

zenon manual

Alarms administration

v.7.10



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1. Welcome to COPA-DATA help

GENERAL HELP

If you cannot find any information you require in this help chapter or can think of anything that you would like added, please send an email to documentation@copadata.com (mailto:documentation@copadata.com).

PROJECT SUPPORT

You can receive support for any real project you may have from our Support Team, who you can contact via email at support@copadata.com (mailto:support@copadata.com).

LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email sales@copadata.com (mailto:sales@copadata.com).

2. Alarms administration

Alarm administration informs you of faults that occur such as limits being exceeded. It comprises:

1. Alarm status line: (on page 138)

Information line that is always shown in the foreground in Runtime and contains, depending on the configuration, the most recent or oldest unacknowledged alarms.



2. Alarm Message List (AML) (on page 140):

Administers the alarms in a list in Runtime. The AML:

- Displays alarms and their causes in an unfiltered or filtered list
- Enables localization of the cause of the alarm
- Enables acknowledgment of alarms
- Enables deletion of alarms.
- Enables printing and saving of alarms

Configure (on page 30) alarms by means of:

- Setting limits for variables
- With reaction matrices
- Properties of the alarms

License informationPart of the standard license of the Editor and Runtime.

2.1 Configuring alarms

Alarm administration is operated in Runtime using alarm message list screens and alarm message list filters as well as the alarm status line. The alarm status line is automatically created as a template.

EDITOR

To be able to use alarms in Runtime, the following must be carried out in the Editor:

- ► A screen of alarm message list type (on page 6) can be configured
- > Limit breaches of variables or reaction matrixes are defined

In addition you can:

- Configure alarms using filters (on page 47)
- Grouping (on page 34) alarms



▶ Adapt the screens of alarm message list type (on page 12) that are available in Runtime

RUNTIME

For the operation in the Runtime (on page 135) the following is used:

- ► AML screen switching (on page 109)
- ▶ AML filter screen switching (on page 111)
- The zenon alarm functions (on page 112)
- Using Alarm Message List screens (on page 151)
- Alarm status line (on page 138)

2.1.1 Creating an Alarm Message List screen

An Alarm Message List screen makes it possible to display and log current and past alarms. The display can be changed using a filter. Functions make it possible to export and print the displayed alarms.

CREATING AN ALARM MESSAGE LIST FILTER SCREEN

To create an Alarm Message List screen:

- 1. Select, in the toolbar or in the context menu of the screens node, the New Screen command
- 2. An standard empty screen is opened
- 3. Change the screen type in the detail view; to do this:
 - a) click on standard in the screen type column
 - b) Select Alarm Message List from the drop down list
- 4. Click in the screen.
- 5. Select the control elements menu item in the menu bar
- 6. Click on Add template in the drop-down list



- 7. The standard elements are inserted
- 8. Select additional elements as required and insert them into the desired place on the screen
- 9. Create a screen switch function (on page 109), in order to be able to call up the AML in Runtime

Filter Set filter	Filter				Stop/Continue
Filter profiles Profile selection If yp: COMBOBOX Header Header Alarm Message List	Save	Import	Export	*	Total Total numb Not acknowledged
Typ: SysListView32 ID: 10022					Number of
					Acknowledge Acknowledge page Acknowl, All
					Delete
< === Comment					Delete page
Comment field Two: EDIT Alarm function Show linked function Two: STADC	[Execute function	Open help		Print

The following elements are available:



Element	Description			
Add template	Opens the dialog for selecting a template for the screen type.			
	Templates are shipped together with zenon and can also be created by the user.			
	Templates add pre-defined control elements to pre-defined locations in the screen. Elements that are not necessary can also be removed individually once they have been created. Additional elements are selected from the drop-down list and placed in the screen. Elements can be moved on the screen and arranged individually.			
Alarm Message List	Display of the alarms. The appearance is configurable (on page 10). Columns are defined via the Column settings (on page 75) filter in screen switching or via properties Column settings AML in the project settings in group Alarm Message List.			
Display: Set filter	Display of the currently-selected filter conditions.			
Filter	Opens dialogs for filter selection.			
Acknowledge/delete	Groups of buttons for acknowledging and deleting alarms			
Acknowledge	Acknowledging alarm messages in Runtime.			
Acknowledge page	All alarms displayed on the current page are acknowledged.			
Acknowl. All	All alarms for the current filter criteria are acknowledged			
	Note for multi-user project: Alarms are only acknowledged for projects for which the user has authorizations. (for details on multi-user projects, see Distributed engineering chapter)			
Delete	Deletes alarm from the Alarm Message List in Runtime. Alarm must already be acknowledged.			
Delete page	Deletes all acknowledged alarms that are displayed on the current page.			
Delete all	Deletes all acknowledged alarms that correspond to the current filter criteria.			



Element	Description			
Stop/Continue	Switch for filling the list:			
	Stop: New elements are no longer added automatically.			
	Next: New elements are added automatically.			
	Attention: The font of the button can be changed in the editor but is not carried over to Runtime. You can configure changes to the font using Language switching.			
Close	Closes Alarm Message List			
Print	Prints filtered list.			
Print with dialog	Opens printer settings before printing.			
Display: Linked function	Displays the message allocated to the alarm message.			
Execute command	Executes the functions configured for the alarm in Runtime.			
	Note: With the Start program function, the variable name of the selected alarm can be transferred as a parameter for the program to be started using the key word @alarm.name.			
Open help	Calls up configured Help.			
Display	Status and elements of alarm administration.			
Total number	Time number of all alarms.			
Number of unacknowledged	Displays number of unacknowledged alarms.			
Info: Status of Alarm Message List	Display if Alarm Message List is active or not (Project property Alarm Message list active).			
Comment field	Input of free text (comment) by the user for the selected alarm. This text can be displayed in the list (Comment option in the Column settings of the Alarm Message List.)			
Navigation	Controls elements of the list.			
Line up	Scrolls one line up.			
Line down	Scrolls one line down.			
Column right	Scrolls one column to the right.			
Column left	Scrolls one column to the left.			
Page up	Scrolls one page up.			



Element	Description			
Page down	Scrolls one page down.			
Page right	Scrolls one page to the right.			
Page left	Scrolls one page to the left.			
Filter profiles	Filter settings that can be saved by the user in Runtime.			
Profile selection	Select profile from list.			
Save	Saves current setting as a profile.			
Delete	Deletes selected profile.			

🂡 Info

The current filter is displayed the in the **Show filter** control element.

For a:

- Text filter, the expression [Txt] is displayed
- Relative time filter is displayed as a print-out with the following scheme:
 [T, Rel:%dd,%dh,%dm;%ds]
 Example: [T,Rel:1d,0h,0m,0s] corresponds to a day.

Changing the appearance of the AML

The table view of the Alarm Message List can be adapted to individual requirements:

SCROLL BARS, HEADERS AND GRIDS

To define the size and appearance of scroll bars, the header or grids for the the report:

- 1. In project properties, select the Extended graphical settings property in the Representation group
- 2. Define the desired properties in the groups Scroll bars and Header and grid for the Alarm Message List element on the screen



💡 Info

If the Graphics file property is selected for the Display style property, then all elements for which no graphics file has been selected are shown with a color gradient. Transparent graphics cannot be used for control elements for lists.

SORTING IN RUNTIME

To mark the relevant column for sorting in Runtime and to determine the sorting sequence, configure the graphic element for the title line:

- 1. Select the Graphics files for the Display style property
- 2. link properties Sort ascending and Sort descending each with a graphics file
- 3. in the Runtime the selected graphic for the corresponding sorting order is displayed in the column which is relevant for the sorting
- 4. Click on the graphic in order to change the sorting order
- 5. Click on header in order to activate the column for sorting

OPERATE HEADER IN THE RUNTIME

You can enable users to operate the header in the Runtime. With this an individual adjustment of the display in the Runtime is possible:

- Move columns
- Change size
- Changing sorting.

To do this, navigate to Alarm Message list group in the settings and select, in the Header AML property, Operable headers. Alternatively, you can also switch the header to inoperable or invisible here.

These settings apply for all headers in the project.

💡 Info

You can prohibit the manipulation and/or the visibility of the header for each screen



Alarm Message List by deactivating the property Show header or Make header editable for the tabular view.

PREVIEW

By activating the Extended graphical settings property in the Editor, the header and scroll bars can be previewed. This way, details such as color fill effects, light effects or grids can be configured more easily.

Attention: As the size of the scroll bars equals their size in the Runtime, the total size of the list in the Editor can vary from the size in the Runtime. This is also true for the size of the header and the font of the header.

2.1.2 Creating an Alarm Message List filter screen

It is possible to adjust filter settings for the Alarm Message List in Runtime with the help of the Alarm Message List Filter screen. Only the filter elements that are actually required are configured and provided to the user The appearance can also be freely defined and thus adapted to different end devices. All filter settings that are available in the filter (on page 47) for the function to switch the screen to the Chronological Event List screen (on page 109) can be configured.

Therefore:

- > Only the filter elements that are actually required are configured and provided to the user
- The user only has these filters displayed and has an overview
- The appearance can be freely defined and can, for example, ensure ease of use by means of a touch screen.

For details of use in Runtime, see Using the Alarm Message List Filter (on page 151) chapter.

For the definition of filter criteria, see Filter Alarm Message List Filter (on page 83) chapter.

Attention

Screens of type Alarm Message List Filter, Chronological Event List Filter and Time Filter must be engineered with an own frame. If they use the same frame as other screens, all screens based on this frame are closed when the screen is closed.



CREATING AN ALARM MESSAGE LIST FILTER SCREEN

To create an Alarm Message List filter screen:

- 1. Select, in the toolbar or in the context menu of the screens node, the New Screen command
- 2. An standard empty screen is opened
- 3. Change the screen type in the detail view; to do this:
 - a) click on standard in the screen type column
 - b) Select Alarm Message List filter from the drop-down list
- Select your own template (AML filter cannot be based on the same template as other screens)
- 5. Click in the screen.
- 6. Select the control elements menu item in the menu bar
- 7. Click on Add template in the drop-down list
- 8. the dialog for selecting a template is opened
- 9. select the desired template
- 10. Select additional elements as required and insert them into the desired place on the screen
- 11. Name the screen according to the selected filter To do this:
 - a) Click on the screen name in the detail view in the name column
 - b) Select a suitable pre-defined name from the drop-down list it give it a name of your own



/ariable filter		Tim	e filter						
Variable name	Only not acknowledged alarms							urrent time	
Variable name			Filter type Combobox: Type	of time filter				09:44:58 27.02	2012
Vanable name	Only current alarms		ve: COMBOBO				L	00.44.00 21.02	2012
Identification	Only cleared alarms		Brot0000						
dentification	Comment required					Hour	Minute	Second	
Case sensitive	Origin of the data		Combobox: F	Combobox: F	Combobox: F	Combobox: F	Combobox: F	Combobox: F	Sp
	Ringbuffer		IDvo: COMBO	Typ: COMBO	Typ: COMBO	Typ: COMBO D: 10004	Typ: COMBOI D: 10005	Typ: COMBO D: 10006	
	Historic data		ID: 10003 Until	D. 10002	D. 10001	10. 10004	D. 10005	D. 10000	
Show list without refresh	Max. number: Input field		Year	Month	Day	Hour	Minute	Second	
		11		Combobox: U					Sp
Fext filter		1 I P		Typ: COMBO D: 10008		Typ: COMBO D: 10010	Typ: COMBO D: 10011	Typ: COMBO D: 10012	-
			D: 10009	D: 10008	JD: 10007	D: 10010	0:10011	U: 10012	
No text filter		Alar	m/event groups	classes, alarm	areas				
Search for (separate words by Spa	ce)		arm/event group		Alarm/event c		Alarm an		
Input field: Search text			arm/event group		Alarm/event c		Alarm an		
Case sensitive			p: LISTBOX	15	Typ: LISTBO)		Typ: LIST		
Words do not need to be in the	text completely	Ď	10074		ID: 10075		D: 1008	7	
At least one word must be in th									
All words must be in the text									
Filter string must exactly be in	the text								
		' LL							
		Min	imum time activ	9					
		Da	/	Second	Minut		Hour	Milliseco	
		M	inimum time ala	Minimum tin	ne ala Minim	um time ala	Minimum time	ala Minimun	n time ala
			ОК		Accept	Ci	ancel	Refre	sh

12. Create a screen switch function (on page 109) in order to be able to call up the screen in Runtime

ELEMENTS

The Alarm Message filter screen can contain the following control and display elements.



Element	Description
Add template	Opens the dialog for selecting a template for the screen type.
	Templates are shipped together with zenon and can also be created by the user.
	Templates add pre-defined control elements to pre- defined locations in the screen. Elements that are not necessary can also be removed individually once they have been created. Additional elements are selected from the drop-down list and dragged onto the screen. Elements can be moved on the screen and arranged individually.
General filters	Drop-down list of different general filters (on page 87).
Insert all elements: General filters	Inserts all elements from the area of general filters into pre-defined places. Elements can be arranged individually.
Insert all elements: General filter (Touch)	Inserts all elements from the area of general filters into pre-defined places. Elements can be arranged individually. The elements were optimized for touch operation.
Variable filter	Alarms of which variables are displayed:
Variable name	Filter according to names of variables.
Identification	Filter according to identification of variables.
Case sensitive	Note capitalization when filtering the variables.
Type of alarms	Which alarms are displayed:
 Only not acknowledged alarms 	Only unacknowledged
Only cleared alarms	Only historical
Only current alarms	Only current
Comment required	Alarms that require a comment when acknowledged
 Minimum time alarms haves been current - days 	Only alarms that have been current for at least the given number of days.



•	Minimum time alarms haves been current - hours	Only alarms that have been current for at least the given number of hours.
•	Minimum time alarms haves been current - minutes	Only alarms that have been current for at least the given number of minutes.
•	Minimum time alarms haves been current - seconds	Only alarms that have been current for at least the given number of seconds.
•	Minimum time alarms haves been current - milliseconds	Only alarms that have been current for at least the given number of milliseconds.



Type of alarms (Touch)	Elements optimized for touch operation for the display of alarm type, along the lines of the Alarm type menu.
	 Only not acknowledged alarms
	 Only cleared alarms
	 Only current alarms
	Comment required
	 Minimum time active alarms -
	Button: Days (up)
	 Minimum time active alarms -
	Touch box: Days
	Minimum time active alarms -
	Button: Days (down)
	 Minimum time active alarms -
	Button: Hours (up)
	 Minimum time active alarms -
	Touch box: hours
	Minimum time active alarms -
	Button: Hours (down)
	Minimum time active alarms -
	Button: Minutes (up)
	Minimum time active alarms -
	Touch box: min
	Minimum time active alarms -
	Button: Minutes (down)
	Minimum time active alarms -
	Button: Seconds (up)
	Minimum time active alarms -
	Touch box: seconds
	Minimum time active alarms -



	Button: Seconds (down)
	 Minimum time active alarms -
	Button: Milliseconds (up)
	Minimum time active alarms -
	Touch box: Milliseconds
	 Minimum time active alarms -
	Button: Milliseconds (down)
Origin of the data	Where does the data come from:
▶ Ringbuffer	From the ring buffer.
 Historic data 	From an archive.
Text: Max. number:	Text for Maximum number input field
Input field: Max. number:	Input of the maximum alarms to be displayed when historical alarms are displayed.
	0: displays all
Runtime settings	
Show list without refresh	Switches the AML in stopped state. New alarms are not added.
Alarm/event groups/alarm/event classes/alarm areas	List field for grouped display (on page 34):
Alarm/event groups	Alarm/event groups
Alarm/event classes	Alarm/event classes
Alarm areas	Alarm areas



Time filter	Selection of different time filters (on page 90).
Insert all elements	Opens drop-down list to select pre-defined elements for certain time periods.
Absolute period of time: classic display	Elements for the absolute time period in classic display.
Absolute period of time: compact display	Elements for the absolute time period in compact display.
Relative period of time	Elements for the relative time period.
Starting at HH:MM:SS	Elements for a time period from a defined time.
Starting on day at HH:MM:SS	Elements for a time period from a defined day at a defined time.
Starting on day, month at HH:MM:SS	Elements for a time period from a defined day in a defined month at a defined time.
Time period: 1 or 2 weeks	Elements for a time period over one or two weeks.
Time period: one day	Elements for a time period of one day.
Time period: one month	Elements for a time period of one month.
Time period: one year	Elements for a time period of one year.
Time period: 15/30/60 minutes	Elements for a time period of 15, 30 or 60 minutes.
Insert all elements (Touch)	Opens the drop-down list to select pre-defined elements for certain time periods, which have been optimized for touch operation. Like Insert all elements , the following are available:
	 Absolute period of time: classic display Relative period of time
	 Starting at HH:MM:SS
	Starting on day at HH:MM:SS
	 Starting on day, month at HH:MM:SS
	Time period: 1 or 2 weeks
	 Time period: one day
	 Time period: one month



Time period: one year
Time period: 15/30/60 minutes



Labeling: Time filter type	Labeling for time filter type.	
Combobox: Time filter type	Combobox: Time filter type	
Display: Time filter type	Field for time filter type display.	
Time filter options	Buttons that show or hide certain elements in Runtime:	
	No filter	
	Absolute time filter	
	Relative time filter	
	Starting on day, month at HH:MM:SS	
	Starting on day at HH:MM:SS	
	Time period 1 week	
	Time period 2 weeks	
	Time period 1 day	
	Time period 1 month	
	Time period 1 year	
	Time period 15 minutes	
	Time period 30 minutes	
	Time period 60 minutes	
Time from	Fields and labeling for stating "from" time.	
	Labeling: From year	
	 Combo box: From year 	
	Labeling: From month	
	Combo box: From month	
	Labeling: From day	
	Combo box: From day	
	Labeling: From hour	
	Combo box: From hour	
	Labeling: From minute	



Combo box: From minute
Labeling: From second
Combo box: From second
 Spin control From



Time to	Fields and labeling for stating "to" time.	
	 Combo box: Until year 	
	Labeling: Until month	
	Combo box: Until month	
	Labeling: Until day	
	Combo box: Until day	
	Labeling: Until hour	
	Combo box: Until hour	
	Labeling: Until minute	
	Combo box: Until minute	
	Labeling: Until second	
	Combo box: Until second	
	Spin control Until	
Time from (Touch)	Fields and labeling for stating "from" time, optimized for touch operation.	
	Labeling: From year	
	Combo box: From year	
	Labeling: From month	
	Combo box: From month	
	Labeling: From day	
	Combo box: From day	
	Labeling: From hour	
	Combo box: From hour	
	Labeling: From minute	
	Combo box: From minute	
	Labeling: From second	
L		



Combo box: From second
Spin control From



Time to (Touch)	Fields and labeling for stating "to" time, optimized for touch operation.
	Labeling: Until year
	Combo box: Until year
	Labeling: Until month
	Combo box: Until month
	Labeling: Until day
	Combo box: Until day
	Labeling: Until hour
	Combo box: Until hour
	Labeling: Until minute
	Combo box: Until minute
	Labeling: Until second
	Combo box: Until second
	Spin control Until
Absolute time filter	Fields and labeling for stating absolute time filter.
	Labeling: From
	Calendar display: From date
	Date display: From date
	Time display: From time
	Labeling: Until
	Calendar display: Until date
	Date display: Until date
	Time display: To time
Time period	Fields and labeling for stating time periods.
	Labeling: From year
	Combo box: From year



Labeling: From month
Combo box: From month
Labeling: From day
Combo box: From day
Label: Start time
Combo box: Start time
Labeling: Week
Combo box: Week



Time period (Touch)	 Fields and labeling for stating "from" time, optimized for touch operation. Labeling: From year Button: From year (up) Touchbox: From year Button: From year (down) Labeling: From month Button: From month (up) Touchbox: From month Button: From month (down) Labeling: From day Button: From day (up) Touchbox: From day (up) Touchbox: From day (down) Labeling: Start time Button: Start time (up) Touchbox: Start time (down) Labeling: Week Button: Week (up) Touchbox: Week Button: Week (down) 	
Text filter	Drop-down list of different text filters.	
Insert all elements: Text filter	Inserts all elements for text filters.	
No text filter	Radio button to deselect text filter.	



