CHORUS

GEWISS

KNX Combined 6/12-channel actuator 8AX

GWA9126

Technical Manual

Contents

1 Introduction

The combined 6/12-channel actuator from DIN rail has 12 independent relays for controlling 12 loads in ON/OFF switching at 230V AC, or 6 roller shutters/Venetian blinds with 230V AC motors.
Each single pair of channels can be configured separately. This means that combinations of various types of output channel (configured for switching or roller shutter command) can be freely created.
The devices have 12 front push-buttons for direct relay switching activation or roller shutter command (up/down/stop), and 12 green LEDs that indicate the output activation status or the roller shutter movement in progress.
For simplicity of reading, all the parameters and communication objects implemented by the device are grouped in different paragraphs, each of which represents the relative configuration menu in the ETS database.

2 Application

The actuator is configured with the ETS software, to perform the following functions:

<u>For the On/Off switching function:</u>

ON/OFF switching
-The NO/NC contact setting, sending status information, relay status in the case of BUS voltage failure/recovery
Delayed activation/deactivation
- Relay activation or deactivation delay setting
Stair raiser lights
- Timed switching with setting of a “stair raiser lights” time with possible switch-off pre-warning
Blinking
- Flashing cyclic switching with settable activation and deactivation time
Scenes
- Configuration of up to 8 scenes for each channel, with possibility to enable learning via the BUS
Logic function
- Logic operation AND/NAND/OR/NOR with command object and result object of logic operation
- Logic operations AND/NAND/OR/NOR/XOR/XNOR up to 8 logic inputs
- Setting the NOT operation on the 8 inputs
Safety
- Object monitoring function via BUS for safety applications (e.g. sensors with cyclical transmission)
Priority command (forced positioning)
- Setting the relay status after forced positioning
- Setting the forced positioning status upon BUS voltage recovery
Block function
- Parametrisation of the block activation value, behaviour when block is active, and behaviour when block is deactivated
- Setting the block object value upon download and upon BUS voltage recovery
Counter
- Count of operating period (contact open or closed) and number of relay operations
- Sending value on BUS on demand or on change
Other functions
- Parametrisation of the operation of the local button keys on the actuator
- Switching object at the same time of all channels (ideal for centralised commands)
- Setting of delay time between switching on and first transmission
- Possibility of configuring all channels at the same time by grouping them (e.g. if they have the same functions)

For the command and control of roller shutters or Venetian blinds:

Setting of activation times
- Setting of all the times necessary for commanding the motor of the roller shutter or Venetian blind

Slat adjustment
- Slat adjustment times (for Venetian blinds)

Priority command (forced positioning)
- Roller shutter setting after forced positioning
- Setting the forced positioning status upon BUS voltage recovery

Block function
- Parametrisation of the load block activation value, behaviour with block active, and behaviour with block deactivated
- Setting the block object value upon download and upon BUS voltage recovery

Scenes
- Configuration of up to 8 scenes, with possibility to enable learning via the BUS

Alarms
- Enabling of weather alarms (wind, rain, ice), setting of execution priority for the various alarms, and position of the load in the event of an alarm and an alarm reset

Count
- Used to enable a count of the up/down period and the number of operations of the relays associated with the up/down channels (by setting the parameters that refer to the counts)

Automatic mode
- Automatic roller shutter command on the basis of irradiation and air-conditioning

Automatic calibration
- The actuator can perform automatic movements to recalibrate the calculated position with the actual load position

2.1 Association limits

Maximum number of group addresses:	254
Maximum number of associations:	254

This means that up to 254 group addresses can be defined, and up to 254 associations can be made (communication objects and group addresses).

3 *“Main”* menu

The **Main** menu only contains the parameters for defining the use of the 12 output channels.

