zenon manual

Keyboards

v.8.20

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1 Welcome to COPA-DATA help

ZENON VIDEO TUTORIALS

You can find practical examples for project configuration with zenon in our YouTube channel (https://www.copadata.com/tutorial_menu). The tutorials are grouped according to topics and give an initial insight into working with different zenon modules. All tutorials are available in English.

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.

PROJECT SUPPORT

You can receive support for any real project you may have from our customer service team, which you can contact via email at 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.

2 Keyboards

Keyboards serve as virtual keyboards in zenon. Entries are possible in the Runtime using a touchscreen with a virtual keyboard.

Note: Avoid the use of keyboard and the hardware key in mixed operation.

Two different types of keyboards can be configured in zenon Editor:

- Automatic keyboard (on page 6).
- Configurable keyboard (on page 8).

Use of keyboards in zenon:

- Keyboards are used in in zenon to write set values.
- Individual keyboards can be used in the **Batch Control** module.
  - You can find further information in the **Batch Control** manual, in the *Keyboards* chapter.
- You can do the following in recipe groups:
  - Link a keyboard screen for each recipe parameter
  - Define keyboards for each parameter data type

You can find further information in the *RGM* manual in the *Keyboard* chapter.

SPECIAL CASES

RECIPEGROUP MANAGER

A string keyboard is called up for the **action type** user status in the Recipegroup Manager.
If, in the Recipegroup Manager, a *bool* or *numeric* recipe parameter has the action type changed to *user status*, the general string keyboard configured in the RGM is called up. If no keyboard screen is linked there, direct editing mode is activated in the recipe value table.

DYNAMIC TEXT ELEMENT WITH LINKED FUNCTION

If a **dynamic text** element is linked to a function that allows entries, the following is applicable:

- The **Write set value** property is automatically activated and locked for further editing.
- The **Write set value via** property only allows the selection of the following elements:
  - *Standard dialog box*:
    Entry depending on configuration
  - *Element:*
    Entry in the element directly

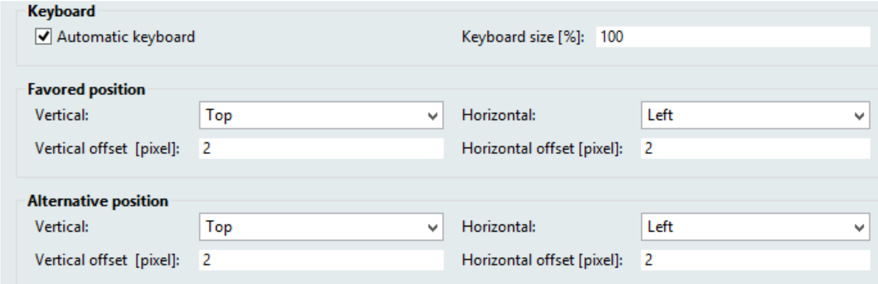
Configuration of input field:

- **Use screen Keyboard** is activated automatically and locked for editing.
- **Screen Keyboard**: Selection of a configured screen (configured by the user).
  - Individual screen present:
    The linked keyboard is used.
  - Empty: **SETSTRINGKBD** is used.

3 Automatic keyboard

To use the automatic keyboard, proceed as follows:

1. Open the zenon Editor
2. Click on the project with which you would like to work.
3. Click on **Interaction** in the properties.
4. Activate the **Automatic keyboard** setting there under the **Keyboard** heading.



Keyboard

☑ Automatic keyboard

Keyboard size [%]: 100

Favored position

Vertical: Top

Horizontal: Left

Vertical offset [pixel]: 2

Horizontal offset [pixel]: 2

Alternative position

Vertical: Top

Horizontal: Left

Vertical offset [pixel]: 2

Horizontal offset [pixel]: 2

This setting is not activated by default. When activating, the automatic keyboard is created by the system and is automatically called up in Runtime relatively close to the element. It appears where a set value is to be entered. You can configure your own properties such as size or position by means of the properties in the Editor.

Note: There are no automatic keyboards available for the profile control elements. In this case, it is recommended that you create your own keyboard and call it up using a button. A profile name can thus be entered on a touchscreen using a separate keyboard that is called up manually.
You can find further information in relation to this in the Runtime profiles chapter in the Runtime manual.

3.1 Size of the keyboard

The size of the keyboard can be freely defined by the user.