Radio button to activate the search	
Labeling for search field.	
Field for input of search term.	
Search options	
Capitalization must be noted.	
Fragments can also be searched for.	
At least one search term from several must be in the result.	
All search terms must be included in the result.	
Exact text from the input field must be contained in the result.	
Accept inputs and close screen.	
Reject inputs and close screen.	
Accept inputs and leave screen open for further inputs.	
Refresh screen.	



FILTER SCREENS

Filter screens make it possible to transfer a preset filter from one screen to another. The filter of the source screen is set using the target screen. The screens can also be of a different screen type.

Attention

In order for the time to be taken from the screen to be called up in Runtime, the following time range must be selected in the Editor for the screen switching function for the Alarm Message List or the Chronological Event List in the time filter: Set filter at time filter type

CALL DEFINITION

The following requirements must be met for the set filters to be used:

- 1. Set filter for time filter type is selected as a time period for the time filter.
- The screen (Alarm Message List Filter, Chronological Event List filter Or Time Filter screens) are activated using a button or a combined element. Only in this way can the relationship between filter screen and source screen be maintained.
- 3. The source screen and filter screen must be configured on different frames or monitors. The filter for the filter screen can only be updated if the source screen is open. This is only possible if both screens do not use the same frame or the same monitor.
- 4. The screen to be called up must be compatible with the filter screen to be called up (see table).



Source screen	AML filter	CEL filter	Time filter
Archive revision	Т	Т	Т
Extended trend	Т	Т	Т
Time filter	Т	Т	х
Alarm Message List Filter	Х	С	Т
Chronological Event List Filter	С	X	Т
Alarm Message List	Х	С	Т
Chronologic event list	С	Х	Т

Key:

- C: Common settings are updated.
- T: Time settings are updated.
- X: All settings are updated.



No filtering

The filter screen is not filtered, but opened with the configured values, if:

- One of the conditions 1 to 3 is not met or
- The Screen to call up setting is not activated for the Screen switching function or
- > The screen is not called up via a screen element

In this case, the Accept, Close and Update buttons are grayed out in Runtime and have no function.

2.1.3 Defining alarms

Define alarms using:



- Limit values and statuses with variables
- Reaction matrixes

ALARMING USING VARIABLES

Define the limits for variables (see Variables manual, Limits chapter). If these are breached in Runtime, an alarm is generated and displayed in the alarm status line (on page 138). You configure further properties for alarm configuration with:

- Variable properties of the group Limits and the subgroups for each limit value contained therein:
 - In Alarm Message List: The alarm is incorporated into the AML. When it is there as displayed, control it in Runtime using the alarm message list (on page 140) or an alarm message list filter (on page 151).
 - To acknowledge: The alarm must be acknowledged before it is removed from the ring buffer (on page 32).
 - To delete: the alarm must be deleted manually before it is removed from the ring buffer (on page 32).
 - Print: Prints alarm to defined printer. Either the CEL or the AML is printed. You define which of the two lists is printed in project properties under Printing for.
 - Alarm/event group: allocation of an alarm/event group (on page 35).
 - Alarm/event class: allocation of an alarm/event class (on page 38).
- Variable properties of the group Alarm handling:
 - Alarm area: allocation of an alarm area (on page 41).
 - Acknowledgement variable: Sets the value 0 or 1 for the variables defined here when an alarm is acknowledged.
 - Acknowledgement value: value of the variable defined in Acknowledgement variable.
 - Save in IPA database: Alarm is available in the Industrial Performance Analyzer for evaluation.
- Project properties of the group AML and CEL:
 - Selection with border: selected lines are emphasized by a frame in Runtime.
 - Same comments: comments that are entered in Runtime for an alarm are also accepted in the CEL.
 - Printing active: activates online printing.



- Printing for: defines if AML or CEL is printed online.
- Project properties of the group Alarm Message list

There are many properties to configure alarms available here. Above all:

- AML activation
- Data storage AML
- Signalization of alarm states
- Activation of alarm status line

You can find details of the individual settings in the embedded help pages.

ALARMING VIA REACTION MATRIXES

You use a reaction matrix to evaluate limit states and status bits (see Variables manual, Reaction matrixes). Breaches of the established rules lead to an alarm. As with variables, you can also define the action to be carried out when an alarm is raised with reaction matrixes. To do this, activate the corresponding properties in the configuration dialog of the reaction matrixes.

2.1.4 Alarm handling

Alarms are saved in a ring buffer (alarm.bin) and in an alarm file (*.aml) in the Runtime folder as soon as they occur.

RINGBUFFER

The ring buffer includes all active alarms. At this the following things are managed:

- ▶ Time received in millisecond as unique signature
- additional information such as cause, value, etc.
- ► Time cleared
- Time acknowledged

When acknowledging alarms, all alarms of a variable with the same limit violation are deleted at the same time from the ring buffer.

As soon as the alarm is acknowledged, it is deleted from the ring buffer. Exception: If property To delete is set, the alarm must be deleted by the user decidedly.



SIZE OF THE RINGBUFFER

The size of the ring buffer must be set to an appropriated size in the project properties via property Size of the ringbuffer.

Recommended: At least number of variables for which alarms can occur.

The ring buffer is automatically saved as file alarm.bin when the Runtime is closed. If the Runtime is closed by an unexpected event such as a power outage, data loss occurs. To prevent this the ring buffer can be saved manually via property Save ringbuffer on change at every new entry or via function Save AML and CEL ring buffer (on page 126).

Attention: In the Runtime the ring buffer is handled dynamically in the memory. Via the defined number of alarms, even alarms which do not have a cleared time stamp can be displayed. Thus alarms are displayed which exceed the size of the ring buffer.

Example

- Size of the ring buffer: 100 entries
- Active alarms in the Runtime without cleared time stamp: 120
- Display in the AML in the Runtime: 120

ALARM FILE

All alarms are written in an alarm file (*.aml) at the same time as in the ring buffer. This file is created for every calendar day automatically and is managed via property Save AML data. The name of the alarm file is put together by the letter A, followed by the date in form JJMMDD and the suffix .aml; e.g. A100623.aml. These files are created automatically for every day and must be evacuated or deleted by the user if the storage space is limited. *.aml files are saved in the ...\Projektordner\Computername\Projektname folder.

SYNCHRONIZING RING BUFFER AND ALARM FILE

Ring buffer and alarm file are synchronized. This synchronization ensues from the ring buffer to the alarm file. All changes such as acknowledging are only carried out in the ring buffer and are then synchronized with the alarm file. Thus for example all unacknowledged alarms can be displayed in the alarm file and the acknowledge can be induced. The action however is taking place in the ring buffer.

SAVING PERIODS

The alarm file *.aml is saved each time a new entry is made.



The ring buffer (*.bin) is saved:

- when the Runtime is closed
- ► after every new entry if property Save ringbuffer on change is active
- ▶ when function Save AML and CEL memory buffer is carried out

Note: If option Save ringbuffer on change is deactivated, it is possible that the entries in the AML and in the ring buffer do not match after a power outage.

Attention

If the ring buffer overflows because it is too small, unacknowledged entries remain in the alarm file. They are displayed during filtering but they cannot be acknowledged anymore. The attempt to acknowledge them can trigger the acknowledgment on the ring buffer if the alarms concern the same variable and the same limit violation.

2.1.5 Grouping of alarms

Alarms can be grouped and prioritized by means of:

- Alarm/event groups (on page 35): group alarms (or events) together logically
- Alarm/event classes (on page 38): serve to prioritize alarms (or events) and are used to colorcode alarms in the AML and by events in the CEL
- Alarm areas (on page 41): Enable detailed evaluation of alarm/event classes by means of a combined element

Each group or class can be assigned a name, a number, a color, a function, a status variable, a graphic and an equipment group.

Alarms can be exported and imported via XML using the context menu.

💡 Info

A maximum of 65536 alarm/event classes and 65536 alarm/event groups can be created.



PROJECT MANAGER ALARM CONTEXT MENU

Menu item	Action
Export XML all	Exports all entries as an XML file.
Import XML	Imports entries from an XML file.
Help	Opens online help.

💡 Info

Use clear, different IDs in the global project, the integration project and subprojects for alarm/event groups, class and alarm areas. You avoid clashes this way. These can lead to incorrect displays.

Alarm/event groups

Alarm/event groups combine related messages.

CREATING ALARM/EVENT GROUPS

To create a new alarm/event group:

- 1. In the Project Manager, right click on the Alarm/Event Groups subnode
- 2. Select the command: New alarm/event group

(alternatively select the corresponding symbol in the toolbar (on page 37) or press on the Ins button)

Each group can be allocated additional information via its properties:



Parameter	Description
Name	Name of alarm/event group.
	Is displayed in the filter condition of AML and CEL.
No.	Number of the alarm/event group is automatically given by zenon.
Color	Color of alarm/event group.
	A click on the button opens the palette for color selection
Description	Name of alarm/event group.
Status variable	Bit variable which which the zenon Runtime indicates whether the group is active or whether the alarms of this group are ignored at the moment.
	Activation/deactivation is carried out via the Alarm/event group connection active/inactive (on page 113) function. The status of this group is logged in the Chronologic Event List (CEL).
	Clicking on the button opens the dialog for variable selection.
Function	Function that is to be executed if an alarm of this group is activated. Click on the button to open the dialog to select the function.
Graphics file	Selection of a graphic that represents the alarm/event group in the AML.
	To display the graphic in the AML, select in the AML filter, in the column settings (on page 75) tab for the Alarm/event group symbol the Graphics file display type.
	Note: the column height in the AML depends on the selected font. The selected graphics are also scaled and adapted to the column height.
Equipment groups	Links equipment model to the alarm/event group.
970062	Define the membership of an equipment group. Click on the button to open the dialog to select the equipment group.

DELETING ALARM/EVENT GROUPS

To delete an alarm/event group:

1. Select the alarm/event group



- 2. Select Delete in the context menu or in the tool bar
- 3. confirm this when requested to do so

Note: All linked variables lose their group assignment when deleted.

Context menus and alarm/event-groups toolbar

PROJECT MANAGER CONTEXT MENU

Menu item	Action
New alarm/event group	Creates a new alarm/event group.
Editor profile	Opens the drop-down list which includes pre-defined Editor profiles.
Help	Opens the online help.

DETAIL VIEW OF CONTEXT MENU AND TOOLBAR

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Menu item	Action	
New alarm/event group	Inserts a new alarm/event group into the list.	
Сору	Copies selected entries to the clipboard.	
Paste	Pastes the content from the clipboard. If an entry with the same name already exists, the content is pasted as "Copy of".	
Delete	Deletes selected entries.	
Edit selected cell	Opens the selected cell for editing. The binocular symbol in the header shows which cell has been selected in a highlighted line.	
Replace text in selected column	Opens the dialog for searching and replacing texts.	
Properties	Opens the Properties window for the selected entry.	
Remove all filters	Removes all filter settings.	
Help	Opens the online help.	

Alarm/event classes

Alarm/event classes serve the following purpose:

- ► To prioritize alarms for the screen alarming
- To determine the alarm color in the alarm message list
- > As a filter criterion in the alarm list and the Chronological Event List
- To trigger acoustic alarms, for example

CREATING ALARM/EVENT CLASSES

To create a new alarm/event class:

- 1. In Project Manager, right click on the Alarm/Event classes Subnode
- 2. Select the command: New alarm/event class

(alternatively select the corresponding symbol in the toolbar (on page 37) or press on the Ins button)



Each can can be allocated additional information via the properties:

Parameter	Description	
Name	Name of alarm/event class.	
	Is displayed in the filter condition of AML and CEL.	
No.	Number of the alarm/event class is automatically given by zenon.	
Color	Color of the alarm/event class can be used for labeling in the AML. A click on the button opens the color palette.	
	Note: Color is used for long description and status text in the AML and screen alarming	
Description	Description of alarm/event class.	
Status variable	Bit variable which which the zenon Runtime indicates whether the class is active or whether the alarms of this class are ignored at the moment.	
	Activation/deactivation is carried out via the Alarm/event group connection active/inactive (on page 113) function. The status of this group is logged in the Chronologic Event List (CEL).	
	Clicking on the button opens the dialog for variable selection.	
Function	Function that is to be executed if an alarm of this class is activated.	
	Click on the button to open the dialog to select the function.	
Graphics file	Selection of graphics that represent the alarm/event class in the AML.	
	To display the graphic in the AML, select in the AML filter, in the column settings (on page 75) tab for the Alarm/event class symbol the Graphics file display type.	
	Note: In the AML, the column height is aligned to the selected font; for this reason, the graphics selected are scaled if necessary and adjusted to suit the column height.	
Equipment	Links equipment model to the alarm/event class.	
groups	Click on the button to open the dialog to select the equipment group.	



DELETING ALARM/EVENT CLASSES

To delete an alarm/event class:

- 1. Select the alarm/event class
- 2. Select **Delete** in the context menu or in the tool bar
- 3. confirm this when requested to do so

Note: All linked variables lose their class assignment when deleted.

Alarm/event classes context menus and alarm/event-groups toolbar

PROJECT MANAGER CONTEXT MENU

Menu item	Action
New alarm/event class	Creates a new alarm/event class.
Editor profile	Opens the drop-down list which includes pre-defined Editor profiles.
Help	Opens the online help.

DETAIL VIEW OF CONTEXT MENU AND TOOLBAR

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Menu item	Action	
New alarm/event class	Inserts a new alarm/event class into the list.	
Сору	Copies selected entries to the clipboard.	
Paste	Pastes the content from the clipboard. If an entry with the same name already exists, the content is pasted as "Copy of".	
Delete	Deletes selected entries.	
Edit selected cell	Opens the selected cell for editing. The binocular symbol in the header shows which cell has been selected in a highlighted line.	
Replace text in selected column	Opens the dialog for searching and replacing texts.	
Properties	Opens the Properties window for the selected entry.	
Remove all filters	Removes all filter settings.	
Help	Opens the online help.	

Alarm areas

Alarm areas make flexible alarming possible using status variables. These can be evaluated using a combined element, for example.

Alarm areas are broken down into area entries. The number of possible area entries corresponds to the number of existing alarm/event classes.

CREATING ALARM AREAS

To create a new alarm area:

- 1. In Project Manager, right click on the Alarm areas Subnode
- 2. Select the command: New Alarm area

(alternatively select the corresponding symbol in the toolbar (on page 37) or press on the Ins button)

- 3. Select the desired variables in the General node
- 4. Create a new area entry in the Class linking node by clicking on {New class link}



(the number of possible area entries is limited to the number of existing alarm/event classes)

PROPERTIES FOR ALARM AREAS

Parameters	Description
General	
Name	Name of the alarm area.
	Is displayed in the filter condition of AML and CEL.
Status variable	Byte variable:
	First bit: Displays if the alarm area contains active alarms. Second bit: Displays if this alarm area contains unacknowledged alarms. For details, see "status variable bits". The button opens the dialog for variable selection.
Number of active alarms	Variables with a value that displays the number of active alarms in this alarm area. The button opens the dialog to select variables.
Number of unacknowledged alarms	Variable that contains the number of unacknowledged alarms in this alarm area as a numerical value.



No.	Number of configured area entries. Display only.	
Equipment groups	Links equipment model to the alarm area.	
	Define the membership of an equipment group. Click on the button to open the dialog to select the equipment group.	
Class linking	Collects area entries. A Class linking summarizes the status variable and number of active and unacknowledged alarms for an alarm/event class. Area entries are created via the {New class link} property.	
{New class link}	Creates a new area entry (on page 45).	
Alarm/event class	Alarm class for the area entry.	
{Delete class linking}	Deletes the area entry.	
Alarm/event class	Selection of alarm/event class for area entry from drop- down list. Alarm/event class must already have been created.	
Further entries are similar to general settings per area entry with:		
Status variable		
Number of active alarms		
 Number of unacknowledged alarms 		

STATUS VARIABLE BITS

Bit	Meaning
0	1 = Alarms are active
	0 = No alarms are active
1	1 = Unacknowledged alarms present
	0 = No unacknowledged alarms



ASSIGN ALARM RANGES VARIABLES, STRUCTURES OR DATA TYPES

Variables, structures and simple data types can be linked to up to four alarm areas.

To do this, the following are available in the Alarm handling group:

- ▶ Alarm area 1
- Alarm area 2
- ► Alarm area 3
- Alarm area 4

For each alarm area, the desired alarm area can be selected from drop-down list of the respective area of the desired alarm area and assigned to the object.

In Runtime, the columns Alarm area and Alarm area no. contain all linked alarm areas, separated by a comma (,). In the Message Control module, the Alarm area field contains all linked alarm areas, separated by a comma (,).

Alarm area context menus and tool bar

PROJECT MANAGER CONTEXT MENU

Menu item	Action
New Alarm area	Creates a new alarm area.
Editor profile	Opens the drop-down list which includes pre-defined Editor profiles.
Help	Opens the online help.

DETAIL VIEW OF CONTEXT MENU AND TOOLBAR

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Menu item	Action	
New Alarm area	Inserts a new alarm area into the list.	
Сору	Copies selected entries to the clipboard.	
Paste	Pastes the content from the clipboard. If an entry with the same name already exists, the content is pasted as "Copy of".	
Delete	Deletes selected entries.	
Edit selected cell	Opens the selected cell for editing. The binocular symbol in the header shows which cell has been selected in a highlighted line.	
Replace text in selected column	Opens the dialog for searching and replacing texts.	
Properties	Opens the Properties window for the selected entry.	
Remove all filters	Removes all filter settings.	
Help	Opens the online help.	

Configuring alarm areas

To create an alarm area:

- 1. Click on {New class link}
- 2. Select the desired Alarm/event class
- 3. Define for the area
 - Status variable
 - Variable for Number of active alarms and
 - Variable for Number of unacknowledged alarms

Note: Alarms are allocated to an alarm area in the Alarm area properties of the variables in the Alarm handling group.



EXAMPLE ALARM AREA

Class linking	Alarm/e vent class	Status variable	Number of active alarms	Number of unacknowledged alarms
1	Warning	Status_warn_1	Active_warn_1	Unackn_warn_1
	Disturbanc e	Status_error_1	Active_error_1	Unackn_error_1
2	Warning	Status_warn_2	Active_warn_2	Unackn_warn_2
	Disturbanc e	Status_error_2	Active_error_2	Unackn_error_2

EXAMPLE APPLICATION, ENERGY

An alarm area is a group of objects. These are summarized in one screen. For an energy supplier, each transformer station is represented by a screen. Transformer stations A to T are displayed in four sub-pages. All alarm areas are displayed in a joint overview.

- ► If a limit is breached in transformer station A, the button for transformer stations flashes in the overview screen.
- The button flashes on the group screen, which leads to the page with the transformers stations
 A, B, C, D and E.
- The button for transformer station A flashes in the detailed screen.

Alarms in global project and integration projects

Each project saves its own IDs for alarm classes, alarm groups and alarm areas. There can therefore be overlaps with global projects, integration projects and subprojects. If the same IDs are used in different projects, this can lead to entries being overwritten in the filter selection dialogs.

to avoid this, ensure that different IDs are used in all projects. To do this, create "dummy" groups/classes/areas, which you then delete again.



2.1.6 Alarm engineering with filters

You configure the display of alarms using the filter. You have several possibilities to do this:

- Define information that is displayed in Runtime in the Alarm Message List: With this, you define the information that is shown for an alarm. For details, see: Column setting for Alarm Message List (on page 47).
- Filter alarms for the Alarm Message List when switching and modify them in Runtime: With this, you pre-define filters, giving the user at the machine the possibility to define their own filters.

For details, see: Filter for Alarm Message List screen switching. (on page 53)

 Define fixed filters for Runtime: With this, you create filters that are adapted to actual use and hide the filter criteria that are not required.

For details, see: Filter Alarm Message List filters (on page 83).

Column setting for Alarm Message List

Parameter	Description
Columns	In the list field of this tab all available column types are displayed.
	You can change the sequence of column types by dragging & dropping in the list field:
	Click in the Column type column
	Move the individual entries as desired
	Alternatively, you can adjust the sequence with the $Move$
	selected entry up and Move selected entry down.
Checkbox:	Select which column types are displayed.
Description:	Free text entry for a description of the column.
	Change description: left-click on the corresponding area. Enter the desired value in the editing field.



	Note: for column descriptions, zenon language switching is available.
Column width:	 Defines the width of the column in characters. Change column width: left-click on the corresponding area. Enter the desired value in the editing field. 1 Width is calculated in Runtime using average character width Note: For compatibility reasons, the columns with widths that could not be changed in earlier zenon versions (date and time), have the value -1.
Display:	 For column types Alarm/event class symbol Alarm/event group symbol Alarm status Actual form of display can be selected in Runtime. Select the desired form from the drop-down list.