The basic structure of the menu is as follows:

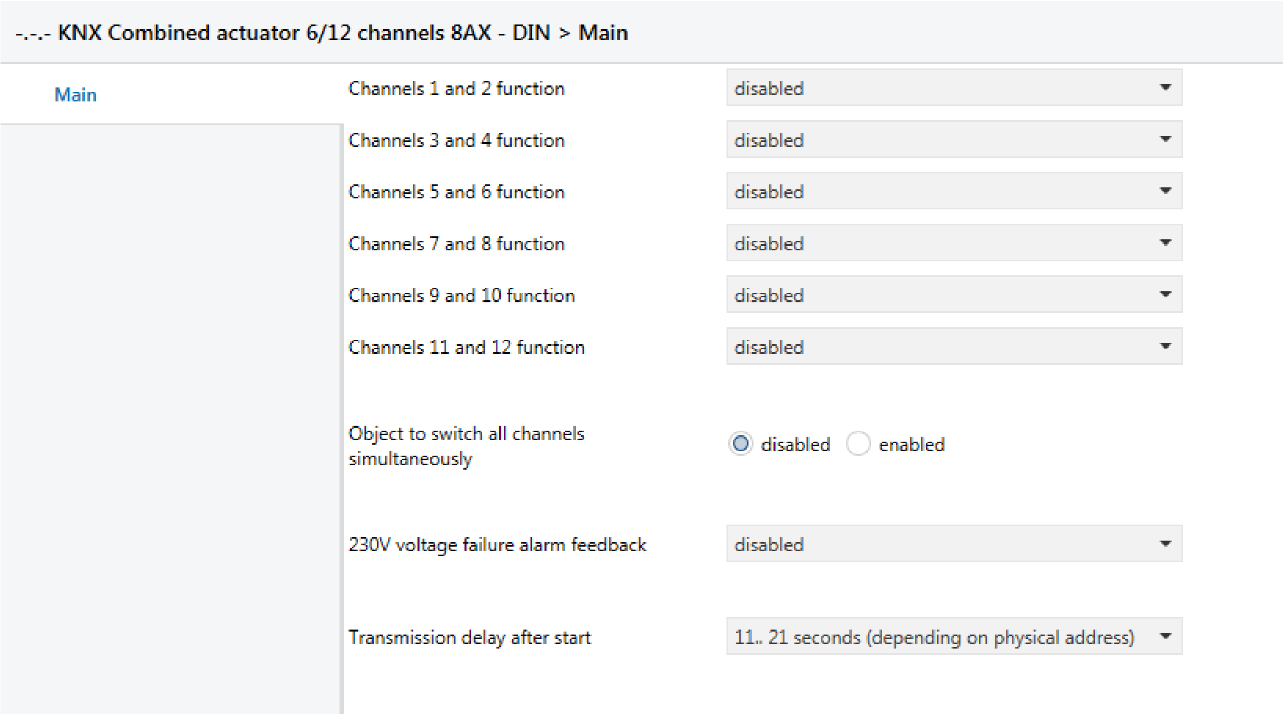


Fig. 3.1

3.1 Parameters

3.1.1 Channels x and y function

The device outputs can be programmed to control a general load independently, or to work in pairs to control the motor of a roller shutter or Venetian blind. In the case of combined operation, the output contacts cannot be closed simultaneously.

The **“Channels 1 and 2 function”**, **“Channels 3 and 4 function”**, **“Channels 5 and 6 function”**, **“Channels 7 and 8 function”**, **“Channels 9 and 10 function”** and **“Channels 11 and 12 function”** parameters are used to define the function of each pair of outputs.

The parameter may assume the following values:

- **disabled** **(default value)**
- switching (independent)
- shutter/Venetian blind (combined)

If **disabled** is selected, the channels will not be used and cannot even be managed via the local push-button.

If **switching (independent)** is selected, the relative outputs will work independently of each other. The **Channel 1 settings** and **Channel 2 settings** (or **Channel 3 settings**, **Channel 4 settings**, **Channel 5 settings**, **Channel 6 settings**, **Channel 7 settings**, **Channel 8 settings**, **Channel 9 settings**, **Channel 10 settings**, **Channel 11 settings**, **Channel 12 settings**, depending on the parameter modified) menus will be visible - see the “Channel X settings” menu (switching operation) in ch.4.