To do this:

1. Open the zenon Editor
2. Click on the project with which you would like to work.
3. Click on **Interaction** in the properties.
4. Activate the **Automatic keyboard** setting under the **Keyboard** heading.
5. Enter the desired size in percent in the **Keyboard size [%]** field.

Information

The height of the title bar is obtained from the display settings. The following can be changed using the setting via **Control Panel -> Appearance -> Display -> Advanced -> Element: Palette title**.

3.2 Position of the keyboard

You can define a preferred position and also an alternative position in the properties of the keyboard. If there is not enough space for the keyboard at the preferred position, it will be displayed at the alternative position. If there is also not enough space there, the position will be defined by the system. You define the position with the help of four values.

Property	If there is not enough space for the keyboard at the preferred position, it will be displayed at the alternative position.
Horizontal	*Left* (default) positions the left corner of the keyboard in relation to the top or bottom left corner of the element. *Right* positions the right corner of the keyboard in relation to the top or bottom right corner of the element.
Horizontal offset [pixel]	Horizontal space (in pixels) to the selected element for the preferred position of the automatic keyboard. Positive values move the keyboard to the right, negative values move it to the left. Default: *2*.
Vertical	With *top* (default) or *bottom* you position the keyboard above or below the element.
Vertical offset [pixel]	Vertical space (in pixels) to the selected element for the preferred position of the automatic keyboard. Positive values move the keyboard upwards, negative values move it downwards. Default: *2*.

4 Configurable keyboard

The keyboard can be configured or defined by the user. To do this, proceed as follows:

1. Open the zenon Editor
2. Click on the project with which you would like to work.
3. Create a new frame under **Screen ->Templates**.

   Note: Keyboards always need their own frame that should only be used for keyboards.
4. Configure **Positioning** and size of the template in the **Position** template properties group. The size and position of the keyboard in Runtime are also defined as a result.
5. Under *Screens*, create a new *keyboard* screen (on page 9).
6. Configure the content of the screen:
   a) select menu item **Control elements** from the menu bar

   b) Select *Insert template* in the drop-down list.
   The dialog to select pre-defined layouts is opened. Certain control elements are inserted into the screen at predefined positions.

   c) Remove elements that are not required from the screen.

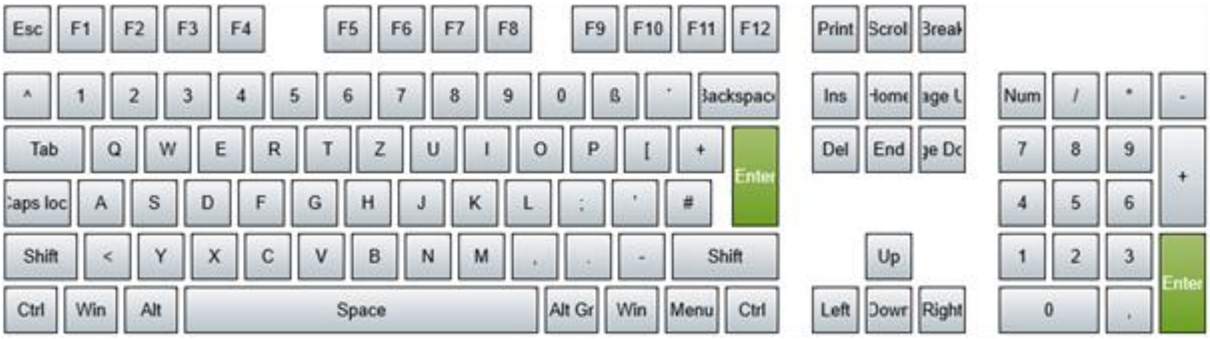
   d) If necessary, select additional elements in the **Elements** drop-down list. Place these at the desired position in the screen.

Configurations of the keyboard keys (such as color or shape) can also be changed in the properties of the control elements. In doing so, note that, depending on the control element, not all properties can be changed. For example, the **Text line 1** property of a control element, which represents a key, cannot be changed. The property is grayed out in this example.

> ### Information
>
> Use of the *Standard* template is recommended.

4.1 Creating a screen of the type keyboard

A *keyboard* screen allows the use of a freely-definable virtual keyboard.