Move selected entry up	Moves selected entry up one place.
Move selected entry down	Moves selected entry down one place.
Preview field	Displays the columns defined in the list field in the width displayed there. You can also adjust the column widths here by left clicking on the right end of a column, holding down the mouse button and moving the mouse to the left or right accordingly.
Table settings	
Sort descending	Sorts the entries in the list according to the Time received column in decreasing order. These settings apply for showing a screen.You can change the sorting order in Runtime by clicking on the column header. The sorting sequence currently being used is shown by an arrow on the column header.
Display grid	shows a grid when the list is displayed in Runtime.
Use alternating background colors	Uses line color 1 and line color 2 alternately as background colors for the list in Runtime.
▶ Row color 1	Color that is used as a background color in in the list Runtime for all uneven numbers (1, 3, 5 etc.), if you have activated Alternating Background Colors.
▶ Row color 2	Color that is used as a background color in in the list Runtime for all even numbers (2, 4, 6 etc.), if you have activated Alternating Background Colors .
Display in the time columns	
Time	Displays the time for a list entry in the following form: HH:MM:SS
Date	Displays the date for a list entry in the following form: TT:MM:YYYY
milliseconds	Expands the time entry by milliseconds.
	Note: Must be activated if milliseconds are to be provided in exports or print-outs.

Which pieces of information are displayed in the Alarm Message List in the Runtime, you can define in the column settings. You configure these for a screen switching function in the filter criteria or directly in the properties of the Alarm Message List in the project:



- 1. open the Alarm Message list node in the project properties
- 2. click on property Column settings AML
- 3. the dialog for the column setting (on page 75) is opened

Note: For calculating the column width the average character width of the selected font is used.

💡 Info

In project settings, you can set a default setting for the sequence and size of columns using the Column settings AML property or the Column settings CEL property. If you create a new screen switching function from an Alarm Message List screen or Chronological Event List screen, this setting is used as a default. The setting is stored in the project.ini file.

💡 Info

In project settings, you can set a default setting for the sequence and size of columns using the Column settings AML property or the Column settings CEL property. If you create a new screen switching function from an Alarm Message List screen or Chronological Event List screen, this setting is used as a default. The setting is stored in the project.ini file.

Parameter	Description
Columns	In the list field of this tab all available column types are displayed.
	You can change the sequence of column types by dragging & dropping in the list field:
	Click in the Column type column
	Move the individual entries as desired
	Alternatively, you can adjust the sequence with the Move selected entry up and Move selected entry down.
Checkbox:	Select which column types are displayed.



Description:	
Description:	Free text entry for a description of the column.
	Change description: left-click on the corresponding area. Enter
	the desired value in the editing field.
	Note: for column descriptions, zenon language switching is available.
Column width:	Defines the width of the column in characters.
	Change column width: left-click on the corresponding area.
	Enter the desired value in the editing field.
	-1 Width is calculated in Runtime using average character width
	New ways and a state of the sta
	Note: For compatibility reasons, the columns with widths that could not be changed in earlier zenon versions (date and time),
	have the value -1 .
Display:	For column types
	Alarm/event class symbol
	Alarm/event group symbol
	Alarm status
	Actual form of display can be selected in Runtime. Select the
	desired form from the drop-down list.



Move selected entry up	Moves selected entry up one place.
Move selected entry down	Moves selected entry down one place.
Preview field	Displays the columns defined in the list field in the width displayed there. You can also adjust the column widths here by left clicking on the right end of a column, holding down the mouse button and moving the mouse to the left or right accordingly.
Table settings	
Sort descending	Sorts the entries in the list according to the Time received column in decreasing order. These settings apply for showing a screen.You can change the sorting order in Runtime by clicking on the column header. The sorting sequence currently being used is shown by an arrow on the column header.
Display grid	shows a grid when the list is displayed in Runtime.
Use alternating background colors	Uses line color 1 and line color 2 alternately as background colors for the list in Runtime.
▶ Row color 1	Color that is used as a background color in in the list Runtime for all uneven numbers (1, 3, 5 etc.), if you have activated Alternating Background Colors.
▶ Row color 2	Color that is used as a background color in in the list Runtime for all even numbers (2, 4, 6 etc.), if you have activated Alternating Background Colors .
Display in the time columns	
Time	Displays the time for a list entry in the following form: HH:MM:SS
Date	Displays the date for a list entry in the following form: TT:MM:YYYY
milliseconds	Expands the time entry by milliseconds.
	Note: Must be activated if milliseconds are to be provided in exports or print-outs.

Hint: If you activate the automatic keyboard in Runtime, it is turned on when an editing field appears. You can also use this to configure the columns if you are using a computer without a keyboard.



Attention

The column width is given in characters and is dependent on the font used. If the column width is not a multiple of the character width of the used font, the actual column width can differ from the set column width. This can result in the text being cut of or an empty space being created.

Solution: Use proportional fonts, such as 'Courier New', for example.

Filter for Alarm Message List screen switching.

You define which alarms are to be displayed in Runtime using filters and which are to be hidden. Filters can be defined in the editor and - depending on the requirements in the Editor - in Runtime.

To tailor the filter selection to the requirements of the operator in Runtime, use an Alarm Message List filter (on page 83) screen instead of an Alarm Message List screen.

To configure screen switching for an Alarm Message List (on page 6) screen:

- 1. engineer a function screen switch to a screen of type Alarm Message List
- 2. the filter dialog is opened and offers several tabs with filter criteria:
 - General (on page 54)
 - Time (on page 58)
 - Column settings (on page 75)
 - Text (on page 79)
 - Status (on page 81)
 - Project (on page 82) (only available in the integration project of the multi-project administration.)
 - Equipment modeling (on page 82)

If linked variables or indexes are available, the following tabs can be displayed as an option.

- Replace links
- Replace indices



Filter × Allgemein Zeit Spalteneinstellungen Text Status Projekt Anlagenmodellierung OK Spatten * Werte sind editierbar Abbrechen Spaltentyp Beschreibung* Breite [Zeichen]* Anzeige* * Hife Alamzustand Alamzustand 4 Kreissymbol Zeit kommt Zeit geht Zeit kommt .1 Zeit kommt -1 Zeit quittiert -1 Zeit angestanden Zeit angestanden -1 Variablenname Variablenname 20 Kennung Kennung 20 Betriebsmittelkennung Betriebsmittelkennung 15 Wert Wert 6 Maßeinheit Maßeinheit 5 Variablenstatus 30 Text Variablenstatus 8 Benutzemame Benutzemame Benutzer vollständiger Name Benutzer vollständiger Name 15 Computername Computername 15 V Kommentar Kommentar 20 Alarmgruppe Nummer Alamgruppe Nummer 2 Alar nan inne Symbol Alamoninoe Symbol Kraissumhol Selektierten Eintrag nach oben verschieben Selektierten Eintrag nach unten verschieben A... Zeit kommt Zeit geht Zeit quittiert Variable Tabelleneinstellungen Anzeige in den Zeitspalten Uhrzeit Datum Milisekunden Absteigend sortieren Zeilenfarbe 1 Zeilenfarbe 2

For details see in chapter screens Sections Replace links of variables and functions and Linked symbols.

General

With the general filter, you define which alarms are shown and what access you have to the setting in Runtime. To do this, alarms are classified according to:

- ► Type
- Origin of the data
- Variables
- ► Time active
- Alarm/event groups, classes and alarm areas



The following properties are available:

eneral Time Column settings Text State Equ	uipment modeling	
Variable filter		ОК
Variable name	Identification	Cancel
	 ✓ 	
Case sensitive		Help
Type of alams	Origin of the data	
Only not acknowledged alarms	Ringbuffer	
Only cleared alarms	Historic data	
Only current alarms	Max. number:	
Comment required		
Alams must be current for		
Days Hours Min. Sec. ms		
	0 🌩	
Alam/event groups/classes, alarm areas Groups	Classes	
Alam/event groups/classes, alarm areas		
Alarm/event groups/classes, alarm areas Groups	Classes	
Alarm/event groups/classes, alarm areas Groups - All groups	Classes	
Alam/event groups/classes, alam areas Groups All groups All groups Alam areas	Classes	
Alam/event groups/classes, alam areas Groups All groups All groups Alam areas	Classes	
Alam/event groups/classes, alam areas Groups All groups All groups Alam areas	Classes	
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Alam/event groups/classes, alam areas Groups All groups Alam areas Alam areas Alam areas Runtime settings	Classes	
Alam/event groups/classes, alam areas Groups All groups Alam areas Alam areas Alam areas Runtime settings	Classes Al classes	



Parameter	Description
Variable filter	Limitation to alarms of certain variables
Variable name	Enter the name or part of the name of the variable you want to filter. Wild card * is possible.
	Note: Wild cards are only allowed as prefix or suffix, i.e. *xxx or xxx*
Identification	Enter the identification or part of the identification of the variables you want to filter. Wild card * is possible.
	Note: Wild cards are only allowed as prefix or suffix, i.e. *xxx or xxx*
Case sensitive	Active: Capitalization is recognized when filtering for variable name and/or identification.
Type of alarms	Type of alarm that is displayed.
Only not acknowledged alarms	Active: Only alarms that have not yet been acknowledged by the user are displayed.
Only cleared alarms	Active: Only alarms that have already passed, i.e. whose values no longer in the critical range, are displayed.
Only current alarms	Active: Only alarms that are still active, i.e. whose values are still in the critical range, are displayed.
Comment required	 Active: Only alarms are shown for which it is necessary to leave a comment (on page 145) are displayed.
Alarms must be current for	Use the spin control to define the minimum time that an alarm should be active in order for it to be displayed. Possible settings:
	▶ Days
	▶ Hours(hr.)
	Minutes (min.)
	Seconds (sec.)
	 Milliseconds (ms)
Origin of the data	Display of current or current and historical alarms.
Ringbuffer	Active: Only data from the ring buffer (on page 32) are



	displayed.
Historical data Maximum number	Active: Data from the ring buffer and historical data from the AML are displayed.
	The maximum number of the data which should be displayed includes the data from the ring buffer.
Alarm/event groups/classes and alarm areas	Selection of groups, classes and alarm area.
Alarm/event groups	From the existing alarm/event groups (on page 35) select the one from which alarms should be displayed.
Alarm/event classes	From the existing alarm/event classes (on page 38) select the one from which alarms should be displayed.
Alarm areas	From the existing alarm areas (on page 41) select the one from which alarms should be displayed.
Runtime settings	Behavior of the AML in Runtime
Show this dialog in the Runtime	Active: Before every call of the screen the filter dialog is opened. The filter settings can be modified.
	Note for time range filters:
	Show this dialog in the Runtimeactive:
	The last-concluded time period is always used.
	Show this dialog in the Runtimenot active:
	 Use last finished time rangeactive: The last-concluded time period is used
	 Use last finished time rangenot active: The current time period is used.
Show list without refresh	Active: As long as the list is displayed no new entries are added.
	(not available for Export AML (on page 120) function.)
In the Runtime replace dialog with screen	Definition of a screen that is to be switched in Runtime instead of the dialog if the Offer this dialog in Runtime option is active. Only screens of the type



AML Filter or Time filter will be offered.
Click the button and a dialog opens to select a screen.
If the linked screen is not found in Runtime, a search is made for corresponding screens with specific names.

Attention

Concerns zenon under Windows CE: CE systems on which the filter dialog should be displayed must have a screen resolution higher than 800*600 pixel for the dialog to be displayed completely.

Time

Time filters make it possible to limit the data to be displayed or exported. The time filters are very flexible to implement and can be pre-set in the editor or adjusted in Runtime.

Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.

The mechanisms described here are applicable for screen switching as well as export for:

- Alarm Message List (on page 4)
- Archive revision
- Chronologic event list
- Extended trend
- ▶ Filter screens (on page 90)
- Report Generator
- ► Report Viewer



Filter					×
General Time	Column settings	Text State	Equipment modeling		
Filter		I			ОК
 No time f 	ilter				Cancel
Absolute	filter				Help
Relative	filter				Пар
From					
Starting at	HH:MM:SS		-		
Time per	iod				
One day					
Charge					
relative					

► Function Export Archives.

Time filtering can be carried out in two ways:

- Define time period in the Editor (on page 60)
 Fixed time areas are used. A time period is given in the editor. It is only possible to filter
 according to this time period in Runtime. Other filters such as filtering according to variable
 name, alarm/event groups and alarm/event classes etc. can no longer be amended in Runtime.
- Time filter amendable in Runtime (on page 63)
 Pre-defined times are used. The time filter is defined in the Editor and can be changed in Runtime as desired.



💡 Info

If a screen that does not have a time filter is referenced, the time filters are deactivated.

For the setting Set filter for time filter type the option Display filter dialog in Runtime can be selected, but it is not available in runtime.

Specify time area in the Editor

With this method, you enter a fixed time period into the editor, which is applied when the function is carried out in Runtime. You can then only define the start time in Runtime, but no further filter settings.

For example: You set a 30 minute time filter. In Runtime, you can now only set when this 30 minute time period is to start. However, you cannot change the filter to a day filter.

Attention

When using this type of filter, you can also no longer amend all other filters in Runtime that are available in the General (on page 54) tab. It is still possible to filter for text, status and equipment.

To create the filter:

- 1. create a picture switch function.
- 2. The screen must have the Filter button to start the filter in Runtime

Hint: Activate the Offer this dialog in the Runtime option in the General tab in the filter dialog. This way you can amend the start time before the function is carried out. Do not have the filter displayed in Runtime when the function is turned on; this way the current time period is always used. If you have activated the Use last closed time period option, the previous time period is shown.

For example: You have set a 30 minute filter. It is 10.45 when the function is activated. If the Use last closed time period option is deactivated, the filter is set to the current time period 10:30:00 to 10:59:59. If the option is activated, the filter is set to the previous time period of 10:00:00 to 10:29:59.

- 3. select the desired filter:
 - Absolute filter
 - Relative filter



ieneral Tme Column settings Text State Equipment modeling Filter No time filter Absolute filter Relative filter From Stating at HH:MM:SS Time period One day O Charge relative Settings O Propose current date/time O Default Day(s) · Month · Year HH · MM · SS From I wanuary v 2013 v 0 0 v	Filter No time filter	ter inter	<u> </u>
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		1 • January • 2013 • 1 0 0 •	

4. Configure the selected time period in the specification section of the desired time range (see Absolute filter (on page 66), Relative Filter (on page 69) and Ab (on page 71) sections)



Parameters	Description
Filter	Selection of the filter.
No time filter	Active: No time filter is used.
	Not available for Extended Trend
Absolute filter	Active: A fixed period of time is entered in the editor. When the function is executed, the defined absolute time period is exactly used.
	In the settings section, the corresponding options can be shown and configured (on page 66) there.
	Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.
Relative period	Active: A relative time period is entered.
of time	In the settings section, the corresponding options can be shown and configured (on page 69) there.
	Attention: this filter is constantly updated.
From	Active: A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.
	Selection of the area mode from drop-down list:
	Starting at HH:MM:SS
	Starting on day at HH:MM:SS
	Starting on day, month at HH:MM:SS
	In the settings section, the corresponding options can be shown and configured (on page 71) there.
	Attention: The start point of this filter is not updated automatically. Only the existing times are used when shown. The end time point is not defined with this filter, it is carried over.
Time period	Active: A fixed time period is entered. Selection of the area mode from drop- down list:
	One day
	One week
	Two weeks



One month	
One Year	
15 minutes	
▶ 30 minutes	
▶ 60 minutes	
In the settings section, the corresponding options can be shown and configured (on page 73) there.	
Active: The dialog for lot selection is shown in Runtime.	
only available for Extended Trend, archive revision and reports.	
Active: Display always starts from zero point. Enables several lots to be compared directly.	
Only for ${\tt Extended}\ {\tt Trend}$ and only available if the Lot option is activated.	
Applies all changes on all tabs and closes the dialog.	
Discards all changes and closes the dialog.	
Opens the online help.	

Time filter can be amended in Runtime

With this method, you stipulate a time filter in the Editor. This can be amended in Runtime before execution. To create the filter:

- 1. create a picture switch function.
- 2. The screen must have Filter and Display filter buttons
- 3. select the desired filter:
 - Absolute filter
 - Relative filter
- 4. Select, in the specification section, the OptiOn Propose current date/time



Filter					×
General Time Colo	umn settings	Text	State	Equipment modeling	
Filter					ок
No time filter					Cancel
Absolute filter					Help
Relative filter					
© From					
Starting at HH:M	M:SS			·	
Time period					
One day				•	
Charge					
relative					
Settings					
Propose curren	t date/time				
O Default					

5. The filter dialog is opened in Runtime with the current date and time



Parameters	Description
Filter	Selection of the filter.
No time filter	Active: No time filter is used.
	Not available for Extended Trend
Absolute filter	Active: A fixed period of time is entered in the editor. When the function is executed, the defined absolute time period is exactly used.
	In the settings section, the corresponding options can be shown and configured (on page 66) there.
	Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.
Relative period	Active: A relative time period is entered.
of time	In the settings section, the corresponding options can be shown and configured (on page 69) there.
	Attention: this filter is constantly updated.
From	Active: A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.
	Selection of the area mode from drop-down list:
	Starting at HH:MM:SS
	Starting on day at HH:MM:SS
	Starting on day, month at HH:MM:SS
	In the settings section, the corresponding options can be shown and configured (on page 71) there.
	Attention: The start point of this filter is not updated automatically. Only the existing times are used when shown. The end time point is not defined with this filter, it is carried over.
Time period	Active: A fixed time period is entered. Selection of the area mode from drop- down list:
	One day
	One week
	Two weeks



One month	
One Year	
15 minutes	
30 minutes	
▶ 60 minutes	
In the settings section, the corresponding options can be shown and configured (on page 73) there.	
Active: The dialog for lot selection is shown in Runtime.	
only available for Extended Trend, archive revision and reports.	
Active: Display always starts from zero point. Enables several lots to be compared directly.	
Only for ${\tt Extended}\ {\tt Trend}$ and only available if the Lot option is activated.	
Applies all changes on all tabs and closes the dialog.	
Discards all changes and closes the dialog.	
Opens the online help.	

Absolute filter

You define a fixed time period with the absolute filter. When the function is executed, the defined absolute time period is exactly used. To set the filter:

- 1. Select, in the Filter section, the Absolute filter option
- 2. Configure the desired time in the settings section



General Text Time Filter No time filter Absolute filter Relative filter From Starting at HH:MM:SS Time period One day One day Charge relative Settings Propose current date/time Default Day(s) Month Year HH Month Year HH Month Year HH Month Year Hundi Image: Construction on the start on the sta	r	
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 Relative filter From Starting at HH:MM:SS ▼ Time period One day ▼ Charge relative Settings Propose current date/time Default Day(s) - Month - Year HH - MM - SS From I ▼ January ▼ 2013 ▼ 1 0 0 ▼ Until 	Absolute filter	Help
Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time @ Default Day(s) - Month - Year HH - MM - SS From I January V 2013 V 1 0 0 V Until	O Relative filter	
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Propose current date/time O Default Day(s) - Month - Year HH - MM - SS From I - January - 2013 - I 0 0 + Until	relative	
	Until	

Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.



Parameter	Description
Settings	Configuration of the time filter.
Propose current date/time	Active: Time filter is displayed in Runtime.
Default	Active: The time filter is prescribed in the Editor. Only the start time can still be configured in Runtime.
From	Start time of the filter. Selection of day, month, year, hour, minute and second
Until	End time of the filter. Selection of day, month, year, hour, minute and second

Example: If you want to see all alarms from January 1, 2011 to December 31, 2011, then you must enter the corresponding data at From and To.



Relative filter

A relative time period is entered.

Attention: This filter is updated constantly and continues to run.

Filter	×
Screens General Text Time	
Filter	ОК
No time filter	Cancel
O Absolute filter	Help
Relative filter	Thep
© From	
Starting at HH:MM:SS v	
◎ Time period	
One day 👻	
O Charge	
relative	
O efault Day(s) - Month - Year HH - MM - SS	



Parameter	Description
Settings	Configuration of the time filter.
Propose current date/time	Active: Time filter is displayed in Runtime.
Default	Active: The time filter is prescribed in the Editor. Only the start time can still be configured in Runtime. Selection of the relative time period in days, hours, minutes and seconds.