If **shutter/Venetian blind (combined)** is selected, the relative outputs will work in combined mode to control the motor of a roller shutter or Venetian blind. The **Channels 1/2 (shutter/Venetian blind)** (or **Channels 3/4 (shutter/Venetian blind)**, **Channels 5/6 (shutter/Venetian blind)**, **Channels 7/8 (shutter/Venetian blind)**, **Channels 9/10 (shutter/Venetian blind)**, **Channels 11/12 (shutter/Venetian blind)**, depending on the parameter modified) menu will be visible - see the **Channels 1/2 (shutter/Venetian blind)** menu in ch.15.

Given that the relays connected to the outputs are not mechanically interlocked, it is necessary to configure channel operation both via ETS (software) and manually (hardware) using the local push-buttons, for safety reasons linked to the operation of the combined channels (roller shutters/Venetian blinds).
<u>Attention: The device will only actually work if the manual configuration coincides with the configuration performed via ETS.</u>

To configure channel operation locally, proceed as follows:

Access modification mode
1. press the SET/Error push-button for at least 5 seconds
2. wait until the SET/Error LED lights up green
3. opening of all the relays associated with the outputs
4. activation of the LEDs according to the configuration active at that moment

Personalise the parameter
5. change the configuration of the associated channels cyclically by pressing one of the two channels, as shown in the table:

LED 1 and LED 2	LED 3 and LED 4	LED 5 and LED 6	LED 7 and LED 8	LED 9 and LED 10	LED 11 and LED 12	CONFIGURATION OF ASSOCIATED CHANNELS
fixed green						switching (independent)
blinking green (1 HZ) - alternated						roller shutter/Venetian blind (combined)

Quit modification mode
6. to quit
    a. saving the new settings, press the SET/Error push-button
    b. without saving, wait 30 seconds from the last pressing of a push-button
7. the closure of configuration mode is indicated by the SET/Error LED switching off

During this configuration phase, the messages from the BUS are ignored. When you quit the configuration phase, the relays remain open.

After downloading the ETS application software or modifying the local configuration of the channels, the device compares the channel functioning set via ETS with that set locally; any incoherence between the two configurations is signalled by:

1. a fixed red SET/Error LED
2. blinking green LEDs for channels that are incorrectly programmed

    ☞ Channels displaying an error are not managed, and the local push-buttons are disabled. The installer must modify the ETS or local configuration to restore correct channel operation.

If the operation of two associated channels is **disabled** via ETS, the local push-buttons are deactivated but the comparison between the two programming results is still validated.

The factory setting for the device channels is **shutter/Venetian blind (combined)**.

3.1.2 Object to switch all channels simultaneously

The **"Object to switch all channels simultaneously"** parameter is used to enable a communication object specifically for the on/off switching of all the channels configured as **switching (independent)**.
The values that can be set are:

- disabled
- **enabled (default value)**

Selecting **enabled** displays the ***All channels switching*** communication object (Data Point Type: 1.001 DPT_Switch), via which the device switches all the channels ("ON→ NO contact closed/NC contact open" when the value "1" is received, or "OFF → NO contact open/NC contact closed" when the value "0" is received). This command is applied to all the channels configured as **switching (independent)**; channels set as **shutter/Venetian blind (combined)** do not react to the global switching command.
A possible extremely brief delay between the effective moments of channel switching is necessary for the correct switching of the device relays.

3.1.3 230V voltage failure alarm feedback

A possible failure of the 230V auxiliary voltage (as long as the BUS supply voltage is present) can be signalled via the ***230V voltage failure alarm*** communication object (Data Point Type 1.005 DPT_Alarm). You can set the conditions that determine the sending of the communication object via the **"230V voltage failure alarm feedback"** parameter, which may assume the following values:

- **disabled (default value)**
- on demand only
- sending on change

Setting a value other than **disabled** displays the ***230V voltage failure alarm*** output communication object.

3.1.4 Transmission delay after start

To ensure that, with multiple devices in the line, the telegrams sent by the various devices do not collide when the BUS voltage is recovered, it is possible to define the time that must pass after which the device may transmit the telegrams on the BUS following a drop/recovery of the BUS supply voltage. The parameter **"Transmission delay after start"** is used to set this delay. The values that can be set are:

- **11.. 21 seconds (depending on physical address) (default value)**
- 5.. 9 seconds
- 11 seconds
- 13 seconds
- 15 seconds
- 17 seconds
- 19 seconds
- 21 seconds
- no delay

Setting the values **11.. 21 seconds (depending on physical address)** and **5.. 9 seconds**, the device automatically calculates the transmission delay according to an algorithm that examines the physical address of the device itself. The presented values (11/21 or 5/9) indicate the extremes of the value interval that can be calculated.