Esc F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 Print Scrol Break
^ 1 2 3 4 5 6 7 8 9 0 ß ´ Backspac Ins Home age U Num / * -
Tab Q W E R T Z U I O P [+ Enter Del End ge Dc 7 8 9 +
Caps loc A S D F G H J K L ; ' # 4 5 6
Shift < Y X C V B N M , . - Shift Up 1 2 3 Enter
Ctrl Win Alt Space Alt Gr Win Menu Ctrl Left Down Right 0 ,

ENGINEERING

Two procedures are available to create a screen:

- The use of the screen creation dialog
- The creation of a screen using the properties

Steps to create the screen using the properties if the screen creation dialog has been deactivated in the menu bar under **Tools**, **Settings** and **Use assistant**:

1. Create a new screen.

   To do this, select the **New screen** command in the tool bar or in the context menu of the **Screens** node.

2. Change the properties of the screen:

   a) Name the screen in the **Name** property.

   b) Select *Keyboard* in the **Screen type** property.

   c) Select the desired frame in the **Frame** property.

3. Configure the content of the screen:

   a) Select the **Elements (screen type)** menu item from the menu bar.

   b) Select *Insert template* in the drop-down list.
   The dialog to select pre-defined layouts is opened. Certain control elements are inserted into the screen at predefined positions.

   c) Remove elements that are not required from the screen.

   d) If necessary, select additional elements in the **Elements** drop-down list. Place these at the desired position in the screen.

4. Create a screen switch function.

Context menu in the project manager:

1. Click on **Screens** in the Project Manager.
2. A right click opens the context menu.
3. Click on **New screen** in the context menu.

Toolbar

1. Click on **Screens** in the Project Manager.
2. In the detail view of the Project Manager, click on **New screen** in the toolbar.

You have several possibilities for determining the screen type of the new screen:

Detail view of the Project Manager:

1. In the detail view of the Project Manager, click on the **screen type** of the newly created screen.
2. Select the *keyboard* screen type in the drop-down list.

Properties:

1. Click on **General** in the properties.
2. Click on the arrow on the right under **screen type** and select the *keyboard* screen type in the drop-down list.
3. In the properties of the **General** group, select a pre-defined keyboard as a name or give it a freely-definable name.

Attention: Keyboard screens with reserved names have priority in the Runtime over other keyboard screens, including the screen *Automatic keyboard* for touch operation.

If a *keyboard* screen is called up over the whole screen, instead of just a dialog, it can be the case that menus are hidden.

Hint: In that case, engineer a **Close frame** function which allows you to close the open keyboard-frame.

In the screen properties, under *General*, there are several key words under *Name*. You can read what these are for in the following:

RESERVED NAMES

For screen type *keyboard*, the following names have been reserved:

Name	Description
DIALOGKBD	if a screen with this name exists, it will be opened in the Runtime every time a dialog is loaded, e.g. for entering a new recipe name in the RGM. **Attention:** The **DIALOGKBD** is not designated to be used with control

Name	Description
	element *Set value input* element and not suitable for it. The use of this combination can cause errors in the Runtime.
SETBOOLKBD	If a screen with this name exists, it will be opened in the Runtime every time an input for binary variables is required.
SETSTRINGKBD	If a screen with this name exists, it will be used in Runtime instead of the standard dialog box for string variables.
SETVALUEKBD	If a screen with this name exists, it will be used in Runtime instead of the standard dialog box for numeric variables. The control element *set value input* must be inserted in the keyboard. **Attention:** When **Caps lock** is activated, you cannot enter anything in a keyboard of type **SETVALUEKBD** as instead of numbers the respective special characters would be entered. **Exception**: French keyboards need the **Shift key** or the **Caps Lock key** in oder to enter numbers.

Note: Use the control element *Set value input* only for keyboards which are created for the input of input set value (**SETVALUEKBD**, **SETSTRINGKBD**). It is automatically connected to the variable of the dynamic element that is to receive the set value. When using a normal Keyboard, unwanted results may occur.

It is imperative for Keyboards that are used for setpoint input to have the control element *Setpoint input* projected in the screen. If not, it is impossible to enter values or to send set values.