Example: You set up a relative time of 10 minutes and switch to an Alarm Message List Screen with this time filter at 12:00. Then you are shown the alarms from 11:50 to 12:00 when switching. If the Alarm Message List screen stays open, the filter is automatically updated. At 12:01, you see the alarms from 11:51-12:01 etc.



From

A time from which the filter is effective is defined.

Filter	×
Screens General Text Time	
Filter	ОК
No time filter	Cancel
Absolute filter	
© Relative filter	Help
From	
Starting on day, month at HH:MM:SS	
◯ Time period	
One day v	
) Charge	
relative	
Settings Day(s) - Month - Year HH - MM - SS	
1 v January v 1 0 0 🔺	



Parameter	Description
Settings	Configuration of the time filter.
[Date/Time]	Depending on the settings of the option, the time from which the filter is effective is configured here:
	hour - minute - second
	day - hour - minute - second
	days - hour - minute - second
	Attention! The start point of this filter is not updated automatically. Only the existing times are used when shown, even if the screen remains open and 23:00:00 is reached. The end time point is not defined with this filter, it is carried over.
<pre>hour - minute - second</pre>	A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.
	Example: You enter 23:00:00. If it is then 23:30 when executing the function, then it is filtered from 23:00:00 up to the current point in time. If it is 22:30 however, then filtering takes place from 23:00:00 on the previous day to the current point in time.
<pre>day - hour - minute - second</pre>	A day and time for the start of the filter are entered. If the time given has not been reached in the current month, the corresponding time from the previous month is used.
	Example: You enter day $5 - 23:00:00$. If it is the 10th of the month at 23:30, then filtering takes place from the 5th of the month from 23:00:00 to the current time point. If, however, it is the 4th of the month, then filtering takes place from the 5th of the previous month to the current time point.
 days - hour - minute second 	A month, day and time for the start of the filter are entered. If the time stated has not been reached in the current year, the corresponding time from the previous year is used.
	Example: You enter Month October, Day5-23:00:00. If it is October 10th at 23:30, then filtering takes place from October 5th from 23:00:00 to the current time point. If, however, it is only October 4th, then filtering takes place from the 5th of the previous year to the current time point.



Time period

A time period in which the filter is effective is defined.

Filter	×
Screens General Text Time	
Filter	ОК
No time filter	Cancel
O Absolute filter	Help
◎ Relative filter	Пер
© From	
Starting on day, month at HH:MM:SS v	
 Time period 	
One day 🔹	
Charge	
C relative	
Settings	
Modify time period	
Move time period to the future by	
HH - MM - SS	
Change period of time by	
Add time	
Deduct time	
use last finished time range	



Parameter	Description		
Settings	Configuration of the time filter.		
Modify time period	Allows amendments to cycles, postponements and extensions of time periods.		
	Active: Evaluation is carried out in accordance with the following rules:		
	 First, the Use last finished time period option is evaluated. 		
	► After this, Change time period by is used.		
	 Move time period to the future by is then applied. 		
	Inactive: No changes to the time period are made.		
	Attention: With version 7.10, filter actions on the basis of this function led to different results than those in the versions before.		
Move time period to the future by	Active: The time period defined in the filter is postponed to the future. Given in hours - minutes - seconds.		
	If a postponement that is the same or greater than the selected time period is set, a note to check the configuration is displayed.		
Change period of time by	Active: The time period defined in the filter is modified. Given in hours - minutes - seconds.		
	If a change and a postponement that are the same or greater than the selected time period is set, a note to check the configuration is displayed.		
Add time	Active: The time stated in Change time period by is added to the time defined in the Time range option.		
Deduct time	Active: The time stated in Change time period by is deducted from the time defined in the Time range option.		
Use last finished time period	Active: The last finished time period is used.		



Column settings

In this dialog you define which columns you want to display in what form, succession and sort order.

Note: All settings which you make in this tab are default settings for:

- Screen of type Alarm Message List
- Alarm Message List Screen
- Alarm status line
- Chronological Event List screen
- ► Screen Chronological Event List Filter

These default settings can be changed at the definition of each individual alarm function/CEL function.

🂡 Info

In project settings, you can set a default setting for the sequence and size of columns using the Column settings AML property or the Column settings CEL property. If you create a new screen switching function from an Alarm Message List screen or Chronological Event List screen, this setting is used as a default. The setting is stored in the project.ini file.



gemein	Zeit	Spalteneinstellungen	Text	Status	Projekt	Anlagenmodellierung			
Spalten									OK
			* Werte	sind editie	rbar				Abbreche
Spalte	ntyp	1	Beschreib	ung"		Breite [Zeichen]*	Anzeige*	*	Abbreche
V Ala	mzustar	nd /	Varmzust	and		4	Kreissymbol		Hife
V Ze	t kommt	1	Zeit komm	nt		-1			
V Ze	t geht		Zeit geht			-1			
Zei	t quittier	t 7	Zeit quitti	ert		-1			
Ze	t angest	anden 2	Zeit ange	standen		-1		=	
Va Va	iablenna	ame	/ariablen	name		20			
Ke	nnung	1	Kennung			20			
Bet	triebsmitt	telkennung l	Betriebsm	ittelkennu	ng	15			
V We	srt		Nert			6			
V Ma	Beinheit		Maßeinhe	eit		5			
V Te	d		Text			30			
Va	riablenstatus 8								
Be	nutzema	ime I	Benutzen	name		6			
V Be	nutzer v	ollständiger Name	Benutzer	voliständig	ger Name	15			
Co	mputern	ame (Computer	name		15			
🗸 Ko	mmentar		Comment	ar		20			
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	eigend s					Uhrzeit			
	er anzeig					Datum			
		de Hintergrundfarben ve		1		Milisekunden			
Zeile	nfarbe 1	Zelenfar	be 2						

Parameter	Description
Columns	In the list field of this tab all available column types are displayed.
	You can change the sequence of column types by dragging & dropping in the list field:
	Click in the Column type column
	Move the individual entries as desired
	Alternatively, you can adjust the sequence with the Move selected entry up and Move selected entry down.
Checkbox:	Select which column types are displayed.
Description:	Free text entry for a description of the column.
	Change description: left-click on the corresponding area. Enter the desired value in the editing field.
	Note: for column descriptions, zenon language switching is available.
Column width:	Defines the width of the column in characters.
	Change column width: left-click on the corresponding area.



	Enter the desired value in the editing field. -1 Width is calculated in Runtime using average character width
	Note: For compatibility reasons, the columns with widths that could not be changed in earlier zenon versions (date and time), have the value -1 .
Display:	For column types
	Alarm/event class symbol
	Alarm/event group symbol
	Alarm status
	Actual form of display can be selected in Runtime. Select the desired form from the drop-down list.
Move selected entry up	Moves selected entry up one place.
Move selected entry down	Moves selected entry down one place.
Preview field	Displays the columns defined in the list field in the width displayed there.
	You can also adjust the column widths here by left clicking on the right end of a column, holding down the mouse button and moving the mouse to the left or right accordingly.
Table settings	
Sort descending	Sorts the entries in the list according to the Time received column in decreasing order. These settings apply for showing a screen.You can change the sorting order in Runtime by clicking on the column header. The sorting sequence currently being used is shown by an arrow on the column header.
Display grid	shows a grid when the list is displayed in Runtime.
Use alternating background colors	Uses line color 1 and line color 2 alternately as background colors for the list in Runtime.
▶ Row color 1	Color that is used as a background color in in the list Runtime for all uneven numbers (1, 3, 5 etc.), if you have activated Alternating Background Colors.
▶ Row color 2	Color that is used as a background color in in the list Runtime for all even numbers (2, 4, 6 etc.), if you have activated Alternating Background Colors.



Display in the time columns	
Time	Displays the time for a list entry in the following form: HH:MM:SS
Date	Displays the date for a list entry in the following form: TT:MM:YYYY
milliseconds	Expands the time entry by milliseconds. Note: Must be activated if milliseconds are to be provided in exports or print-outs.

Hint: If you activate the automatic keyboard in Runtime, it is turned on when an editing field appears. You can also use this to configure the columns if you are using a computer without a keyboard.

Attention

The column width is given in characters and is dependent on the font used. If the column width is not a multiple of the character width of the used font, the actual column width can differ from the set column width. This can result in the text being cut of or an empty space being created.

Solution: Use proportional fonts, such as 'Courier New', for example.



Text

The text filter makes it possible to limit the display to messages that contain certain search terms.

neral Time Column settings Text Status Project Equipment modeling	OK
iker by	UK
No text filter	Cancel
Search for (separate words by Space)	Help
Dptions	
Case sensitive	
Words do not need to be in the text completely	
At least one word must be in the text	
 All words must be in the text 	
Filter string must exactly be in the text	



Parameters	Description
Filter according to	
No text filter	The text filter is not used.
Search for (words separated by	The text filter filter is used.
spaces)	Further options are activated.
Input field	Enter the corresponding words or character strings.
Options	
Note capitalization	Active: A distinction is made between upper case and lower case when filtering.
Words do not have to appear in the text in full	Active: Parts of words can also be taken into account during filtering.
At least one word must be present in the text	Active: At least one word of the search string has to be in the text.
All words must be present in the text	Active: All words must be present in the search string. In doing so, the sequence plays no role.
Filter text must appear in the text exactly	Active: The text must be exactly as defined in the search string.



Status

The status of the checkbox indicates if the status bit is to be evaluated.

Filter						×
General Time	Column settings Te	xt Status Equip	ment modeling			
						ОК
⊡ M1	M2	мз	► M4	■ M5	М6	Cancel
■ M7	• M8	NET_SEL	REVISION	PROGRESS	TIMEOUT	Help
INVALID	OFF		RM_TR		GI	
SPONT	T_CHG_A	N_UPDATE	BL_870	■ SB_870	■ NT_870	
OV_870	SE_870	T_INVAL	T_STD	CB_TRIP	CB_TR_I	

Status of checkbox	Description
Black dot	The status bit is not evaluated.
0	Only the entries where the status bit is set to false are displayed.
1	Only the entries where the status bit is set to $true$ are displayed.

Example

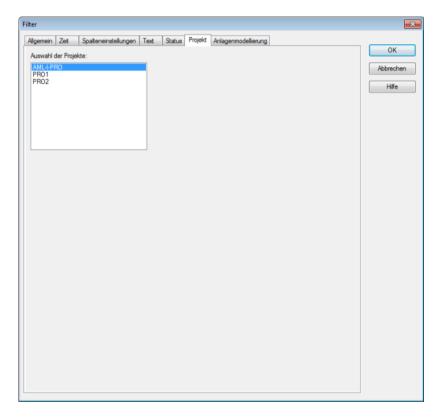
If the checkbox SPONT is set to 1, only the alarms are shown that are triggered by spontaneous values are displayed.

Hint: You can read details on status bits in the Status processing chapter.



Project

Selection of projects that are to be taken into account for the AML. The filter for selecting sub-projects is only available in the integration project of the multi-project administration.



the selection from the integration project and all sub-projects is carried out via multi-select by pressing and holding key Ctrl and mouse click on the desired projects.

Equipment modeling

In the filter all already existing equipment models are displayed. Via the context menu or via tool bar, you can create new models and groups.

To add groups to the filter:

- 1. select the desired element
- 2. click on button Add
- repeat the process until all necessary groups are available in the list (Multi-select is not possible)



To remove groups from the filter:

- Select the desired element (multiselect: Ctrl button or hold down the shift key and click on the desired element)
- 2. click the Delete button

Filter	×
General Time Column settings Text Status Equipment modeling	
	ОК
Equipment modeling	Cancel
- 🖾 1 Shell	Help
Paintwork Pre-treatment E	Нер
- 1/2 Phosphating	
EED Control	
📲 Seam from top	
Seam from bottom	
B-4 Filer	
- Filer	
Add Remove	
2 Paintwork. Pre-treatment. CED Cathodic electrodeposition	
2 Paintwork.Pre-treatment.Pre-cleaning	

Element	Description
Equipment model	provides models and groups for selection
Add	adds selected groups to the filter list
Remove	removes selected groups from the filter list

Filter for Alarm Message List screen switching filter.

To create an Alarm Message List filter (on page 12) screen:

- 1. Create a Screen switching function on an Alarm Message List filter Screen
- 2. the filter is displayed with all tabs:



- Screens (on page 85)
- General (on page 87)
- Text (on page 89)
- Time (on page 90)

er	
ilder Allgemein Text Zeit	
Filter wird aus folgendem Bild übernommen	ОК
Aufrufendes Bid	Abbrechen
Bildauswahi	Hife
Zu aktualisierende Bilder	
Bidauswahl	
Aktualisierung	
☑ Auf allen Monitoren aktualisieren	



Screens

On this tab, you can define the screens which are to be updated by the picture filter.

Filter	×
Screens General Text Time	
Filter is taken from the following screen	ОК
	Cancel
	Cancer
Screen selection	Help
Screens to be updated	
Screen selection	
Update	
· ☑ Update on all monitors	

The following settings are available:



Parameter	Description
Filter is taken from the following screen	
Calling screen	Active: The filter settings are take over from the screen from which the filter screen is called up. The screen button is grayed out. You cannot explicitly select a screen, because the filter is always updated from the calling screen with this setting. Note: Settings in the General, Text and Time tabs are locked.
Screen selection	Click on button opens the Screen selection dialog.
	Select the screen from which the filter - when clicking button Update during Runtime - should be read.
	Note: It therefore only makes sense to select a screen which can adopt or fill the screen filter.
	The screen selected is entered into the list of screens to be updated. If you delete it from the list, the next screen on the list is automatically entered here.
	Note: Not available if you have activated the Calling screen checkbox.
Screens to be updated	
Screen selection	Click the button to open dialog Screen selection of the filter screens. Select the desired screen.
Update	
Update on all monitors	Active: The screens from the list of the screens which must be updated are updated on all accessible monitors.



General

Variable filter		ОК
Variable name	Identification	Cancel
	• •	▼ Cancei
Case sensitive		Help
Type of alarms	Origin of the data	
Only not acknowledged alarms	Ringbuffer	
Only deared alarms	 Historic data Max. number: 	
Only current alarms		
	0	
Alarms must be current for		
Days Hours Min. Sec. ms		
Runtime settings		
Show list without refresh		
Alarm/event groups/classes, alarm areas	Change	
Alarm/event groups/classes, alarm areas Groups	Classes	
Alarm/event groups/classes, alarm areas	Classes - Al classes	
Alarm/event groups/classes, alarm areas Groups		_
Alarm/event groups/classes, alarm areas Groups		_
Alarm/event groups/classes, alarm areas Groups		-
Alarm/event groups/classes, alarm areas Groups		
Alarm/event groups/classes, alarm areas Groups		
Alarm/event groups/classes, alarm areas Groups in All groups		
Alarm/event groups/classes, alarm areas Groups All groups Alarm areas		
Alarm/event groups/classes, alarm areas Groups All groups Alarm areas		
Alarm/event groups/classes, alarm areas Groups All groups Alarm areas		
Alarm/event groups/classes, alarm areas Groups All groups Alarm areas		
Alarm/event groups/classes, alarm areas Groups All groups Alarm areas		



Parameter	Description
Variable filter	Limitation to alarms of certain variables
Variable name	Enter the name or part of the name of the variable you want to filter. Wild card * is possible.
	Note: Wild cards are only allowed as prefix or suffix, i.e. *xxx or xxx*
Identification	Enter the identification or part of the identification of the variables you want to filter. Wild card * is possible.
	Note: Wild cards are only allowed as prefix or suffix, i.e. *xxx or xxx*
Case sensitive	Active: Capitalization is recognized when filtering for variable name and/or identification.
Type of alarms	Type of alarm that is displayed.
Only not acknowledged alarms	Active: Only alarms that have not yet been acknowledged by the user are displayed.
Only cleared alarms	Active: Only alarms that have already passed, i.e. whose values no longer in the critical range, are displayed.
Only current alarms	Active: Only alarms that are still active, i.e. whose values are still in the critical range, are displayed.
Alarms must be current for	Use the spin control to define the minimum time that an alarm should be active in order for it to be displayed. Possible settings:
	▶ Days
	Hours(hr.)
	Minutes (min.)
	Seconds (Sec.)
	Milliseconds (ms)
Origin of the data	Display of current or current and historical alarms.
Ringbuffer	Active: Only data from the ring buffer (on page 32) are displayed.
Historical data	Active: Data from the ring buffer and historical data



Maximum number	from the AML are displayed.
	The maximum number of the data which should be displayed includes the data from the ring buffer.
Runtime settings	Behavior of the AML in Runtime
Show list without refresh	Active: As long as the list is displayed no new entries are added.
Alarm/event groups/classes and alarm areas	Selection of groups, classes and alarm area.
Alarm/event groups	From the existing alarm/event groups (on page 35) select the one from which alarms should be displayed.
Alarm/event classes	From the existing alarm/event classes (on page 38) select the one from which alarms should be displayed.
Alarm areas	From the existing alarm areas (on page 41) select the one from which alarms should be displayed.

Text

Filter	×
Bilder Allgemein Text Zeit	
Filtern nach	ОК
Kein Textfilter	Abbrechen
Suchen nach (Wörter getrennt durch Leerzeichen)	Hife
Optionen	
Groß-, Meinschreibung beachten	
Wörter müssen nicht vollständig im Text vorkommen	
Mindestens ein Wort muss im Text vorkommen	
Alle Wörter müssen im Text vorkommen	
 Filtertext muss exakt im Text vorkommen 	



Parameters	Description
Filter according to	
No text filter	The text filter is not used.
Search for (words separated by	The text filter filter is used.
spaces)	Further options are activated.
Input field	Enter the corresponding words or character strings.
Options	
Note capitalization	Active: A distinction is made between upper case and lower case when filtering.
Words do not have to appear in the text in full	Active: Parts of words can also be taken into account during filtering.
At least one word must be present in the text	Active: At least one word of the search string has to be in the text.
All words must be present in the text	Active: All words must be present in the search string. In doing so, the sequence plays no role.
Filter text must appear in the text exactly	Active: The text must be exactly as defined in the search string.

Time

On this tab, you define the time period that is to be used when the filter screen is opened.



Filter	×
Screens General Text Time	
Filter	ОК
No time filter	Cancel
O Absolute filter	Help
○ Relative filter	
© From	
Starting at HH:MM:SS v	
◎ Time period	
One day 🔹	
Charge	
relative	

The following settings are available:



Parameters	Description
Filter	Selection of the filter.
No time filter	Active: No time filter is used.
	Not available for Extended Trend
Absolute filter	Active: A fixed period of time is entered in the editor. When the function is executed, the defined absolute time period is exactly used.
	In the settings section, the corresponding options can be shown and configured (on page 66) there.
	Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.
Relative period	Active: A relative time period is entered.
of time	In the settings section, the corresponding options can be shown and configured (on page 69) there.
	Attention: this filter is constantly updated.
From	Active: A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.
	Selection of the area mode from drop-down list:
	Starting at HH:MM:SS
	Starting on day at HH:MM:SS
	Starting on day, month at HH:MM:SS
	In the settings section, the corresponding options can be shown and configured (on page 71) there.
	Attention: The start point of this filter is not updated automatically. Only the existing times are used when shown. The end time point is not defined with this filter, it is carried over.
Time period	Active: A fixed time period is entered. Selection of the area mode from drop- down list:
	One day
	One week
	Two weeks



	One month
	One Year
	15 minutes
	> 30 minutes
	▶ 60 minutes
	In the settings section, the corresponding options can be shown and configured (on page 73) there.
Lot	Active: The dialog for lot selection is shown in Runtime.
	only available for Extended Trend, archive revision and reports.
relative	Active: Display always starts from zero point. Enables several lots to be compared directly.
	Only for ${\tt Extended}$ ${\tt Trend}$ and only available if the Lot option is activated.
ОК	Applies all changes on all tabs and closes the dialog.
Cancel	Discards all changes and closes the dialog.
Help	Opens the online help.