4 *“Channel X settings”* menu (Switching function)

For the sake of simplicity, the items that make up the menus **Channel 1 settings**, **Channel 2 settings**, **Channel 3 settings**, **Channel 4 settings**, **Channel 5 settings**, **Channel 6 settings**, **Channel 7 settings** and **Channel 8 settings** will be described only once in the following chapters (in reference to the general **Channel x settings** menu) as all these menus contain the same items. The menus are visible if the relative **“Channels 1 and 2 function”** (**“Channels 3 and 4 function”**, **“Channels 5 and 6 function”**, **“Channels 7 and 8 function”**, **“Channels 9 and 10 function”** and **“Channels 11 and 12 function”**) parameter of the **Main** menu is set as **switching (independent)**.
The **Channel x settings** menu contains the parameters that define the behaviour of the relay of the device associated with the channel x configured as **switching (independent)**, beyond the specific functions implemented.

The basic structure of the menu is as follows:

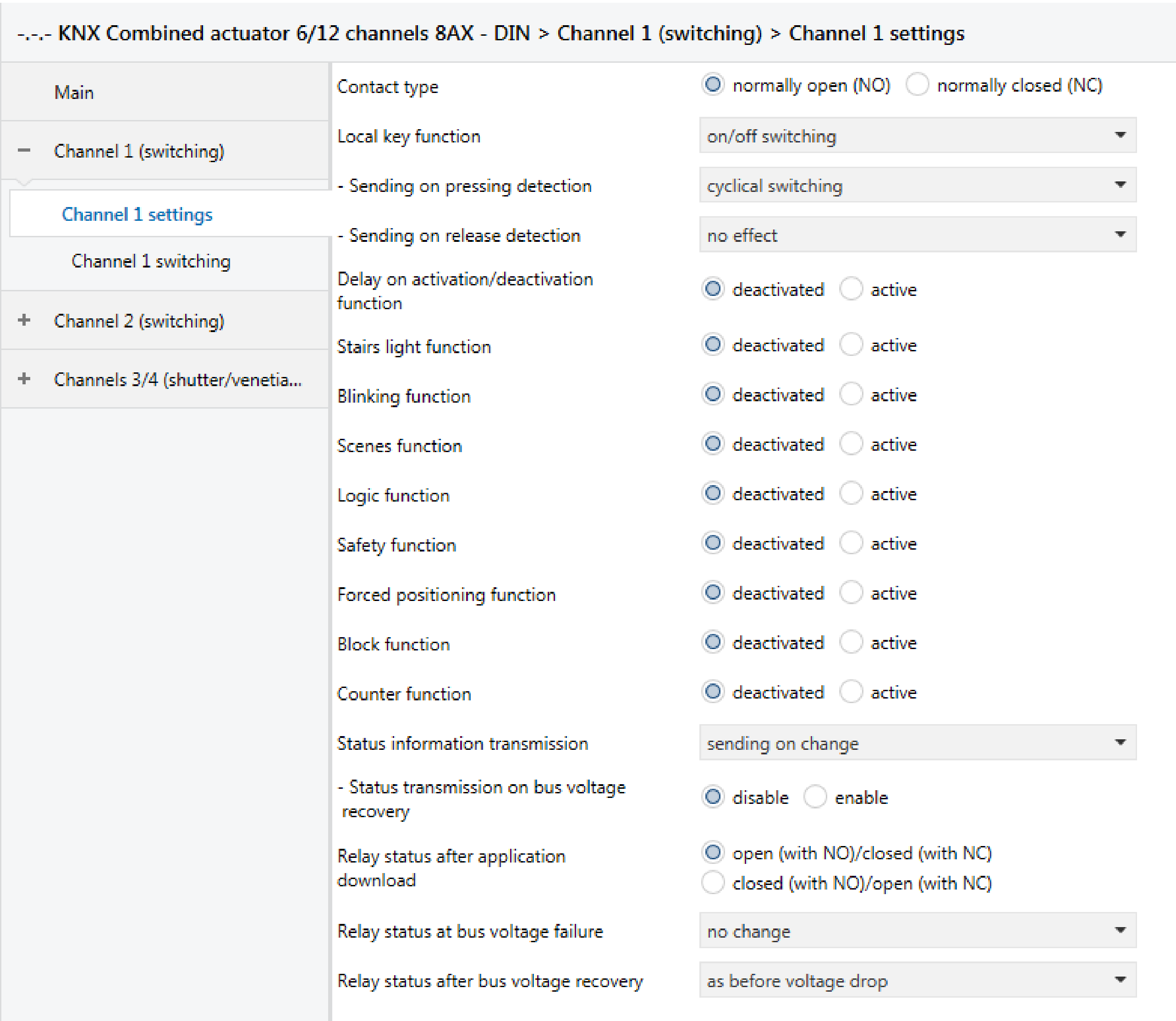


Fig. 4.1

4.1 Parameters

4.1.1 Contact type

Given that the relay that controls the load has an output with a NO (Normally Open) contact, in order to manage the loads with an NC contact the device must be aware of this type of relay functioning. The parameter **"Contact type"** is used to define the type of contact associated with the output that the device has to manage.
The values that can be set are:

- **normally open (NO)** **(default value)**
- normally closed (NC)
-

4.1.2 Local key function

For each channel, there is a push-button on the front of the device for directly controlling the load connected to the relay without the interaction of commands received via the KNX BUS; the **"Local key function"** parameter defines the behaviour of the push-button associated with the relative output when the KNX BUS voltage is present.
The parameter may assume the following values:

- **on/off switching** **(default value)**
- stairs light
- scene
- forced positioning
- block
- on/off test

The difference between the values **on/off switching** and **on/off test** is that the first acts as a command received from the BUS on the ***Ch.x - Switching*** object (so it has a lower priority than the channel safety, forced positioning and block functions), whereas the second directly switches the relay, ignoring any active function (whose activation status is not changed in any way).

Selecting any value other than **scene** displays the **"Sending on pression detection"** and **"Sending on release detection"** parameters, and the relative values will change according to the value set for the parameter in question.