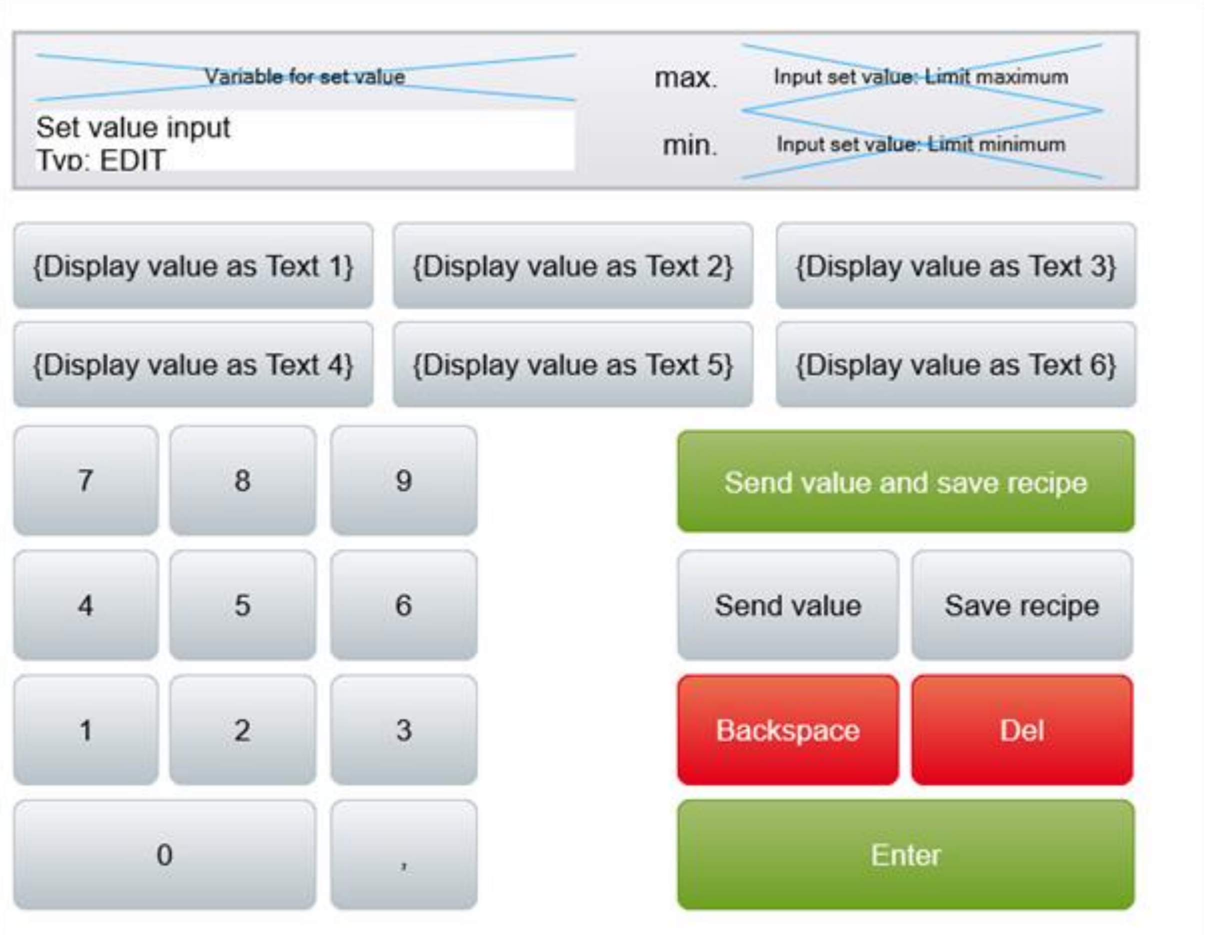
Note: Is in the project

- a screen of type Keyboard with the reserved name **DIALOGKBD** available
- and at the same time a screen of type *Login*
- and the *automatic keyboard* property in the **keyboard** group is activated,

the screens must not be based on the same frame. In this case, the *DIALOGKBD* would be used automatically.

A keyboard button has more properties than a normal button in *zenon Editor*. This can be seen and defined under *Display*. Special characters can be defined this way.

4.2 Control elements


Variable for set value
max.
Input set value: Limit maximum
Set value input
Typ: EDIT
min.
Input set value: Limit minimum
{Display value as Text 1}
{Display value as Text 2}
{Display value as Text 3}
{Display value as Text 4}
{Display value as Text 5}
{Display value as Text 6}
7
8
9
Send value and save recipe
4
5
6
Send value
Save recipe
1
2
3
Backspace
Del
0
,
Enter

Control element	Description
Insert 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 position 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 zenon screen. Elements can be moved on the screen and arranged individually.

Control element	Description
Alphanumerical left	Definition of the keys for self-created keyboard; left side of a normal standard keyboard.
Alphanumerical right	Definition of the keys for self-created keyboard; right side of a normal standard keyboard.
Number lock	Definition of the keys for self-created keyboard; number keys of a normal standard keyboard.
Function keys	Definition of the keys for self-created keyboard; function keys and **Escape keys** of a normal standard keyboard.