Absolute filter

You define a fixed time period with the absolute filter. When the function is executed, the defined absolute time period is exactly used. To set the filter:

- 1. Select, in the Filter section, the Absolute filter option
- 2. Configure the desired time in the settings section



Screens General Text Titer No time filter Absolute filter Relative filter From Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time © Default Day(s) Month Year HH - MM - SS From I January 2013 0 I January 2013 0 0 Intit January Vertic Intit January Vertic Intit	Filter No time filter Absolute filter Relative filter From Starting at HH:MM:SS Charge Charge Settings	Cancel
Filter No time filter Absolute filter Relative filter From Starting at HH:MM:SS Time period One day Oharge relative Settings Propose current date/time Default Day(s) - Month - Year HH - MM - SS From I anuary v 2013 v 1 0 v Until	 No time filter Absolute filter Relative filter From Starting at HH:MM:SS * Time period One day * Charge relative 	Cancel
O Contract Absolute filter Relative filter From Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time @ Default Day(6) - Month - Year HH - MM - SS From 1 January 2013 1 0		
Relative filter From Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time	Relative filter Relative filter	Help
Relative filter From Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time Ø Default Day(s) - Month - Year HH - MM - SS From I > January > 2013 > 1 0 0 > Until	 From Starting at HH:MM:SS • Time period One day • Charge relative 	
Starting at HH:MM:SS Time period One day Charge relative Settings Propose current date/time Default Day(s) - Month - Year HH - MM - SS From I value January value 2013 value Until	Starting at HH:MM:SS Time period One day O Charge relative	
© Time period One day Charge □ relative Settings © Propose current date/time @ Default Day(s) - Month - Year HH - MM - SS From 1 ■ January ▼ 2013 ▼ 1 0 0 ▼	© Time period One day ▼ ○ Charge □ relative Settings	
One day Charge relative Settings Propose current date/time	One day • Ocharge relative Settings	
Charge relative Settings Propose current date/time Default Day(s) - Month - Year HH - MM - SS From 1 January 2013 1 0 0	Charge Charge relative Settings	
relative Settings Propose current date/time Image: Default Day(s) - Month From Image: The set of the s	☐ relative Settings	
Settings Propose current date/time Default Day(s) - Month - Year HH - MM - SS From 1 v January v 2013 v 1 0 0 x Until	Settings	
Propose current date/time Default Day(s) - Month - Year HH - MM - SS From I January Z013 1 0 0 Until		
	Until	

Note: Time is saved in UTC. For details see chapter Handling of date and time in chapter Runtime.



Parameter	Description
Settings	Configuration of the time filter.
Propose current date/time	Active: Time filter is displayed in Runtime.
Default	Active: The time filter is prescribed in the Editor. Only the start time can still be configured in Runtime.
From	Start time of the filter. Selection of day, month, year, hour, minute and second
Until	End time of the filter. Selection of day, month, year, hour, minute and second

Example: If you want to see all alarms from January 1, 2011 to December 31, 2011, then you must enter the corresponding data at From and To.



Relative filter

A relative time period is entered.

Attention: This filter is updated constantly and continues to run.

Filter	×
Screens General Text Time	
Filter	ОК
© No time filter	Cancel
Absolute filter	Help
Relative filter	Thep
© From	
Starting at HH:MM:SS 🔹	
© Time period	
One day 🔹	
Charge	
relative	
Settings	
Propose current date/time	
Default	
Day(s) - Month - Year HH - MM - SS	



Parameter	Description
Settings	Configuration of the time filter.
Propose current date/time	Active: Time filter is displayed in Runtime.
Default	Active: The time filter is prescribed in the Editor. Only the start time can still be configured in Runtime. Selection of the relative time period in days, hours, minutes and seconds.

Example: You set up a relative time of 10 minutes and switch to an Alarm Message List Screen with this time filter at 12:00. Then you are shown the alarms from 11:50 to 12:00 when switching. If the Alarm Message List screen stays open, the filter is automatically updated. At 12:01, you see the alarms from 11:51-12:01 etc.



From

A time from which the filter is effective is defined.

Filter	×
Screens General Text Time	
Filter	ОК
No time filter	Cancel
Absolute filter	
© Relative filter	Help
From	
Starting on day, month at HH:MM:SS	
◯ Time period	
One day v	
) Charge	
relative	
Settings Day(s) - Month - Year HH - MM - SS	
1 v January v 1 0 0 🔺	



Parameter	Description
Settings	Configuration of the time filter.
[Date/Time]	Depending on the settings of the option, the time from which the filter is effective is configured here:
	hour - minute - second
	day - hour - minute - second
	days - hour - minute - second
	Attention! The start point of this filter is not updated automatically. Only the existing times are used when shown, even if the screen remains open and 23:00:00 is reached. The end time point is not defined with this filter, it is carried over.
hour - minute - second	A time from which the filter is effective is stated. If the time is not reached on the current day, filtering takes place from the corresponding time the previous day.
	Example: You enter 23:00:00. If it is then 23:30 when executing the function, then it is filtered from 23:00:00 up to the current point in time. If it is 22:30 however, then filtering takes place from 23:00:00 on the previous day to the current point in time.
<pre>> day - hour - minute - second</pre>	A day and time for the start of the filter are entered. If the time given has not been reached in the current month, the corresponding time from the previous month is used.
	Example: You enter day $5 - 23:00:00$. If it is the 10th of the month at 23:30, then filtering takes place from the 5th of the month from 23:00:00 to the current time point. If, however, it is the 4th of the month, then filtering takes place from the 5th of the previous month to the current time point.
 days - hour - minute second 	A month, day and time for the start of the filter are entered. If the time stated has not been reached in the current year, the corresponding time from the previous year is used.
	Example: You enter Month October, Day5-23:00:00. If it is October 10th at 23:30, then filtering takes place from October 5th from 23:00:00 to the current time point. If, however, it is only October 4th, then filtering takes place from the 5th of the previous year to the current time point.



Time period

A time period in which the filter is effective is defined.

Filter	×
Screens General Text Time	
Filter	ОК
○ No time filter	Cancel
Absolute filter	
© Relative filter	Help
© From	
Starting on day, month at HH:MM:SS	
Time period	
One day 🗸	
◯ Charge	
relative	
Settings Modify time period	
Move time period to the future by	
HH - MM - SS	
Change period of time by	
Add time	
(i) Deduct time	
use last finished time range	



Parameter	Description				
Settings	Configuration of the time filter.				
Modify time period	Allows amendments to cycles, postponements and extensions of time periods.				
	Active: Evaluation is carried out in accordance with the following rules:				
	 First, the Use last finished time period option is evaluated. 				
	► After this, Change time period by is used.				
	 Move time period to the future by is then applied. 				
	Inactive: No changes to the time period are made.				
	Attention: With version 7.10, filter actions on the basis of this function led to different results than those in the versions before.				
Move time period to the future by	Active: The time period defined in the filter is postponed to the future. Given in hours - minutes - seconds.				
	If a postponement that is the same or greater than the selected time period is set, a note to check the configuration is displayed.				
Change period of time by	Active: The time period defined in the filter is modified. Given in hours - minutes - seconds.				
	If a change and a postponement that are the same or greater than the selected time period is set, a note to check the configuration is displayed.				
Add time	Active: The time stated in Change time period by is added to the time defined in the Time range option.				
Deduct time	Active: The time stated in Change time period by is deducted from the time defined in the Time range option.				
Use last finished time period	Active: The last finished time period is used.				



2.1.7 Functions

The display and handling of the Alarm Message List is controlled in Runtime using functions.

Attention

If functions are used in a network, note the place of execution (on page 102).

Network functions

If network functions are used, the place of execution must be noted:

For functions that are used in the network:

- The place of execution can be freely configured in some cases
- The place of execution is stipulated in some cases

💡 Info

Scripts combine several functions. The place of execution then depends on the settings of the *Execute script* function. This setting overwrites the settings of the individual functions.

CONFIGURE PLACE OF EXECUTION

For functions where the place of execution can be freely configured, the corresponding parameters are available in the properties of the function. To define the place of execution:

- 1. navigate to the Execution group in the Properties.
- 2. Select the desired place of execution by checking the checkbox. Multiple selection is possible:
 - Current computer: Function will be executed on the current computer.
 - Server: Function will be executed on the server.
 - Standby: Function will be executed on the standby server.
 - Client: Function will be executed on all clients.



OVERVIEW OF FUNCTIONS IN THE NETWORK

The following table shows which functions are executed and where they are executed.

Key:

Adjustable: Behavior can be configured

+: Yes

-: No

O: Default

- If not adjustable, O identifies the place of execution:
 - Active computer
 - Server
 - Standby
 - Client



Function	Adjustabl e	Current computer	Serv er	Stand by	Cli ent
AML and CEL					
Alarms: acknowledge flashing	-	0			
Alarms: delete	-		0	0	
Alarms: acknowledge	-		0	0	
Alarm/event group log in/log off	-	0			
Activate/deactivate alarm message list / alarm/event groups / alarm/event classes	-		0	0	
Alarm Message List active	-		0		
Alarm Message List active/inactive	-		0		
Alarm Message List inactive	-		0		
Export AML	+	0			
Save AML and CEL memory buffer	-		0	0	
Export CEL	+	0			
Print AML or CEL	+	0			
Create/print IPA document	-		0		
Switch online printing on/off	-		0	0	
Online printing start new page	+	0			
Switch online printer	-		0		
Application					
Select printer	+	0			
Start EMS	-		0		
Stop EMS	-		0		
Print Extended Trend diagram	+	0			
Switch palette	+	0			
Functions active at limit	-		0	0	



Functions active/inactive at limit	-		0	0
Functions inactive at limit	-		0	0
Open help	+	0		
Reload project online	+	0		
Determine open maintenances	-		0	
PFS - execute user-defined event	+	0		
Activate/deactivate project simulation	-	0		
Simulate right click	+	0		
Save remanent data	+	0		
Exit Runtime	+	0		
Analyze S7 Graph heuristics	+	0		
Execute SAP function	+	0		
Language change	+	0		
Topology - Search for ground fault	-		0	
Topology - LoadShedding	-		0	
Historian				
Archive: Stop	-		0	0
Index archive	-		0	
Archive: Start	-		0	0
Export archives	-	0		
Display open archives	-		0	0
User administration				
Change user	+	0		
Log in with dialog	+	0		
Login without password	+	0		
Log out	+	0		



	1		
Change password	-	0	
Screens			
Change ALC source color	+	0	
Screen with index	-	0	
Close screen	+	0	
Screen: Return to last	-	0	
Screen: Move center	+	0	
Screen switch	+	0	
Activate input to the element with the focus	+-	0	
Set focus to frame	+	0	
Move focus	-	0	
Take focus away from frame	+	0	
Show menu	+	0	
Monitor assign	+	0	
Runtime profiles	+	0	
Close frame	+	0	
Setpoint input for keyboard screen	-	0	
Show overview window	+	0	
Error detection in electric grids			
Acknowledge ground fault message	+	0	
Stop search for ground fault	+	0	
Start search for ground fault	+	0	
Acknowledge short-circuit message	+	0	
Message Control			
Note: Place of execution can be set freely in theory. Changes have no effect however. Message Control is always			



		1	1	1	1
executed on the server.					
Show recipient-database	+	0			
Send a Message	+	0			
Send Message: activate	+	0			
Send Message: deactivate	+	0			
Network					
Authorization in network	+	0			
Redundancy switch	-			0	
Report Generator					
Print report	+				
Report: execute	+				
Export Report	+				
Recipes					
Recipegroup Manager	-	0			
Standard recipe	-	0			
Standard recipe single directly	+	0	0	0	0
Standard recipe single with dialog	-	0			
Standard recipe single with online dialog	-	0			
Script					
Script: execute	+	0			
Script: select online	+	0			
Variable					
Export data	-		0		
Read dBase file	+	0			
Print current values	+	0			
Unit conversion	+	0			



HD administration active	_		0	0	
	-		0	0	
HD administration inactive	-		0	0	
Trend values inactive/active	-		0	0	
Write set value	-		0		
Driver commands	-	0			
Transfer driver simulation image to the standby	-				0
Write time to variable	+	0			
Read time from variable	+	0			
VBA					
Open PCE editor	-		0		
Open VBA editor	+	0			
Execute VBA macro	+	0			
Show VBA macro dialog	+	0			
VSTA					
Open VSTA editor	+	0			
Execute VSTA macro	+	0			
Show VSTA macro dialog	+	0			
Windows					
Play audio file	+	0			
File operations	+	0			
Start continuous tone	+	0			
Stop continuous tone	+	0			
Window to the background	-	0			
Window to foreground	-	0			
Print screenshot	+	0			
Start program	+	0			



AML screen switching

To open an Alarm Message List filter in Runtime:

- 1. Create an Alarm Message List (on page 6) screen
- 2. create a screen switch function for this screen
- 3. define the desired filter properties (on page 47)

In the Runtime you can modify the filter properties. Exception: In the Editor fixed time filter (on page 60) was defined.

ENGINEER SCREEN SWITCH

To create a screen switch to a screen of type AML:

- 1. in the context menu of node function select command New function
- 2. click on screen switch
- 3. the dialog for the screen selection will be opened
- select the screen of type alarm
 or create it in this dialog by clicking symbol New screen
- 5. the filter is displayed with all tabs:
 - General (on page 54)
 - Time (on page 58)
 - Column settings (on page 75)
 - Text (on page 79)
 - Status (on page 81)
 - Project (on page 82) (only available in the integration project of the multi-project administration.)
 - Equipment modeling (on page 82)

If linked variables or indexes are available, the following tabs can be displayed as an option.

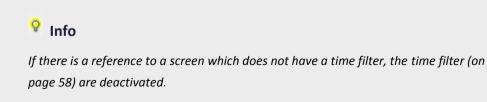
Replace links



r		— X
eneral Time Column settings Text State Equ	uipment modeling	
		ОК
Variable filter Variable name	Identification	Cancel
		Cancer
Case sensitive	•	Help
Type of alarms	Origin of the data	
Only not acknowledged alarms	 Ringbuffer 	
Only cleared alarms	Historic data	
Only current alarms	Max. number:	
Comment required	0	
Alarms must be current for		
Days Hours Min. Sec. ms		
	0	
Alarm/event groups/classes, alarm areas		
Groups	Classes	
- All groups	- All classes	
Al		
Alam areas - All alam areas		
Runtime settings		
Show list without refresh	Show this dialog in the Runtime	
	In the Runtime replace dialog with screen	
	<pre><no linked="" screen=""></no></pre>	

• Replace indices

- 6. define the filters which should be pre-defined in the Runtime
- 7. confirm the settings and close the dialog by clicking ox
- 8. link the function with a button in order to call up the screen and to display the filter properties in the Runtime





AML screen switching filter

Several filters are offered when screen switching is created for an AML screen. For details, see the Alarm configuration using filters (on page 47) section, in the Filters for Alarm Message List screen switching (on page 53) chapter.

AML filter screen switching

To open an Alarm Message List filter screen in Runtime:

- 1. Create an Alarm Message List filter (on page 12) screen
- 2. create a screen switch function for this screen
- 3. define the desired filter properties (on page 112)

In the Runtime the filter properties can only be controlled via the buttons defined in the screen.

ENGINEER SCREEN SWITCH

To create a screen switch to a screen of type Alarm Message List Filter:

- 1. in the context menu of node function select command New function
- 2. click on screen switch
- 3. the dialog for the screen selection will be opened
- select the screen of type Alarm Message List Filter or create it in this dialog by clicking symbol New screen
- 5. the filter is displayed with all tabs:
 - Screens (on page 85)
 - General (on page 87)
 - Text (on page 89)



Filter	
Screens General Text Time	
Filter is taken from the following screen	ОК
Calling screen	Cancel
Screen selection	Help
Screens to be updated	Thep
Screen selection	
Update	
Update on all monitors	

• Time (on page 90)

- 6. define the filters which should be pre-defined in the Runtime
- 7. confirm the settings and close the dialog by clicking ox
- 8. link the function with a button in order to call up the screen and to display the filter properties in the Runtime

AML filter screen switching filter

Several filters are offered when screen switching is created for an AML screen. For details, see Alarm configuration using filters (on page 47) section, Filters for Alarm Message List filter (on page 83) section.

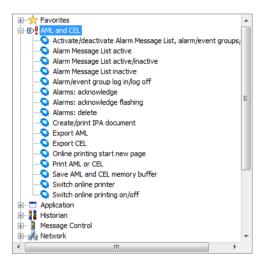
Functions for alarm administration

Different functions make it possible to handle alarms in Runtime.

To create a function for alarm administration:



- 1. navigate to the Functions node
- 2. select New function in the context menu or from the tool bar
- 3. the dialog for selecting functions is opened
- 4. navigate to the **AML/CEL** node



- 5. select the desired function
- 6. configure the function if necessary
- 7. link the function to a button

Alarm/event group log in/log off

To optimize the performance of the connection, alarm/event groups (on page 35) that are not required can be deactivated. Their variables are then no longer required by the driver.

For this function, you must:

1. define the action: logout or login



2. Define the alarm/event group

(Only one group per function can be defined)

Alarm/Ereignis-Gruppe abmelden/anmelden	×
Alarm/Ereignis-Gruppe	
Aktion Abmelden Anmelden Alarm/Ereignis-Gruppe m/Ereignis-Grupp 0	OK Abbrechen Hilfe

Parameter	Description
Action	Defines action. Available actions:
	Logout: Deactivates the alarm/event group
	Login: Activates the alarm/event group
Alarm/event group	Selection of alarm/event group. Click the button and a dialog opens to select the group.
ОК	Confirms inputs and closes dialog.
Cancel	Discards changes and closes dialog.
Help	Opens online help.

EXAMPLE

An alarm group bit is created in the PLC. If this bit is set, the Alarm group active function is called via the limit administration. The variables are requested and the corresponding limits in zenon are checked. The bit can be reset in the PLC. The alarm/event group can be deactivated again above a certain limit value. On program start all limit variables are polled.

Alarms: acknowledge flashing

When flash-acknowledging (on page 146) in Runtime, only the flash attribute of the process variables and the flashing of all graphic elements on the screen are reset. The entry in the alarm list is not acknowledged - except if the Flashing acknowledgement property is active.

To acknowledge the flashing of alarms in Runtime:

1. Create a new function (on page 112)



- 2. Select flash-acknowledge alarms.
- 3. The dialog for the selection of templates opens
- 4. select the frame you wish to assign
- 5. Select the desired monitor for multi-monitor systems
- 6. link the function to a button

Select frame		×
MAIN_WIZARD MENU_WIZARD R_Frame	(0-0 840-1050) (0-910 840-1050) (1680-0 3359-1049)	OK Cancel Help
Monitors:		
Monitor left		Scroll to monitor

Parameter	Description
Select frame	Frames that are to be flash-acknowledged.
Monitor	 For multi-monitor projects, select the virtual monitor for execution: Current monitor Designated virtual monitor
Scroll to monitor	Active: Scroll bars are shown in Runtime, which make it possible to scroll to the monitor.

Alarms: delete

To delete (on page 146) alarms collectively using filter criteria, use the Delete alarms function:

- 1. Create a new function (on page 112)
- 2. Select Delete alarms.



3. The dialog to select the filter criteria opens

(similar to filter criteria in screen switching)

		ОК
Variablenname	Kennung	Abbrech
•	· · · · · · · · · · · · · · · · · · ·	-
Groß-/Kleinschreibung beachten		Hife
Alarmart	Datenherkunft	
Nur nicht guittierte Alarme	Ringpuffer	
Nur gegangene Alame	Historische Daten	
Nur anstehende Alarme	Maximale Anzahl	
	0	
Narme müssen mindestens anstehen	5 V	
Tage Std. Min. Sek. ms		
Runtime-Einstellungen		
Liste angehalten aufschalten		
Diesen Dialog zur Runtime anbieten		
2	Alam/Frainnie-Klassan	
Alam/Ereignis-Gruppen	Alam/Ereignis-Klassen	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen	Alam/Ereignis-Klassen - Ale Alam/Ereignis-Klassen 1 Alamklasse 0	
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamgruppe 0 2 g. Alamgruppe 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	-
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamigruppe 0 2 g_Aamigruppe 1 3 g_Aamigruppe 2	Alle Alam/Ereignis-Klassen Aamklasse 0	
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamgruppe 0 2 g. Alamgruppe 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Ale Alam/Ereignis-Gruppen Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Telle Alam/Ereignis-Gruppen 1 Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2 4 g_Alamgruppe 3	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2 4 g_Alamgruppe 3 Alambereiche Ale Alambereiche	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen I Alamgupe 0 2 g_Alamguppe 0 2 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche Alambereiche I g_Alambereiche I g_Alam	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamguppe 0 2 g_Alamguppe 1 3 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche 1 g_Alambereiche 1 g_Alambereich 0 2 Alambereich 0	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Gruppen Ale Aam/Ereignis-Gruppen I Alamgupe 0 2 g_Aamgupe 0 2 g_Aamgupe 2 4 g_Aamgupe 2 4 g_Aamgupe 3 Aambereiche Tale Aambereiche I g_Aambereich 0 2 Aambereich 1 3 Aambereich 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamguppe 0 2 g_Alamguppe 1 3 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche 1 g_Alambereiche 1 g_Alambereich 0 2 Alambereich 0	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Guppen T-Me-Aam/Ereignis-Guppen T-Mamguope 0 2.g.,Aamguope 1 3.g.,Aamguope 2 4.g.,Aamguope 2 4.g.,Aamguope 3 Aamberiche T-Me-Aambereiche 1.g.,Aambereich 0 2.Aambereich 1 3.Aambereich 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	

- 4. define the criteria for:
 - General (on page 54)
 - Time (on page 58)
 - Text (on page 79)
 - Status (on page 81)
- 5. link the function to a button

USER AUTHORIZATION

The functions Acknowledge alarms (on page 117) and Delete alarms (on page 115) can be assigned to a user group via Function authorization. Only authorized user can acknowledge and delete alarms.