The **"Sending on pression detection"** parameter is used to set the command to be executed when pressure is detected on the push-button associated with the channel.
The **"Sending on release detection"** parameter is used to set the command to be executed when release is detected on the push-button associated with the channel.

- If the control type is **on/off switching** or **on/off test** the values that can be set for the two parameters listed above are:

    - off
    - on
    - **cyclical switching** **(default value on pressing)**
    - **no effect** **(default value on release)**

- If the control type is **stairs light**, the values that can be set for the two parameters listed above are:

    - timing stop
    - **timing start** **(default value on pressing)**
    - cyclical switching
    - **no effect** **(default value on release)**

- If the control type is **forced positioning**, the values that can be set for the two parameters listed above are:

    - **active on forcing** **(default value on pressing)**

- active off forcing
- disable forcing positioning
- cyclical switching forcing on/forcing off
- cyclical switching forcing on/deactivate forcing
- cyclical switching forcing off/deactivate forcing
- **no effect** **(default value on release)**

- If the control type is **block**, the values that can be set for the two parameters listed above are:

  - deactivation
  - **activation** **(default value on pressing)**
  - cyclical switching
  - **no effect** **(default value on release)**

- If the control type is **scene**, the two parameters listed above are not displayed, but the parameter **"Scene number (0.. 63)"** and the parameter **"Scene storing on long operation"** are displayed.
  The parameter **"Scene number (0.. 63)"** is used to set the value of the scene to be recalled/stored; if this value does not coincide with what is associated with the relative parameters in the **Scenes** menu of the associated channel, no scene will be recalled/memorised. The possible values are:

  - from **0 (default value)** to 63, in steps of 1

  The parameter **"Scene storing on long operation"** enables the sending of a scene memorising command when a long operation is recognised. The values that can be set are:

  - disabled
  - **enabled** **(default value)**

  The device will send the scene storing command after a long operation is detected and only if the value **enabled** is selected; by selecting the value **disabled**, a long operation is not recognised and the long operation triggers the sending of the scene execution command (as for a short operation).