Recommendation: Use a template.

Control element	Description
Write set value	Control element for write set value.
Set value input	Allows the input a set value. Must be configured in the screen for *SETBOOLKBD*, *SETSTRINGKBD* and *SETVALUEKBD*.
Increment	Carries out addition calculations. Adds 1 to the value.
Decrement	Carries out subtraction calculations. Subtracts 1 from the value.
Value on	The value is *1*, i.e. *true*. Example: Machine is on.
Value off	The value is *0*, i.e. *false*. Example: Machine is off.
Toggle value	*True/false* switch.
OK	Sets the value and closes the window.
Cancel	Closes the window.

4.3 Keys for Recipegroup Manager

For the RGM, there are the following special control elements available under **Control elements -> Recipegroup Manager specific** when configuring the keyboard screen:

Control element	Description
Send value	The set value is written to the variable, updated in the recipe and the keyboard is closed.
Save recipe	The recipe is saved
Send value and save recipe	The set value is written to the variable, updated in the recipe, the recipe is saved and the keyboard is closed.
Value displays as Text 1 to **Value displays as Text 32**	Keys can be linked with limit values from a reaction matrix. To do this, the variable of the recipe parameter - must be linked with **Numeric reaction matrix** or **String reaction matrix** and - "*equals*" states must be included Assigned keys are shown in runtime and labeled with the text from the reaction matrix. Clicking the button writes the linked value in the reaction matrix as a proposal for the recipe value in the *Set value input* control element.

4.4 Automatic key labeling

The labeling of the Keyboard can be either freely defined or defined by the operating system. To do this, activate or deactivate, in the screen properties under **Representation**, the **Automatic labeling** option. The language is automatically taken from the operating system and the keys are automatically labeled after that. This option is well suited to other countries that want to work with the keyboard. All keyboard layouts that are supported by Windows are available.

The functionality of the virtual keyboard keys corresponds to the hardware keyboard. This depends on the keyboard set on the executing computer in the system settings. The configured labeling is ignored in this case. The keyboard set on the computer (via the system setting) always takes priority for display in zenon Runtime over the labellings displayed in the zenon Editor.

In doing so, the following applies:

1. Active:
    - For letters, numbers and F keys of the screen of the type *Keyboard* the original labeling of the keyboard layout of the operating system is used.
    - No alternative labeling can be defined.

- If keys have been labeled differently, the original labeling will still be used in the Runtime. Function keys such as **Tab** or **Shift** can still be labeled differently.

The keypad of the keyboard is not automatically labeled and the label can be adapted in the Runtime at any time independent of the setting of property **Automatic labeling**.

1. **Inactive**:
   - All keys can be labeled individually and are displayed in the Runtime correspondingly.
   - The labeling of the keys can be amended in the Editor in the properties, under **Representation**.
   - The configured label is displayed in the Runtime.

4.5 Keyboards in the zenon Web Client

If a keyboard is loaded in the Runtime, it remains open even if the Runtime is minimized. In the OS task bar, a drop down list for the keyboard is shown.

> ⚠**Attention**
>
> Individually adapted screens of type **Keyboard** may under certain circumstances not work properly with the Mozilla Firefox browser.
>
> **Reason:** Mozilla Firefox loads new windows in the background without putting the focus on them. Depending on the project configuration, individually-adapted keyboard screens are closed as soon as they are no longer in focus.
>
> **Solution:** Use a different browser such as Microsoft Internet Explorer or Google Chrome, or use the **Close after losing focus** frame option. Correct display in Mozilla Firefox is possible as a result.
>
> Automatic keyboards are not affected!

5 Hardware keyboards and virtual keyboards used together

Virtual keyboards act like hardware keyboards in the operating system. If virtual keyboards are used together with hardware keyboards, they affect each other. Settings on the hardware keyboards - e.g. to determine whether the **Shift** key is used - affect the virtual keyboard and vice versa.

EXAMPLES:

- If **CAPS lock** is pressed on the hardware keyboard for the **Shift** key, this also applies to the virtual keyboard. In this case you cannot enter numbers via the automatic keyboard.
- If you press key **Num** on the hardware keyboard in order to switch off the number pad, the number pad on the virtual keyboard is also turned off.

Note: Use of the virtual keyboard and the hardware keyboard in combined operation is not recommended.