In addition, an additional operating right can be set via the To delete property in the respective subgroup of the Limits group. Selected alarms can only be removed from the Alarm Message List by users with the necessary rights.



If the To delete property is set, alarms are then only removed from the list of active alarms if they are deleted. Acknowledgment alone is not sufficient.



Alarms can only be deleted, if they have been acknowledged before.

Alarms: acknowledge

With this function, you acknowledge Runtime alarms from the Alarm Message List. Most importantly, global acknowledgment (on page 143) is possible with this.

When executing this function in Runtime, the flashing attribute of the variables and therefore screen alarming (only SICAM 230) will also be reset. The selected alarms are acknowledged.

For transfer parameters see chapter Alarm engineering with filters (on page 47).

To acknowledge alarms with this function:

- 1. Create a new function (on page 112)
- 2. Select acknowledge alarms.



3. The dialog to select the filter criteria opens

(similar to filter criteria in screen switching)

		ОК
Variablenname	Kennung	Abbrech
•	· · · · · · · · · · · · · · · · · · ·	-
Groß-/Kleinschreibung beachten		Hife
Alarmart	Datenherkunft	
Nur nicht guittierte Alarme	Ringpuffer	
Nur gegangene Alame	Historische Daten	
Nur anstehende Alarme	Maximale Anzahl	
	0	
Narme müssen mindestens anstehen	5 V	
Tage Std. Min. Sek. ms		
Runtime-Einstellungen		
Liste angehalten aufschalten		
Diesen Dialog zur Runtime anbieten		
2	Alam/Frainnie-Klassan	
Alam/Ereignis-Gruppen	Alam/Ereignis-Klassen	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen	Alam/Ereignis-Klassen - Ale Alam/Ereignis-Klassen 1 Alamklasse 0	
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamgruppe 0 2 g. Alamgruppe 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	-
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamigruppe 0 2 g_Aamigruppe 1 3 g_Aamigruppe 2	Alle Alam/Ereignis-Klassen Aamklasse 0	
Aam/Ereignis-Gruppen - Ale Aam/Ereignis-Gruppen 1 Alamgruppe 0 2 g. Alamgruppe 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Ale Alam/Ereignis-Gruppen Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Telle Alam/Ereignis-Gruppen 1 Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2 4 g_Alamgruppe 3	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamgruppe 0 2 g_Alamgruppe 1 3 g_Alamgruppe 2 4 g_Alamgruppe 3 Alambereiche Ale Alambereiche	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen I Alamgupe 0 2 g_Alamguppe 0 2 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche Alambereiche I g_Alambereiche I g_Alam	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamguppe 0 2 g_Alamguppe 1 3 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche 1 g_Alambereiche 1 g_Alambereich 0 2 Alambereich 0	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Gruppen Ale Aam/Ereignis-Gruppen I Alamgupe 0 2 g_Aamgupe 0 2 g_Aamgupe 2 4 g_Aamgupe 2 4 g_Aamgupe 3 Aambereiche Tale Aambereiche I g_Aambereich 0 2 Aambereich 1 3 Aambereich 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Alam/Ereignis-Gruppen Ale Alam/Ereignis-Gruppen 1 Alamguppe 0 2 g_Alamguppe 1 3 g_Alamguppe 2 4 g_Alamguppe 3 Alambereiche 1 g_Alambereiche 1 g_Alambereich 0 2 Alambereich 0	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	
Aam/Ereignis-Guppen T-Me-Aam/Ereignis-Guppen T-Mamguope 0 2.g.,Aamguope 1 3.g.,Aamguope 2 4.g.,Aamguope 2 4.g.,Aamguope 3 Aamberiche T-Me-Aambereiche 1.g.,Aambereich 0 2.Aambereich 1 3.Aambereich 1	Alle Alam/Ereignis-Klassen Aamklasse 0 2 Alamklasse 1	

- 4. define the criteria for:
 - General (on page 54)
 - Time (on page 58)
 - Text (on page 79)
 - Status (on page 81)
- 5. link the function to a button

USER AUTHORIZATION

The functions Acknowledge alarms (on page 117) and Delete alarms (on page 115) can be assigned to a user group via Function authorization. Only authorized user can acknowledge and delete alarms.

In addition, an additional operating right can be set via the To delete property in the respective subgroup of the Limits group. Selected alarms can only be removed from the Alarm Message List by users with the necessary rights.



If the To delete property is set, alarms are then only removed from the list of active alarms if they are deleted. Acknowledgment alone is not sufficient.



Alarms can only be deleted, if they have been acknowledged before.

Active alarm message list

This function switches the status of the Alarm Message List in Runtime to active when selected.

Alarm Message List active/inactive

This function switches the status of the Alarm Message List in Runtime between <code>active</code> and <code>inactive</code> when selected.

Alarm Message List inactive

This function switches the status of the Alarm Message List in Runtime to inactive when selected.

Activate/deactivate Alarm Message List, alarm/event groups/classes

The function makes it possible to activate or deactivate alarms of a certain group or class (on page 34) or all alarms of the AML or to switch between these two states.

To activate or deactivate alarms:

- 1. Create a new function (on page 112)
- 2. Select Alarm message list, Activate/deactivate alarm/event groups/classes
- 3. The dialog to select alarms opens
- 4. Define the criteria for the function



5. link the function to a button

AI	armmeldeliste, Alarm/Ereignis-Gruppen/Klassen aktivieren/deaktivieren	×
	Auswahl	
	gesamte Alarmmeldeliste	
	O Alarme der Alarm/Ereignis-Gruppe	-
	O Alarme der Alarm/Ereignis-Klasse	-
	aktivieren/deaktivieren	
	 aktivieren 	
	⊘ deaktivieren ⊘ toggeln	
	U Wygun	
	OK Abbrechen Hilfe	:

Parameter	Description
Selection	Selection of the alarms.
Whole alarm message list	Function applies for the whole alarm message list.
Alarms of the alarm/event	Function applies for a certain group.
group	Selection: Clicking on the button opens a drop-down list.
Alarms of the alarm/event	Function applies for a certain class.
class	Selection: Clicking on the button opens a drop-down list.
activate/deactivate	Action of the function.
activate	Activates selected element.
deactivate	Deactivates selected element.
toggle	Switches status (active/inactive).

Export AML

With this function, you can export the alarms saved with filter conditions to a file or database in Runtime.

To export alarms:

- 1. Create a new function (on page 112)
- 2. Select Export AML



- 3. the dialog for selecting filter criteria opens
- 4. define the criteria for:
 - Export format (on page 121)
 - General (on page 54)
 - Time (on page 58)
 - Project (on page 82)
- 5. link the function to a button

Export format

Exports are possible in various formats:

- dBase
- ► CSV
- ► XML
- SQL

💡 Info

The export to SQL is incremental. If there is already exported data, only new and amended data is exported.



portformat Allgemein	Zeit Projekt	
Exportformat dBase CSV XML SQL	Optionen Als Unicode exportieren Inkrementell exportieren	OK Abbrechen Hilfe
Export in Datei		
Dateinamen autor Postfix Engestellter Exportor C:\Users\Public\Doc		
Export in SQL-Datenba Datenbankverbindun Tabelle		



Parameter	Description	
Export format	Selection of the file type. Possible formats:	
	dBase: DBaseIV format (*.dbf):	
	► CSV	
	▶ XML	
	▶ SQL	
	Notes on dBase:	
	Filenames cannot be longer than eight characters.	
	 Configured column width is used for export. If, for example, a value of 40 is set under Column settings, a maximum of 40 characters is then exported. 	
	A maximum of 255 characters are exported.	
Options		
Export as unicode	An export to ASCII format is performed in Unicode	
Incremental export	Only differences since the last backup are exported.	
Export to file	Determining the file in which the export is saved.	
File name	Define file name individually.	
	A maximum of 32 alphanumeric characters including file suffix.	
	Note: Existing files with the same names are overwritten.	
Generate file name automatically	Active: The file name will be generated automatically from a short identifier, a date key and an individual automatic postfix. Inactive: The file name is entered by the user under Filename .	
	(existing files are not overwritten)	
	For details, see the next table: Coding name for automatic naming	
Postfix	Free, individual identification. Only available for Generate filename automatically.	
	Possible entries:	
	dBase: 1 alphanumeric character	
	ASCII and XML: 32 alphanumeric characters	



r	1
Example	Display of the complete file name with automatic generation.
Set export folder	Display of the current export path configured in Project Properties. (Runtime folder property in the General/Name/Folder node.)
Export in SQL database	Parameters for export into a SQL database
Database connection	Configuration of the database connection. A click on the button opens the configuration dialog.
Table	Selection of the table that is to be written in.
General tab	General filter. See Alarm configuration using filters (on page 47) chapter, General (on page 54) section
Time tab	Time filter. See Alarm configuration using filters (on page 47) chapter, Time (on page 58) section.
Project	Project filter. Only available in the Integration project of multi-project administration.
	For configuration, see Alarm configuration using filters (on page 47) chapter, Project (on page 82) section.

CODING NAME FOR AUTOMATIC NAMING

Name	AJJMMTTP.XXX	
A	Short identification of the Alarm Message List	
JJMMTT	Date input:	
	YY: Year, two-digits	
	MM: Month, two-digits	
	DD: Day, two-digits	
Р	Free, individual identification:	
	 dBase: 1 alphanumeric character 	
	ASCII and XML: 32 alphanumeric characters	
XXX	File ending:	
	DBF: dBase	
	► TXT: CSV	



XML: XML

FORMAL MATTERS

- ► Format of the line entries: Is taken from the settings of the Column settings AML and Column settings CEL property.
- Column separator: Semi-colon (;)

Attention

Milliseconds for printing or export

If, when printing or exporting the AML or CEL, the time in milliseconds is to be given, this property must be activated in the dialog for the column settings (on page 75). To do this:

- Navigate to the Alarm Message list or Chronologic event list nodes in properties
- Click on the ... button of the Column settings AML or Column settings CEL property
- The dialog for the column settings is opened
- Activate the checkbox in front of the Milliseconds property

The additional setting must be made for both AML and CEL.

Notes SQL



Attention

Ensure that the provider configured in the connection is also available on the Runtime computer in Runtime.

Note: An SQL client is also installed with the zenon Editor. Because the zenon Runtime does not need an SQL Server, no SQL client is automatically installed. This can be downloaded from the Microsoft Download Area and must be installed individually.

Ensure you install the correct version when installing the provider. This must suit the zenon version being used. This means: If a 32-bit zenon Runtime is used, the provider must be 32-bit version, even if it is installed on a 64-bit operating system and even if the database itself is a 64-bit application.

Save AML and CEL memory buffer

With this function, the content of the ring buffer for alarms and events as well as the values of mathematical variables (counters) can be saved. The entries are saved in the following files:

File	Contents	The size can be set in Properties
ALARM.BIN	Alarms	Size of the ringbuffer
CEL.BIN	Chronological Event List entries	Size of the ringbuffer
SY_MA32.BIN	Values of mathematical variables (e.g. counters)	

To save the AML ring buffer:

- 1. Create a new function (on page 112)
- 2. Select save AML and CEL ring buffer
- 3. link the function to a button



Print AML or CEL

The saved alarms and their filter conditions can be output to a printer in Runtime with this function

To configure the function:

- 1. create a new function (on page 112)
- 2. Select Print AML or CEL
- 3. the dialog for selecting the list opens

Filter	×
Liste Liste die gedruckt wird (a) Alammeldeliste Chronologische Ereignisliste	K Abbrechen Hilfe

- 4. Select Alarm Message List
- 5. the dialog for selecting filter criteria opens
- 6. define the criteria for:
 - General (on page 54)
 - Time (on page 58)
 - Font: Selection from the fonts defined in zenon
- 7. link the function to a button

💡 Info

In the Runtime you cannot switch between CEL and AML. To print both lists, you must engineer two functions.

LINE LAYOUT

Date/Time received	Date/Time cleared	Date/Time acknowledged	Long text	Status text



The keywords available for the formatting file (ALAR.FRM for online printing and ALAR_G.FRM for offline printing) and examples of these being used can be found in the FRM configuration file (on page 161) chapter in the Operation in Runtime (on page 135) section.

The FRM file has three parts:

- Header: at the beginning of the page
- ► List part: cyclic per line
- Footer: at the end of the page

PRINCIPLES

When editing FRM files regard the following:

- Separating the list parts:
 - Header and list part and list part and footer are separated by %%.

The separation marking must be used only once for the list and the footer.

- Attention: The last line must be followed by at least two empty paragraphs. Otherwise the footer is not printed!
- <u>Positioning the individual entries:</u>
 You may only use space, no tabulators.
- Editing the FRM file in a text editor: Automatic line break must be deactivated otherwise undesired effects in the formatting may occur.

KEYWORDS

The setting for the page length is made in Project Properties under AML and CEL or via the ALARM.frm or ALAR_G.frm file for the AML or BTB.frm and BTB_G.frm for the CEL.

Please keep in mind:

- ► The number of the alarm entries per page results from the predetermined number of lines (e.g. Lines per page 72), less the lines used for header and footer text.
- The Use reactivated time option must be activated in order to be able to use the keywords that evaluate the reactivation (time, number).



- Free texts and keywords can be used in the formatting file. Key words can be used either in German or in English. The use of English key words is recommended.
- Not every key word is suitable for every kind of printing (AML, CEL, online, offline).

The following report contains key words in English and German and their field of application.

German	English	AML offlin e	CEL offlin e	AML online	CEL onlin e	Description
Key words for the li	ist part					
@BMKENNUNG	@RESOURCELAB EL	x	x	x	X	Resources label



@DATZEITKOMMT	@DTRECEIVED	х	х	x	x	Time and Date when the alarm occurred
@DATZEITGEHT	@DTCLEARED	х	-	x	-	Time and Date when the alarm ended
@DATZEITOK	@DTACK	Х	-	x	-	Time and Date when the alarm was acknowledged
@DATZEITREAKT	@DTREACTIVATE	X	-	X	-	Time and Date of reactivating: Property Use reactivated time in the project properties must be activated.
@DATZEIT	@DTLASTEVENT	-	-	x	-	Time and date of alarm received or cleared or acknowledged or reactivated
@ZEIT	@TLASTEVENT	-	-	x	X	Time of alarm received or cleared or acknowledged or reactivated
@ZEITOK	@TACK	Х	-	x	-	only displays time of acknowledging
@ZTKOMMT	@TRECEIVED	Х	x	x	x	only displays time of alarm received
@ZTGEHT	@TCLEARED	Х	-	x	-	only displays time of end of alarm
@ZTREAKT	@TREACTIVATE	х	-	x	-	only displays time of reactivating
@TIMELASTING	@TACTIVE	х	-	x	-	Time active (difference time received - time cleared)
@ANWENDUNG	@PROJECTNAME	х	x	x	x	Project name
@KANALNAME	@VARNAME	x	x	X	x	Variable name CEL: Only entries with variables
@AK	@ACLASSNR	х	x	x	x	Alarm/event class name
@AG	@AGROUPNR	х	x	x	x	Alarm/event group number
@AGNAME	@AGROUPNAM	х	x	x	x	Name of alarm/event group



		1			1	
	E					
@AKNAME	ACLASSNAME	x	х	х	х	Name of alarm/event class
@TAGNR	@IDENTIFICATIO N	x	X	X	x	Identification (company- specific label)
@AMELDUNG	@TEXT	х	х	х	X	Alarm message text
@REAKTANZ	@NRREACTIVAT E	х	-	x	-	Number of reactivations
@STATUS	@STATUS	x	X	X	x	Status information as in Alarm Message List
@WERT	@VALUE	х	x	x	x	Variable value of alarm
@REAKTIONSTEXT	@COMMENT	x	x	X	x	Commentary from the Alarm Message List.
						If you use dynamic limit texts, this is only available if properties Long dynamic limit texts AML or Long dynamic limit texts CEL are activated.
@USER	@USERID	x	x	X	x	AML: User who acknowledged alarm.
@RECHNER	@COMPUTER	x	x	X	x	AML: Computer on which alarm was acknowledged.
Key words for head	der and footer					
@ANWENDUNG	@PROJECTNAME	x	x	x	x	Project name
@SEITE	@PAGE	x	x	X	x	Page number
@HEADDATZEIT	@DTSYSTEM	x	x	X	x	System date and system time
@HEADDATUM	@DSYSTEM	x	x	X	x	System date
@HEADZEIT	@TSYSTEM	x	x	X	x	System time
@USER	@USERID	х	x	X	x	User who prints
@USERNAME	@USERNAME	x	X	x	x	Full user name who triggered action
@RECHNER	@COMPUTER	x	x	x	x	Computer from which it is



				printed
[Text]	[Text]			Random text

▲ Attention

Between the key words there must be enough space so that entries are not overwritten. In doing so, you make sure that long limit texts are also displayed correctly.

Example:

@TEXT

(spaces up to here)

SETTING MILLISECONDS

Attention

Milliseconds for printing or export

If, when printing or exporting the AML or CEL, the time in milliseconds is to be given, this property must be activated in the dialog for the column settings (on page 75). To do this:

- Navigate to the Alarm Message list or Chronologic event list nodes in properties
- Click on the ... button of the Column settings AML or Column settings CEL property
- The dialog for the column settings is opened
- Activate the checkbox in front of the Milliseconds property

The additional setting must be made for both AML and CEL.

Switch online printing on/off

Online printing is set to a status when this function is used:

• on: Switches online printing on



- ▶ off: Switches online printing off
- ► active/inactive: Switches online printing

To configure the function:

- 1. create a new function (on page 112)
- 2. Select switch online printing on/off
- 3. the dialog for selecting the action opens

Online-Drucken	
Online-Drucken	
🔘 <u>a</u> usschalten	
🔘 a <u>k</u> tiv/inaktiv	

- 4. select the desired action
- 5. link the function to a button

Online printing start new page

With this function, you control the form feed in Runtime when printing online:

The configured footer will be printed onto the current page of the printout, and then the printout will advance to the beginning of a new page. The page counter will be reset to 1 and the header will be printed out.

To configure the function:

- 1. create a new function (on page 112)
- 2. Select start online printing on a new page
- 3. link the function to a button

Switch online printer

With this function, the printer for online printing can be changed in Runtime.



To configure the function:

- 1. create a new function (on page 112)
- 2. Select switch online printer
- 3. The dialog for selection of the user opens
- 4. Select the desired screen printer from the drop-down list
- 5. link the function to a button

Online-Drucker umschalten	
Druckerwahl:	ОК
•	Abbrechen
	Hilfe
☑ Diesen Dialog zur Runtime anbie!	

Parameters	Description
select printer	Selection of the desired printer from the drop-down list.
Show this dialog in the Runtime	Active: When this function is executed, the dialog is opened and the printer can be defined in Runtime.



2.2 Operating during Runtime

The Alarm Message List is called up in Runtime via a screen switching function (on page 109).