The use of the local button keys is guaranteed with the BUS voltage, and without the BUS voltage but with the 230V auxiliary voltage.

4.1.3 Functions that can be configured for each channel

The device has various operating modes and different functions with different priorities.
The parameters **"Delay on activation/deactivation function"**, **"Stairs light function"**, **"Blinking function"**, **"Scenes function"**, **"Logic function"**, **"Safety function"**, **"Forced positioning function"**, **"Block function"** and **"Counter function"** are used to activate the functions and allow the operating parameters of those functions to be made visible and configurable, displaying the configuration menus **Channel x delay on activat./deactiv.**, **Channel x stairs light**, **Channel x blinking**, **Channel x scenes, Channel x Logic**, **Channel x safety**, **Channel x forced positioning**, **Channel x block** and **Channel x counter**. The values that can be set for the parameters listed above are:

- **deactivated** **(default value)**
- active

Selecting **active** displays the relative configuration menu (see Ch.5).

4.1.4 Status information transmission

The status of the relay and as a result of the connected load can be transmitted on the BUS via specific communication object. The parameter used to enable transmitting this information is **"Status information transmission"**, which can have the following values:

- disabled

- on demand only
- **sending on change** **(default value)**

Selecting any value other than **disabled** displays the communication object ***Ch.x - Status*** (Data Point Type 1.001 DPT_Switch) that allows transmitting the status information, concerning the load connected to the device, on the BUS.
If the status signalling takes place **sending on change** , the communication object is sent spontaneously when the status switches from ON to OFF or vice versa; If the set value is **on demand only**, the status will never be sent spontaneously by the device. Only when a status reading request is received from the BUS, the device sends a response telegram with the current load status.
The communication object assumes a value of 1 (ON) if the NO (normally open) contact closes or if the NC (normally closed) contact opens, depending on the setting of the **"Type of contact"** parameter; in the same way, the communication object assumes a value of 0 (OFF) if the NO (normally open) contact opens or if the NC (normally closed) contact closes.

Selecting the value **sending on change**, also displays the parameter **"Status transmission on bus voltage recovery"**, which enables the transmission of the load status information when the BUS voltage is reset. This parameter may have the following values:

- disable
- **enable** **(default value)**

4.1.5 Relay status after application download

It is possible to set the status that the relay contact must assume once the application parameters have been downloaded from the ETC software via the parameter **"Relay status after application download"** which can have the following values:

- **open (with NO)/closed (with NC)** **(default value)**
- closed (with NO)/open (with NC)

4.1.6 Relay status at bus voltage failure

It is possible to define the status of the relay contact following a BUS voltage failure via the parameter **"Relay status at bus voltage failure"** which can assume the following values:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- **no change** **(default value)**

4.1.7 Relay status after bus voltage recovery

It is possible to define the status of the relay contact after BUS voltage recovery via the parameter "**Relay status after bus voltage recovery**" which can assume the following values:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- **as before voltage drop** **(default value)**

SUMMARY OF THE ACTIONS ON THE CONTACTS WITH BUS AND 230V VOLTAGE FAILURE/RESET

<table>
<tr><td colspan="3"></td><td colspan="2">KNX BUS voltage</td></tr>
<tr><td rowspan="3">230V AC voltage</td><td></td><td></td><td>drop</td><td>reset</td></tr>
<tr><td>absent</td><td></td><td>Status of the contacts, as defined in the “Relay status at BUS voltage failure” parameter</td><td rowspan="2">The status of the contacts on voltage reset is as shown in the priorities table (see ch. 25 and 26 - “Channel x function priorities” and “Channel y/z function priorities”)</td></tr>
<tr><td>present</td><td></td><td>Status of the contacts, as defined in the “Relay status at BUS voltage failure” parameter
Possibility to modify the status of the load using the local push-button if the “Local button key function channel x” parameter is different from none</td></tr>
</table>

