td> </tr> <tr> <td>String</td> <td>Another process variable name, whose current value serves as maximum value. In the editor, a dialog window for process variable selection is opened through the button .</td> </tr> <tr> <td>No input</td> <td>No review.</td> </tr> </tbody> </table>	Type	Description	Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)	String	Another process variable name, whose current value serves as maximum value. In the editor, a dialog window for process variable selection is opened through the button  .	No input	No review.
Type	Description								
Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)								
String	Another process variable name, whose current value serves as maximum value. In the editor, a dialog window for process variable selection is opened through the button  .								
No input	No review.								

5.1.30 Minimum



Parameter for

Trend

Description

Defines the lower range the process variable value can have, without being overwritten by the "Substitution value minimum".

The parameter "Minimum" allows following input:

Input

Type	Description
Double	Constant (separate the decimal fraction from the number with a ".", ie. 1.234)
String	Another process variable name, whose current value serves as minimum value In the editor, a dialog window for process variable selection is opened through the button  .
No input	No review.

5.1.31 Name

Parameter for

Archive, Trend

Description

VisiWin-definition name. The definition name applies to the unique name giving convention.

5.1.32 Project name



Parameter for

Trend

Description

Specifies the name of the project with remote access.

"Remote Trends" obtain their data not from the variable kernel but from the trend server of another project running in the network. The following parameters are relevant as a specification for the remote access:

Computer name: network name of the computer on which the remote trend server runs

Project name: name of the VisiWinNET project running on the remote computer




Archive name: name of the archive in the remote project

Trend name: name of the trend definition in the remote project

5.1.33 Sample Time

Parameter for	Archive								
Description	The parameter "Sample Time" has, dependent on the value of parameter "Sample Mode", various functions.								
Settings in dependence on the parameter "Scan type"	<table border="0"> <tr> <td>Scan type</td> <td>Functions</td> </tr> <tr> <td>Synchronous</td> <td>Number of VWE-cycles per recording</td> </tr> <tr> <td>Asynchronous</td> <td>Number of milliseconds between the recordings</td> </tr> <tr> <td>All the rest</td> <td>No function</td> </tr> </table>	Scan type	Functions	Synchronous	Number of VWE-cycles per recording	Asynchronous	Number of milliseconds between the recordings	All the rest	No function
Scan type	Functions								
Synchronous	Number of VWE-cycles per recording								
Asynchronous	Number of milliseconds between the recordings								
All the rest	No function								

5.1.34 Sample Mode

Parameter for	Archive															
Description	Determines the time of archiving process variable values.															
Settings	<table border="0"> <thead> <tr> <th>Scan type</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Synchronous</td> <td>0</td> <td>The VWE-Cycle serves as time base for recording. The parameter "Sample time" specifies which multiple of the VWE-Cycle serves as sample time.  The VWE-Cycle setting is located in the project configuration. It can only be used in the standard runtime.</td> </tr> <tr> <td>Asynchronous</td> <td>1</td> <td>The time base for recording is a millisecond. The parameter "Sample time" specifies how many milliseconds pass per sample.</td> </tr> <tr> <td>ChangeX</td> <td>2</td> <td>Recording is started with the process variable value change defined in the parameter "x-Axis".</td> </tr> <tr> <td>Trigger</td> <td>3</td> <td>Recording is started, if the process variable (digital variable) defined in the parameter "Trigger" takes the value "1".</td> </tr> </tbody> </table>	Scan type	Value	Description	Synchronous	0	The VWE-Cycle serves as time base for recording. The parameter "Sample time" specifies which multiple of the VWE-Cycle serves as sample time.  The VWE-Cycle setting is located in the project configuration. It can only be used in the standard runtime.	Asynchronous	1	The time base for recording is a millisecond. The parameter "Sample time" specifies how many milliseconds pass per sample.	ChangeX	2	Recording is started with the process variable value change defined in the parameter "x-Axis".	Trigger	3	Recording is started, if the process variable (digital variable) defined in the parameter "Trigger" takes the value "1".
Scan type	Value	Description														
Synchronous	0	The VWE-Cycle serves as time base for recording. The parameter "Sample time" specifies which multiple of the VWE-Cycle serves as sample time.  The VWE-Cycle setting is located in the project configuration. It can only be used in the standard runtime.														
Asynchronous	1	The time base for recording is a millisecond. The parameter "Sample time" specifies how many milliseconds pass per sample.														
ChangeX	2	Recording is started with the process variable value change defined in the parameter "x-Axis".														
Trigger	3	Recording is started, if the process variable (digital variable) defined in the parameter "Trigger" takes the value "1".														