Filter [*]-[*]-[T,Rel:0d,1h,0m,0s]	Filter				Stop
Filter profiles	- Save	e Im	port Expor	t Delete	Total
Variable name	Time received	Time cleared	Time acknowledged	Text	~
WIZ_VAR_10	>>27.02.2012 09:42:07			Limit 750 reached!	Not acknowledged 1 Acknowledge Acknowledge Acknowledge page Acknowledge page Acknowledge page Acknowledge page Delete page
∢ I :::: Comment					Delete all
Comment					
Alarm function					
< no function linked >		Execute	function Open h	elp	Print

The available control elements and the look are engineered in the Editor (on page 6).



Element	Description		
Add template	Opens the dialog for selecting a template for the screen type.		
	Templates are shipped together with zenon and can also be created by the user.		
	Templates add pre-defined control elements to pre-defined locations in the screen. Elements that are not necessary can also be removed individually once they have been created. Additional elements are selected from the drop-down list and dragged onto the screen. Elements can be moved on the screen and arranged individually.		
Alarm Message List	Display of the alarms. The appearance is configurable (on page 10). Columns are defined via the Column settings (on page 75) filter in screen switching or via the Column settings AML property in the Alarm Message list group.		
Display: Set filter	Display of the currently-selected filter conditions.		
Filter	Opens dialogs for filter selection.		
Acknowledge/delete	Groups of buttons for acknowledging and deleting alarms		
Acknowledge	Acknowledging alarm messages in Runtime.		
Acknowledge page	All alarms displayed on the current page are acknowledged.		
Acknowl. All	All alarms for the current filter criteria are acknowledged		
	Note for multi-user project: Alarms are only acknowledged for projects for which the user has authorizations. (for details on multi-user projects, see Distributed engineering chapter)		
> Delete	Deletes alarm from the Alarm Message List in Runtime. Alarm must already be acknowledged.		
Delete page	Deletes all acknowledged alarms that are displayed on the current page.		
Delete all	Deletes all acknowledged alarms that correspond to the current filter criteria.		



Stop/Continue	Switch for filling the list:		
	Stop: New elements are no longer added automatically.		
	Next: New elements are added automatically.		
	Attention: The font of the button can be changed in the editor but is not carried over to Runtime. You can configure changes to the font using Language switching.		
Close	Closes Alarm Message List		
Print	Prints filtered list.		
Print with dialog	Opens printer settings before printing.		
Display: Linked function	Displays the message allocated to the alarm message.		
Execute function	Executes the functions configured for the alarm in Runtime.		
	Note: With the Start program function, the variable name of the selected alarm can be transferred as a parameter for the program to be started using the key word @alarm.name.		
Open help	Calls up configured Help.		
Display	Status and elements of alarm administration.		
Total number	Time number of all alarms.		
Number of unacknowledged	Displays number of unacknowledged alarms.		
Info: Status of Alarm Message List	Display if Alarm Message List is active or not (Project property Alarm Message list active).		
Comment field	Input of free text (comment) by the user for the selected alarm. This text can be displayed in the list (Comment Option in the Column settings of alarm administration.)		
Navigation	Controls elements of the list.		
Line up	Scrolls one line up.		
Line down	Scrolls one line down.		
Column right	Scrolls one column to the right.		
Column left	Scrolls one column to the left.		
Page up	Scrolls one page up.		



Page down	Scrolls one page down.		
Page right	Scrolls one page to the right.		
Page left	Scrolls one page to the left.		
Filter profiles	Filter settings that can be saved by the user in Runtime.		
Profile selection	Select profile from list.		
▶ Save	Saves current setting as a profile.		
▶ Delete	Deletes selected profile.		

CONFIGURATION OF THE DISPLAY

You configure which information is displayed in the alarm status line and Alarm Message List using the alarm configuration column setting. You can reach the column setting via:

Project settings -> Alarm Message list -> Column settings AML (only tab column settings (on page 75))

or

► Function screen switch to a screen of type AML (all tabs (on page 47))

FUNCTIONS FOR LIMITS AS ALARM

When Runtime starts, a check is made to see if the alarm for the limit value has already occurred before Runtime was ended. If this is the case, the linked function is not carried out again. Note: If the limit is not an alarm, execution of the limit value function when Runtime starts may be influenced by the Execute limit function at RT start project setting in the Functions group. This setting is only influences limits that are not alarms.

2.2.1 Alarm status line

The alarm status line display alarms that cannot be acknowledged during runtime as a red bar with black text. It contains information on the variables to be triggered and the time. The alarm status line is defined as the uppermost Windows window and thus covers all zenon screens, as well as all other applications.



Alarms are acknowledged (on page 143) by double-clicking the right mouse button.

CONFIGURING THE ALARM STATUS LINE

To display the alarm status line in Runtime, activate the Status line active property in the Alarm Message list group in product properties.

The actions of the alarm status line in Runtime and the font to be used are defined in project properties of the Alarm status line in the Alarm Message list group:

- display next: defines the alarm status line as a ring. The Size of the ringbuffer property is used as a ring size. If this property is deactivated, the alarm status line always contains only one alarm.
- Display: defines if the oldest filter or the most recent alarm is displayed. The selection is made form the drop-down list.
 - oldest alarm: FIFO buffer
 - Most recent alarm: LIFO buffer

Attention

Behavior in multi-project administration:

The setting in the integration project defines the behavior for sub-projects, regardless of the setting of the sub-projects.

- If the alarm status line is deactivated in a subproject, but not in the integration as a start project, the alarm status line nevertheless continues to be displayed.
- If the alarm status line is activated in the superordinate project then it is also displayed in the subproject, even if it has been deactivated here.
- > The alarm status line of the uppermost project is always used in Runtime.

POSITIONING

By default, the alarm status line is displayed on the top border of the screen (height=18 pixels with standard font). You can change its size and position in the frames. In order to do this, select the alarm status bar and deactivated option Use standard position. After that you can position the alarm status bar - in the same way as a frame - anywhere on the screen.

For multi-project administration, the alarm status line of the integration project determines the position. The settings of the subprojects are ignored.



STATUS MESSAGES IN BLUE STATUS LINE

You can define three status messages to inform the user that the number of alarms has exceeded a certain number, or that the ring buffer of the alarm information list is going to overflow soon. The status messages cover the red alarm status line until they are acknowledged. You can acknowledge them by double-clicking them with the right mouse button. For that, the user must be in the according authorization group. These can be set in the user administration using the function authorizations.

The following applies for opening up the blue status bar:

- The blue line has higher priority for the display than the red alarm status line.
- > The blue line only reacts to the total number of entries in the list
- The maximums for the overall number of entries in the list can be defined using the properties of the Alarm status line group. Each maximum can be allocated a message that is displayed from the bottom when it is exceeded.
- The highest possible maximum is active at any time.
- ► The blue line can only be deactivated with a right mouse click. In doing so, the adjacent maximum is only then triggered if it has been explicitly reached.
- A deactivated maximum is only then reactivated again when it is exceeded again.

2.2.2 Alarm Message List

The alarm information list shows alarm messages line by line during runtime.

To create and display the AML, activate the Alarm Message list active property in the Alarm Message list group.

You can configure the display format in the filter of the screen switch function to an alarm screen in the Column settings (on page 75) tab.

Alarms are saved in a ring buffer (alarm.bin) and in an alarm file (*.aml) in the Runtime folder as soon as they occur.

RINGBUFFER

The ring buffer includes all active alarms. At this the following things are managed:



- ▶ Time received in millisecond as unique signature
- additional information such as cause, value, etc.
- ► Time cleared
- ► Time acknowledged

When acknowledging alarms, all alarms of a variable with the same limit violation are deleted at the same time from the ring buffer.

As soon as the alarm is acknowledged, it is deleted from the ring buffer. Exception: If property To delete is set, the alarm must be deleted by the user decidedly.

SIZE OF THE RINGBUFFER

The size of the ring buffer must be set to an appropriated size in the project properties via property Size of the ringbuffer.

Recommended: At least number of variables for which alarms can occur.

The ring buffer is automatically saved as file alarm.bin when the Runtime is closed. If the Runtime is closed by an unexpected event such as a power outage, data loss occurs. To prevent this the ring buffer can be saved manually via property Save ringbuffer on change at every new entry or via function Save AML and CEL ring buffer (on page 126).

Attention: In the Runtime the ring buffer is handled dynamically in the memory. Via the defined number of alarms, even alarms which do not have a cleared time stamp can be displayed. Thus alarms are displayed which exceed the size of the ring buffer.

🏴 Example

- Size of the ring buffer: 100 entries
- Active alarms in the Runtime without cleared time stamp: 120
- Display in the AML in the Runtime: 120

ALARM FILE

All alarms are written in an alarm file (*.aml) at the same time as in the ring buffer. This file is created for every calendar day automatically and is managed via property Save AML data. The name of the alarm file is put together by the letter A, followed by the date in form JJMMDD and the suffix .aml; e.g. A100623.aml. These files are created automatically for every day and must be evacuated or deleted by



the user if the storage space is limited. *.aml files are saved in the ...\Projektordner\Computername\Projektname folder.

SYNCHRONIZING RING BUFFER AND ALARM FILE

Ring buffer and alarm file are synchronized. This synchronization ensues from the ring buffer to the alarm file. All changes such as acknowledging are only carried out in the ring buffer and are then synchronized with the alarm file. Thus for example all unacknowledged alarms can be displayed in the alarm file and the acknowledge can be induced. The action however is taking place in the ring buffer.

SAVING PERIODS

The alarm file *.aml is saved each time a new entry is made.

The ring buffer (*.bin) is saved:

- when the Runtime is closed
- ► after every new entry if property Save ringbuffer on change is active
- ▶ when function Save AML and CEL memory buffer is carried out

Note: If option Save ringbuffer on change is deactivated, it is possible that the entries in the AML and in the ring buffer do not match after a power outage.

Attention

If the ring buffer overflows because it is too small, unacknowledged entries remain in the alarm file. They are displayed during filtering but they cannot be acknowledged anymore. The attempt to acknowledge them can trigger the acknowledgment on the ring buffer if the alarms concern the same variable and the same limit violation.

AML IN RUNTIME

Alarms in the Alarm Message List can have three states:

- 1. Not cleared
- 2. Not acknowledged
- 3. Not deleted



Alarms can require acknowledgment and/or require deletion.

Acknowledgment resets the flashing attribute of the variables. The deletion of an entry can only be made with a prior acknowledgment of a gone alarm event. Configuration of the acknowledgment and/or requirements for deletion is carried out via the To acknowledge and To deleteproperties in the Limits/AML/CEL nodes of variable configuration

Example for the structure of the alarm information list in the runtime:

Variable	Date/Time received	Date/Time goes	Date/Time acknowledged	Information text
Motor1_failure	20.06.2011 1:00:04 PM	20.06.2011 1:05:35 PM	20.06.2011 1:05:40 PM	Motor's protective relay activated

Each row can be acknowledged (on page 143) by double-clicking it with the right mouse button. For that, the user must be in the according authorization group.

When the Alarm Message List is opened, the status of the alarm management is shown in the upper left corner (active or inactive).

💡 Info

The variables for not acknowledged alarms, acknowledged alarms and number of alarms is stored in a local list in the memory.

See variable 'Not acknowledged alarms' in the chapter Definition of the alarm (on page 54) and CEL filters.

2.2.3 Alarms: acknowledge

For the information "acknowledged" to be displayed in the AML, the following must apply:

- 1. The To acknowledge property must be activated for the variables
- 2. the alarm must be acknowledged

Alarms can be acknowledged via:

double right-click on the alarm status bar



- double right-click on an entry in the Alarm Message List
- Function Acknowledge alarms
- Button in alarm message list

When acknowledging an alarm:

- All alarms of a variable with the same limit are acknowledged together.
- Name and ID of the user who deletes the alarm are written in the Alarm Message List
- the name of the computer from which the alarm was acknowledged is written in the Alarm Message List
- > acknowledging the alarm can be written in the Chronological Event List additionally

Alarms are saved in the ring buffer up to when they are acknowledged. At the same time they are written to a filterable alarm file (*.aml) and kept synchronized.

Attention: The Size of the ringbuffer property must be chosen appropriately. If alarms are no longer saved in the ring buffer (on page 32) due to a buffer overflow, unacknowledged alarms remain in the alarm file. For details see chapter Alarm Message List (AML) (on page 4).

💡 Info

If alarms require a comment (on page 145), these can only be acknowledged if a comment was entered. The user must be authorized to carry out the necessary function.

FUNCTION ACKNOWLEDGE ALARMS

The acknowledge alarm (on page 117) function makes it possible to

- acknowledge alarms from the AML using a function call
- global acknowledgment

When using this function in Runtime, the flashing attribute of the variables and therefore screen alarming (only SICAM 230) will also be reset. The selected alarms are acknowledged. For details, see Acknowledging alarms (on page 117) chapter.



USER AUTHORIZATION

The functions Acknowledge alarms (on page 117) and Delete alarms (on page 115) can be assigned to a user group via Function authorization. Only authorized user can acknowledge and delete alarms.

In addition, an additional operating right can be set via the To delete property in the respective subgroup of the Limits group. Selected alarms can only be removed from the Alarm Message List by users with the necessary rights.

If the To delete property is set, alarms are then only removed from the list of active alarms if they are deleted. Acknowledgment alone is not sufficient.

💡 Info

Alarms can only be deleted, if they have been acknowledged before.

Required comments for acknowledgement

It is possible to make it necessary to enter a comment for alarms that require acknowledgement before the alarm can be acknowledged. To be able to enter a comment, the user needs to enter the corresponding function authorization alarm comment.

To make an alarm require a comment, the corresponding option can be set at:

- ▶ The configuration of the reaction matrixes
- The Comment required property in the Limits group of the variables

Comments that require alarms can subsequently only be amended by users with the **Change alarm comment** function authorization. If comments are changed, an entry into the CEL is made, stating the variable name and the original and amended comment.

Alarms that require a comment are checked for comments with all acknowledgment possibilities (including VBA). The necessary authorization is also checked when changes are made. The Alarm Message List can be filtered for alarms that require a comment by means of:

- Alarm Message List (on page 54) filter
- Alarm Message List filter (on page 12) screen



2.2.4 Alarms: acknowledge flashing

In addition to acknowledging alarms (on page 117) from the alarm message list, screens with alarms can also be acknowledged by template. Flash acknowledgment is called up using the flash-acknowledge alarms (on page 114) function or by double clicking on the corresponding element with the right mouse button. In doing so, only the flash attribute of the variables and the flashing of all graphic elements on the screen is reset. The entries are not however acknowledged in the AML.

FLASH-ACKNOWLEDGMENT WITH ACKNOWLEDGMENT IN AML

A flash-acknowledgment acknowledges the alarms in the AML if the Flashing acknowledgement option is also set in alarm administration.

Only for SICAM 230. The acknowledgment in the alarm message list or on the alarm line level at the upper screen edge also acknowledges the alarm in the screen and screen alarm guidance.

FLASH-ACKNOWLEDGING IN INTEGRATION PROJECTS

If alarms are to be acknowledged in integration projects using the flash-acknowledge function, all affected screens must be opened.

If screens in superordinate and subordinate project templates have the same name, the screens in the subordinate project are not opened. If the template names are different, the screens of the sub-project in the background are opened and can be flash-acknowledged.

💡 Info

If flash-acknowledgment is used in the network, it is only executed locally at the respective client.

2.2.5 Alarms: delete

The following is required to delete an alarm:

- A delete alarm (on page 115) function is executed or
- the Delete button on the screen of the alarm message list type is pressed



Alarms can only be deleted if they have been acknowledged (on page 143) beforehand.

If the To delete property is set for Limits, alarms are only removed from the list of active alarms if they are deleted. Acknowledgment alone is not sufficient.

USER AUTHORIZATION

The functions Acknowledge alarms (on page 117) and Delete alarms (on page 115) can be assigned to a user group via Function authorization. Only authorized user can acknowledge and delete alarms.

In addition, an additional operating right can be set via the To delete property in the respective subgroup of the Limits group. Selected alarms can only be removed from the Alarm Message List by users with the necessary rights.

If the To delete property is set, alarms are then only removed from the list of active alarms if they are deleted. Acknowledgment alone is not sufficient.

💡 Info

Alarms can only be deleted, if they have been acknowledged before.

2.2.6 Filtering alarms

Alarms can be displayed with a filter in Runtime using:

- ▶ filter use in the Runtime
- Screen switching with pre-defined filter to a screen of alarm message list (on page 6) type
- Screen switching with with filter when calling up a screen of alarm message list (on page 6) type
- Screen switching to a screen of alarm message list filter (on page 151) type

FILTERING IN THE RUNTIME

Filters can be used in Runtime in screens of the alarm message list type. To filter the alarms displayed in the AML:

1. you must have engineered button Filter



2. click on the button

Variable name	Time received Time cleared	General Time Column settings Text State Eq	signant modeling	
WZ_VAR_10	>>27.02.2012 09.42.07 <<27.02.2012 09.42.28	Variable filter	phone movements	OK
WZ_VAR_11	>>27 02 2012 09:43 22 <<27 02 2012 09:43 48	Variable name	Identification	Cancel
WZ_VAR_12	>>27 02 2012 09:43 22 <<27 02 2012 09:43 48	1	• •	Cancel
WZ_VAR_10	>>27 02 2012 09:43 44 <<27 02 2012 09:44 09	Case sensitive		
WZ_VAR_11	>>27.02.2012 09.45.04 <<27.02.2012 09.45.29	Type of alarms	Origin of the data	
WZ_VAR_12 MZ_VAR_10	>>27.02.2012.09:45:04 <<27.02.2012.09:45:29 >>27.02.2012.09:45:25 <<27.02.2012.09:45:50	Only not acknowledged alarms Only cleared alarms	Ringbuffer O Historic data	
		Comment required	Max, number:	
		Alams must be current for		
		Days Hours Min. Sec. ms 0 ⊕ 0 ⊕ 0 ⊕ 0 ⊕ 0 ⊕		
		Runtime settings		
		Show list without refresh		
omment		Alam/event groups/classes, alam areas Groups	Classes	
		A groups	- Al choses	
larm function		1 GP Groupe d'alarmes/d'événements 0 2 GP Groupe d'alarmes/d'événements 1	1 GP Classe d'alames/d'événements 0 2 GP Classe d'alames/d'événements 1	
no function linked >	Execute to			
	environmente la	1		
		Alarm areas		
		A stem areas 1 GP Domaine d'alarmes 0		
		1 GP Domaine d'alarmes 0		
		L		

3. The alarm message list filter dialog (on page 47) is opened

Set filter can be saved in profiles (on page 149).

SCREEN SWITCHING TO A SCREEN OF ALARM MESSAGE LIST TYPE

Alarms can be displayed after pre-filtering. To do this:

- Configure a filter (on page 47) for the screen switching to an alarm message list screen (on page 109) function
- 2. The alarm message list is displayed in a filtered state when called up
- 3. if the option Display dialog in the Runtime is activated for the function, you can newly define the filter before the display
- 4. in the Runtime further filter settings are possible via button filter



SCREEN SWITCH TO A SCREEN OF TYPE ALARM MESSAGE LIST FILTER

In order to only offer users the filters they need in Runtime, use an alarm message list filter (on page 151) screen. To do this:

- 1. Configure screen switching to an alarm message list filter screen (on page 111)
- 2. Call up the AML in Runtime using this function
- 3. the user has a tailor-made (on page 83) Alarm Message List

Filter profiles

Filter profiles are filter settings which can be saved and called up by the user in the Runtime.