- Change one, save all** **4** A recording is made when one of the recorded variables changes its value. All trend values of the archive are re-recorded in the process.
- Manual recording only** **6** Recording is done through the recording function "RecordOneSample" of the Client-Object "VisiWinNET.Trend.Archive"
- Change one, save one** **7** A recording is made when one of the recorded variables changes its value or time stamp. Only the one variable is recorded in the process. The other trend values are not recorded..



The "synchronous with the process cycle", "asynchronous (absolute time basis)", "change of the X variable", "trigger" and "manual recording only" scan modes contain a packing function. Only those trend values are recorded in the files that have really changed. If a trend value is unchanged since the last scan only the time stamp is adapted to the current value of the current scan. This effects a data reduction.

The "change one, save one" scan mode does not contain this data reducing function.

5.1.35 Save Data

Parameter for

Description

Archive

The "Save Data" parameter defines, how data is written into the archive.

Value

Description

Fast

As of the first access, the archive file will be kept open until a swapout-event occurs. (also see parameter "File trigger"). Thus, the working speed of the archive-server will be increased.

Safe

The archive file will be closed after each access. The execution speed is slower, data security with system crash is higher though.


Data type

Integer (Long)

Default value




0

5.1.36 Start/Stop variable

Parameter for	Archive
Description	Process variable name. Variable value change activates or deselected the recording in the archive. In the editor, a dialog window for process variable selection is opened through the button  .
Process variable value	0 Recording is stopped. 1 Recording is activated.




5.1.37 Substitution value maximum



Parameter for	Trend						
Description	Substitution value, if the recorded value exceeds the value, defined in the parameter "Maximum". The parameter "Substitution value maximum" allows following input:						
Input	<table border="0"> <thead> <tr> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Double</td> <td>Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)</td> </tr> <tr> <td>String</td> <td>Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button .</td> </tr> </tbody> </table>	Type	Description	Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)	String	Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button  .
Type	Description						
Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)						
String	Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button  .						

5.1.38 Substitution value minimum



Parameter for	Trend						
Description	Substitution value, if the recorded value is underneath the value, defined in the parameter "Minimum". The parameter "Substitution value minimum" allows following input:						
Input	<table border="0"> <thead> <tr> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Double</td> <td>Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)</td> </tr> <tr> <td>String</td> <td>Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button .</td> </tr> </tbody> </table>	Type	Description	Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)	String	Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button  .
Type	Description						
Double	Constant (separate the decimal fraction from the number with a ".", i.e. 1.234)						
String	Another process variable name, whose current value is stored instead of the real value. In the editor a dialog window for process variable selection is opened through the button  .						

5.1.39 Text

Parameter for	Archive, Trend
Description	Localizable name that is for example entered in the trend legend as a designator. The name is filed in an index text. It can be translated into any project language in the index editor.


5.1.40 Trend name



Parameter for	Trend
Description	<p>Specifies the name of the trend definition with remote access.</p> <p>"Remote-Trends" do not obtain their data from the variable kernel but from the trend server of another project running in the network. The following parameters are relevant as a specification for the remote access:</p> <p>Computer name: the network name of the computer on which the remote trend server runs</p> <p>Project name: name of the VisiWinNET project running on the remote computer</p> <p>Archive name: name of the archive in the remote project</p> <p>Trend name: name of the trend definition in the remote project</p>

5.1.41 Trend variable



Parameter for	Trend
Description	<p>Determines the process variable name, whose values should be recorded in the archive.</p> <p>In the editor, a dialog window for process variable selection is opened through the button .</p>

5.1.42 Trigger

Parameter for	Archive
Description	<p>The parameter "Trigger" indicates the process variable name (digital variable), whose value change to "1" triggers the sampling.</p> <p>The "Trigger variable" is activated only if the parameter value "Sample Mode" is set to "Trigger".</p>

5.1.43 Upper tolerance line



Parameter for

Trend

Description

Determines the y-position of the line, which represents the upper tolerance line in the control. The value for the upper tolerance line applies to the stored trend value.

5.1.44 Upper tolerance line color




Parameter for

Trend

Description

Determines the upper tolerance line color in the control. Tolerance lines are displayed as horizontal lines in the control. They highlight the exceeding of limits.

In the editor a dialog window for color selection is opened through the button .

5.1.45 X-Axis

Parameter for

Archive

Description

The parameter "x-Axis" specifies the process variable name. When the variable value changes, sampling is triggered.

The parameter "x-axis" is activated only if the parameter "Sample Mode" is set to "Change of x-variable" .