To use filter profiles, you must engineer the following control elements:

Parameter	Description
Filter profiles	Profile administration
Profile selection	Select saved profile (drop-down list)
Save	Save settings as profile (button)
Delete	Delete profile (button x)

With this you can in the Runtime:

- save filters
- use saved filters
- delete filter profiles

SAVE A FILTER PROFILE

To create a filter profile:

- 1. define filter conditions in the Runtime
- 2. assign a name using property filter profiles



3. click on save

roup	• S	ave Impo	ert Export	Delete	Total 10
Variable name	Time received	Time cleared	Time acknowledged	Text	*
VIZ_VAR_10	>>27.02.2012 09:42:07	<<27.02.2012 09:42:28	Limit	750 reached!	Not acknowledg
VIZ_VAR_11	>>27.02.2012 09:43:22	<<27.02.2012 09:43:48	Limit	750 reached!	10
VIZ_VAR_12	>>27.02.2012 09:43:22	<<27.02.2012 09:43:48	Limit	750 reached!	
VIZ_VAR_10	>>27.02.2012 09:43:44	<<27.02.2012 09:44:09	Limit	750 reached!	
VIZ_VAR_11	>>27.02.2012 09:45:04	<<27.02.2012 09:45:29	Limit	750 reached!	
VIZ_VAR_12	>>27.02.2012 09:45:04	<<27.02.2012 09:45:29	Limit	750 reached!	Acknowledg
VIZ_VAR_10	>>27.02.2012 09:45:25	<<27.02.2012 09:45:50	Limit	750 reached!	
VIZ_VAR_11	>>27.02.2012 09:46:45	<<27.02.2012 09:47:10	Limit	750 reached!	Acknowledge
VIZ_VAR_12	>>27.02.2012 09:46:45	<<27.02.2012 09:47:10	Limit	750 reached!	Acknowl. A
VIZ_VAR_10	>>27.02.2012 09:47:06	<<27.02.2012 09:47:32	Limit	750 reached!	
					Delete
					Delete pag
					Delete all
omment					_

USE FILTER PROFILE

To use a filter profile:

1. select a filter from the drop-down list property filter profiles



Save Import Export Delote Total group received Time cleared Time acknowledged Text Imit 750 reached! WIZ_VAR_12 >>27.02.2012 09:43:22 < < Not acknowledged Imit 750 reached! WIZ_VAR_12 >>27.02.2012 09:45:45 < < Imit 750 reached! Imit 750 reached! WIZ_VAR_11 >>27.02.2012 09:48:26 27.02.2012 09:48:30 Limit 750 reached! Acknowledge WIZ_VAR_12 >>27.02.2012 09:48:26 27.02.2012 09:48:30 Limit 750 reached! Acknowledge WIZ_VAR_12 >>27.02.2012 09:48:26 27.02.2012 09:48:30 Limit 750 reached! Acknowledge WIZ_VAR_12 >>27.02.2012 09:48:26 27.02.2012 09:48:30 Limit 750 reached! Acknowledge WIZ_VAR_12 >>27.02.2012 09:48:26 27.02.2012 09:48:30 Limit 750 reached! Acknowledge page Acknowledge Acknowledge Acknowledge Acknowledge Acknowledge Marm function	Filter [*]-[*]-[T,Rel:0d,1h,0m,0s]	Filter				Stop
Import Export Delote F Import Export Export Export F Import Export Time cleared Time acknowledged Text F WIZ_VAR_12 >>27.02.2012 09.43.22 <<27.02.2012 09.43.25 Limit 750 reached! F H WIZ_VAR_11 >>27.02.2012 09.48.26 27.02.2012 09.48.30 Limit 750 reached! Acknowledge WIZ_VAR_12 >>27.02.2012 09.48.26 -27.02.2012 09.48.30 Limit 750 reached! Acknowledge page Acknowledge Acknowledge Acknowledge page Acknowledge page Acknowledge page Acknowledge Imit 750 reached! Imit 750 reached! Imit 750 reached! Delete page Acknowledge Imit 750 reached! Imit 750 reached! Delete page Delete page Comment Imit 750 reached! Imit	Filter profiles					
test Time cleared Time acknowledged Text Not acknowledged WIZ_VAR_12 >>27.02.2012 09.43:22 <<27.02.2012 09.43:48	group	 Save 	Import	Export	Delete	
WIZ_VAR_12 >>27.02 2012 09:43:22 < Limit 750 reached! Not acknowledged WIZ_VAR_12 >>27.02 2012 09:45:04 <	group					þ
MLINM_IL >>2102.001209.45.04 <2102.021209.45.03	test	received	Time cleared Tir	me acknowledged	Text	
WIZ_VAR_12 >>27.02.2012 09:45:04 <	WIZ_VAR_12	>>27.02.2012 09:43:22 <<2	7.02.2012 09:43:48	L	imit 750 reached!	
WIZ_VAR_11 >>27.02 2012 09:48:26 27.02 2012 09:48:30 Limit 750 reached! WIZ_VAR_12 >>27.02 2012 09:48:26 Limit 750 reached! Acknowledge page Acknowledge page Acknowledge page Acknowledge page Acknowledge page Delete page Delete all Comment	WIZ_VAR_12	>>27.02.2012 09:45:04 <<2	7.02.2012 09:45:29	L	imit 750 reached!	^{p*}
Witz_VAR_12 >>27.02.2012 09.48.26 Limit 750 reached! Acknowledge page Acknowledge page Acknowledge page Delete page Delete all	WIZ_VAR_12	>>27.02.2012 09:46:45 <<2	7.02.2012 09:47:10	L	imit 750 reached!	
Acknowledge page Acknowledge page Acknowledge page Acknowledge page Acknowledge page Acknowledge page Delete all Delete all Narm function	WIZ_VAR_11	>>27.02.2012 09:48:26	27.	02.2012 09:48:30 L	imit 750 reached!	
Acknowledge page Acknowledge page Acknowl. All Uielete Delete page Delete all Comment	WIZ_VAR_12	>>27.02.2012 09:48:26			imit 750 reached!	
Acknowl. All						Acknowledge
Comment						Acknowledge page
Delete page Delete all						Acknowl. All
Delete page Delete all						
Delete page Delete all						
Comment						Delete
Comment						Delete page
Alarm function					-	
Alarm function	4				<u>ن</u>	Delete all
	Comment					
< no function linked > Execute function Open help Print	Alarm function					
	< no function linked >		Execute function	on Open he	lp	Print

2. the filter is immediately applied

DELETE FILTER PROFILE

To delete a filter profile:

- 1. select a filter from the drop-down list property filter profiles
- 2. click on button \mathbf{x}
- 3. the profile is deleted
- 4. the deleted filter is still applied as long as a new filter is defined or selected

Use alarm message list filter

It is possible to adjust filter settings for the Alarm Message List in Runtime with the help of the Alarm Message List Filter (on page 12) screen. All filter settings that are available in the filter (on page 47) for the function to switch the screen to the Chronological Event List screen (on page 109) can be configured.

Therefore:

• Only the filter elements that are actually required are configured and provided to the user



- > The user only has these filters displayed and has an overview
- The appearance can be freely defined and can, for example, ensure ease of use by means of a touch screen.

FILTER SCREENS

Filter screens make it possible to transfer a preset filter from one screen to another. The filter of the source screen is set using the target screen. The screens can also be of a different screen type.

Attention

In order for the time to be taken from the screen to be called up in Runtime, the following time range must be selected in the Editor for the screen switching function for the Alarm Message List or the Chronological Event List in the time filter: Set filter at time filter type

CALL DEFINITION

The following requirements must be met for the set filters to be used:

- 1. Set filter for time filter type is selected as a time period for the time filter.
- The screen (Alarm Message List Filter, Chronological Event List filter Or Time Filter screens) are activated using a button or a combined element. Only in this way can the relationship between filter screen and source screen be maintained.
- 3. The source screen and filter screen must be configured on different frames or monitors. The filter for the filter screen can only be updated if the source screen is open. This is only possible if both screens do not use the same frame or the same monitor.
- 4. The screen to be called up must be compatible with the filter screen to be called up (see table).



Source screen	AML filter	CEL filter	Time filter
Archive revision	Т	Т	Т
Extended trend	Т	Т	Т
Time filter	Т	Т	х
Alarm Message List Filter	X	С	Т
Chronological Event List Filter	С	x	Т
Alarm Message List	X	С	Т
Chronologic event list	С	x	т

Key:

- C: Common settings are updated.
- T: Time settings are updated.
- X: All settings are updated.



No filtering

The filter screen is not filtered, but opened with the configured values, if:

- One of the conditions 1 to 3 is not met or
- The Screen to call up setting is not activated for the Screen switching function or
- > The screen is not called up via a screen element

In this case, the Accept, Close and Update buttons are grayed out in Runtime and have no function.

UPDATE

When a filter screen is called up (Alarm Message List filter, Chronological Event List filter, time filter), the screens configured in the screen switching function are updated in two ways:

If the filter screen is called up via a screen element, the target screens on the same monitor as the source screen are updated.



 If the filter is called up in a different way or if the Update on all monitors setting is activated, all target screens configured are updated.

They are updated as soon as you click the Accept button or as soon as you closes the filter screen with the close close button. The cancel button discards the changes and closes the filter screen.

UPDATE FILTER SETTINGS

You update the current filter settings for the source screen using the <code>Update</code> button. If the filter screen is not called up by a screen element or if the Calling screen has not been activated, all monitors are searched for screens that can be used for updating. The first screen that is found is then this is used for updating.

2.2.7 Printing and exporting alarms

AML alarms can be documented and archived by:

- AML Print online (on page 155): each event is printed on a line printer when it is displayed in the list
- AML (on page 155)offline printing: (on page 158)The AML is printed out as a list in its current state
- Export (on page 166) contents of AML (filtered)

The print used for printouts is defined via menu File -> General configuration -> Standard.



Attention

A configuration file *.frm is used for the print-out:

- online: ALARM.frm
- offline: ALAR_G.frm.

This FRM file must be in the project tree in the **File** section in the **Texts** and **formats** folder.

Templates for FRM files can be found in the zenon installation folder in the FRM_QRF subfolder. These can be inserted via the file in the **Texts** and **formats** section and edited there.

You can kind the key words for FRM files in the FRM configuration file (on page 161) chapter.

Online printing

With online printing, any alarm that occurs is immediately sent to the printer.

Attention: The online printing takes place line by line in accordance with the ESC/P (Epson Standard for Printers) and demands an Epson compatible printer.

To print out alarms online:

- 1. define a printer
- 2. navigate to the AML and CEL node in properties
- 3. Activate the propertyPrinting active
- 4. Select the Printing for property in the Alarm Message List drop-down list
- 5. Define the number of lines with the Lines per page property (default: 72) 72:
- 6. Configure ALARM.frm (on page 161)
- 7. Add ALARM.frm to the Files/texts and formats node



CONTROL PRINT AND PRINTER IN THE RUNTIME

PAGE CHANGE

Form feed is carried out if:

- ► a page is fully written
- the Runtime is closed and online printing is active
- function Online printing start new page (on page 133) is executed

HALT PRINTING

To halt or to continue online printing:

carry out function Switch online printer on/off (on page 132).

CHANGING AND SETTING UP A PRINTER

To change the printer in Runtime:

• Carry out the Switch online printer (on page 133) function

To set up the selected printer in Runtime:

- 1. Configure a Print with dialog control element for the screen
- 2. Click on the Print with dialog button in Runtime
- 3. The configuration dialog is opened

Print Setup		X
Printer		
Name:	Microsoft XPS Document Writer	Properties
Status:	Ready	
Type:	Microsoft XPS Document Writer	
Where:	XPSPort:	
Comment		
Paper		Orientation
Size:	A4 🔹	Portrait
		A
Source:	Automatically Select	Landscape
Network.		OK Cancel



Parameter	Description
Printer	Settings for the printer.
Name:	Selection of the printer from the drop-down list. The list contains all printers configured in the operating system.
Properties	Opens printer configuration dialog.
Status:	Display printer state. For information only.
Туре:	Display printer type. For information only
Location:	Display the location of the printer if configured. For information only.
Comment:	Display comment about printer if configured. For information only.
Paper	Configuration of the printout.
Size	Select paper format from drop-down list.
Source	Select paper feed from drop-down list.
Alignment	Select paper alignment. Possible parameter:
	• Portrait
	• Landscape
Network	Opens dialog for selecting a printer in the network.
ОК	Accepts configuration and closes dialog. With this printing is started in the Runtime.
Cancel	Discards configuration and closes the dialog. In the Runtime this also cancels the printout.

FORMATTING EXAMPLE

Configuration (on page 161) in ALARM. FRM:



Date: @DSYSTEM	Alarm inf. list/demo proj.	Time @TSYSTEM o'clock	Text
Date/Time received	Time cleared	Information text	Status text
%%			
@DTRECEIVED	@TCLEARED	@IDENTIFICATION	@TEXT
%%			
	Page	@PAGE	

Printout on the printer

Date: 20.03.2011	Alarm inf. list/demo proj.	Time: 12:00 o'clock	Text
Date/Time received	Time cleared	Information text	Status text
20.03.2011 13:00:00	20.03.2011 1:03:59 PM	Message 1	Limit exceeded
20.03.2011 13:00:00	1:05:35 PM	Demo information	Limit 750 reached
20.03.2011 1:03:59 PM		Message 2	Limit
20.03.2011 1:11:23 PM		Message 3	off
20.03.2011 1:03:59 PM	1:12:45 PM	Demo information	off
	Page	1	

Offline printing

Offline printing means that the Alarm Message List is printed out as it is displayed at the time in Runtime. This print out is a snapshot including all set filters and their restrictions. The print out is carried out regardless of whether the variables concerned having option print.

PRINT

To print the Alarm Message List offline:

1. define a printer



- 2. Configure ALAR_G.frm (on page 161)
- 3. Add ALAR_G.frm to the Files/texts and formats node
- 4. in the Runtime click button print or print with dialog.

SET UP AND CHANGE PRINTER

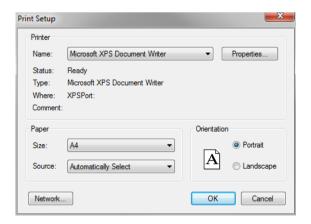
CHANGING AND SETTING UP A PRINTER

To change the printer in Runtime:

• Carry out the Switch online printer (on page 133) function

To set up the selected printer in Runtime:

- 1. Configure a Print with dialog control element for the screen
- 2. Click on the Print with dialog button in Runtime
- 3. The configuration dialog is opened





Parameters	Description
Printers	Settings for the printer.
Name:	Selection of the printer from the drop-down list. The list contains all printers configured in the operating system.
Properties	Opens printer configuration dialog.
Status:	Display printer state. For information only.
Туре:	Display printer type. For information only
Location:	Display the location of the printer if configured. For information only.
Comment:	Display comment about printer if configured. For information only.
Paper	Configuration of the printout.
Size	Select paper format from drop-down list.
Source	Select paper feed from drop-down list.
Alignment	Select paper alignment. Possible parameter:
	• Portrait Format
	• Landscape format
Network	Opens dialog for selecting a printer in the netwok.
OK	Accepts configuration and closes dialog. With this printing is started in the Runtime.
Cancel	Discards configuration and closes the dialog. In the Runtime this also cancels the printout.

FORMATTING EXAMPLE

Configuration in ALAR_G.frm:



Date: @DSYSTEM	Closed Alarm Message List Demo Project	Time @TSYSTEM o'clock	Text
Date/Time received	Time cleared	Information text	Status text
%%			
@DTRECEIVED	@TCLEARED	@IDENTIFICATION	@TEXT
%%			
	Page	@PAGE	

Printout on the printer

Date: 20.03.2011	Closed Alarm Message List Demo Project	Time: 12:00 o'clock	Text
Date/Time received	Time cleared	Information text	Status text
20.03.2011 13:00:00	20.03.2011 1:03:59 PM	Message 1	Limit exceeded
20.03.2011 13:00:00	1:05:35 PM	Demo information	Limit 750 reached
20.03.2011 1:03:59 PM		Message 2	Limit
20.03.2011 1:11:23 PM		Message 3	off
20.03.2011 1:03:59 PM	1:12:45 PM	Demo information	off
	Page	1	

FRM configuration file

FRM files (format files) are configuration files for printing out lists.

An FRM file has three parts:

- Header: at the beginning of the page
- ► List: cyclic per line
- Footer: at the end of the page



BASIC PRINCIPLES

Note, when editing FRM files:

- Separation of list parts:
 - Header and list part and list part and footer are separated by %%.

This separation marking must be used only once for the list part and the base part.

- Attention: There must be at least two empty paragraphs after the last line. Otherwise the footer is not printed!
- <u>Positioning of the individual entries:</u>
 Only empty characters can be used, no tabs.
- Editing the FRM file in a text editor: Automatic line break must be deactivated, otherwise unwanted effects can occur in the formatting.

KEY WORDS

The setting for the page length is made in Project Properties under AML and CEL or via the ALARM.frm or ALAR_G.frm file for the AML or BTB.frm and BTB_G.frm for the CEL.

Please keep in mind:

- ► The number of the alarm entries per page results from the predetermined number of lines (e.g. Lines per page 72), less the lines used for header and footer text.
- The Use reactivated time option must be activated in order to be able to use the keywords that evaluate the reactivation (time, number).
- Free texts and keywords can be used in the formatting file. Key words can be used either in German or in English. The use of English key words is recommended.
- ▶ Not every key word is suitable for every kind of printing (AML, CEL, online, offline).

The following report contains key words in English and German and their field of application.



German	English	AML offlin e	CEL offlin e	AML online	CEL onlin e	Description	
Key words for the list part							
@BMKENNUNG	@RESOURCELAB EL	x	х	x	X	Resources label	



@DATZEITKOMMT	@DTRECEIVED	х	x	x	x	Time and Date when the
						alarm occurred
@DATZEITGEHT	@DTCLEARED	x	-	x	-	Time and Date when the alarm ended
@DATZEITOK	@DTACK	x	-	x	-	Time and Date when the alarm was acknowledged
@DATZEITREAKT	@DTREACTIVATE	X	-	x	-	Time and Date of reactivating: Property Use reactivated time in the project properties must be activated.
@DATZEIT	@DTLASTEVENT	-	-	X	-	Time and date of alarm received or cleared or acknowledged or reactivated
@ZEIT	@TLASTEVENT	-	-	X	X	Time of alarm received or cleared or acknowledged or reactivated
@ZEITOK	@TACK	x	-	x	-	only displays time of acknowledging
@ZTKOMMT	@TRECEIVED	x	X	x	x	only displays time of alarm received
@ZTGEHT	@TCLEARED	x	-	x	-	only displays time of end of alarm
@ZTREAKT	@TREACTIVATE	x	-	x	-	only displays time of reactivating
@TIMELASTING	@TACTIVE	x	-	x	-	Time active (difference time received - time cleared)
@ANWENDUNG	@PROJECTNAME	х	х	x	x	Project name
@KANALNAME	@VARNAME	x	x	x	X	Variable name CEL: Only entries with variables
@AK	@ACLASSNR	х	Х	X	x	Alarm/event class name
@AG	@AGROUPNR	х	X	X	x	Alarm/event group number
@AGNAME	@AGROUPNAM	х	x	x	x	Name of alarm/event group
	1			1	1	1



	E					
	E					
@AKNAME	ACLASSNAME	x	X	X	X	Name of alarm/event class
@TAGNR	@IDENTIFICATIO N	x	x	x	X	Identification (company- specific label)
@AMELDUNG	@TEXT	х	Х	Х	Х	Alarm message text
@REAKTANZ	@NRREACTIVAT E	x	-	X	-	Number of reactivations
@STATUS	@STATUS	x	x	x	Х	Status information as in Alarm Message List
@WERT	@VALUE	х	х	x	х	Variable value of alarm
@REAKTIONSTEXT	@COMMENT	x	x	X	x	Commentary from the Alarm Message List. If you use dynamic limit texts, this is only available if properties Long dynamic limit texts AML or Long dynamic limit texts CEL are activated.
@USER	@USERID	x	x	X	X	AML: User who acknowledged alarm.
@RECHNER	@COMPUTER	х	x	x	X	AML: Computer on which alarm was acknowledged.
Key words for head	ler and footer	1				
@ANWENDUNG	@PROJECTNAME	x	x	X	x	Project name
@SEITE	@PAGE	х	X	x	x	Page number
@HEADDATZEIT	@DTSYSTEM	х	х	Х	x	System date and system time
@HEADDATUM	@DSYSTEM	х	Х	Х	х	System date
@HEADZEIT	@TSYSTEM	х	X	X	x	System time
@USER	@USERID	х	X	x	x	User who prints
@USERNAME	@USERNAME	x	x	x	X	Full user name who triggered action
@RECHNER	@COMPUTER	x	x	x	X	Computer from which it is



				printed
[Text]	[Text]			Random text

🛆 Attention

Between the key words there must be enough space so that entries are not overwritten. In doing so, you make sure that long limit texts are also displayed correctly.

Example:

@TEXT

(spaces up to here)

Exporting alarms

Alarms can be exported in different formats:

- dBase
- CSV
- XML
- SQL

EXPORT

To export alarms

- 1. Create an Export AML (on page 120) function
- 2. link the function to a button
- 3. execute the function in the Runtime

💡 Info

The export to SQL is incremental. If there is already exported data, only new and amended data is exported.

Alarms administration