<table>
<tr><td colspan="3"></td><td colspan="2">230V AC voltage</td></tr>
<tr><td rowspan="3">KNX BUS voltage</td><td></td><td></td><td>drop</td><td>reset</td></tr>
<tr><td>absent</td><td></td><td>No direct voltage failure effect on the contacts</td><td>Opening of the contacts
Possibility to modify the status of the load using the local push-button if the “Local button key function” parameter is different from none</td></tr>
<tr><td>present</td><td></td><td>No direct voltage failure effect on the contacts; normal device operation.
Sending of the 230V absence alarm signal, if "with variations" is enabled</td><td>No direct effect on the contacts; normal device operation.
Sending of the 230V absence alarm termination signal, if "with variations" is enabled</td></tr>
</table>

5 *“Channel X switching” menu (Switching function)*

One of the channel (with switching function) operating modes is on/off switching, which involves switching the relay status according to the commands received; from the BUS, this operating mode can be controlled via the communication object ***Ch.x - Switch*** (Data Point Type: 1.001 DPT_Switch). This function has the same priority of the activation/deactivation delay, stair raiser light and flashing functions; this means that when one of the functions is activated while another is already active, it is executed, ending the previously active one.

The structure of the menu is as follows:

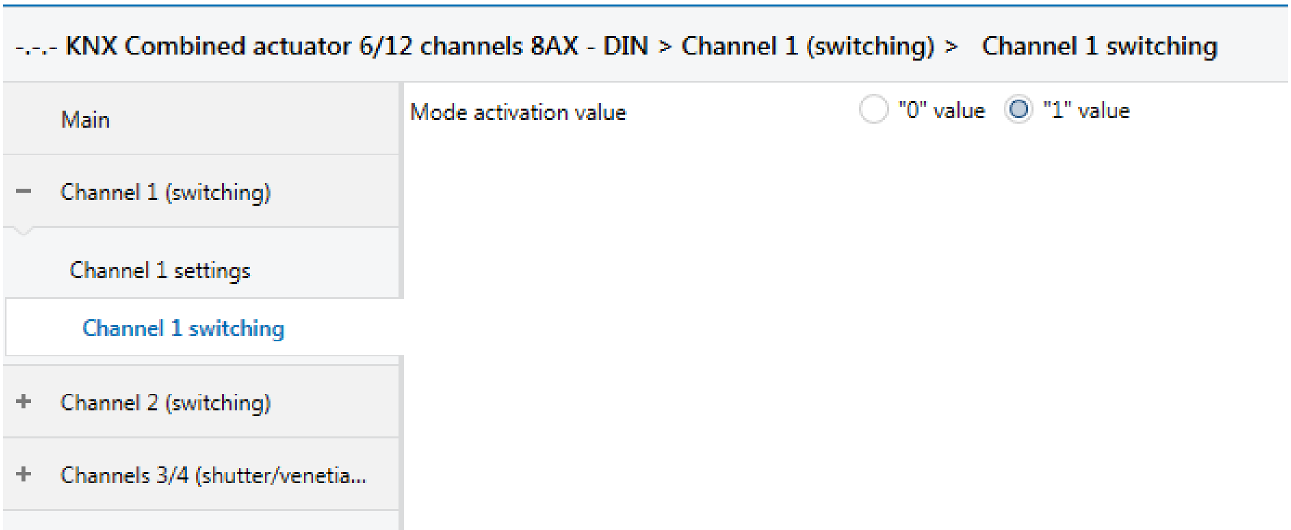


Fig. 5.1

5.1 Parameters

5.1.1 Mode activation value

The parameter **“Mode activation value”** determines which logic value received on the communication object ***Ch.x - Switch*** switches the relay to the ON status (NO contact closed/NC contact open); The possible values are:

- “0” value
- **“1” value** (default value)

If you select **value “0”**, then when the device receives (from the BUS) a telegram with a logic value equal to “0”, it switches the relay to the status → NO contact closed/NC contact open; Vice versa, when the logic value “1” is received, the device shifts the contact to → NO contact open/NC contact closed.

See figures 5.2 and 5.3 below with the status diagram for more information.

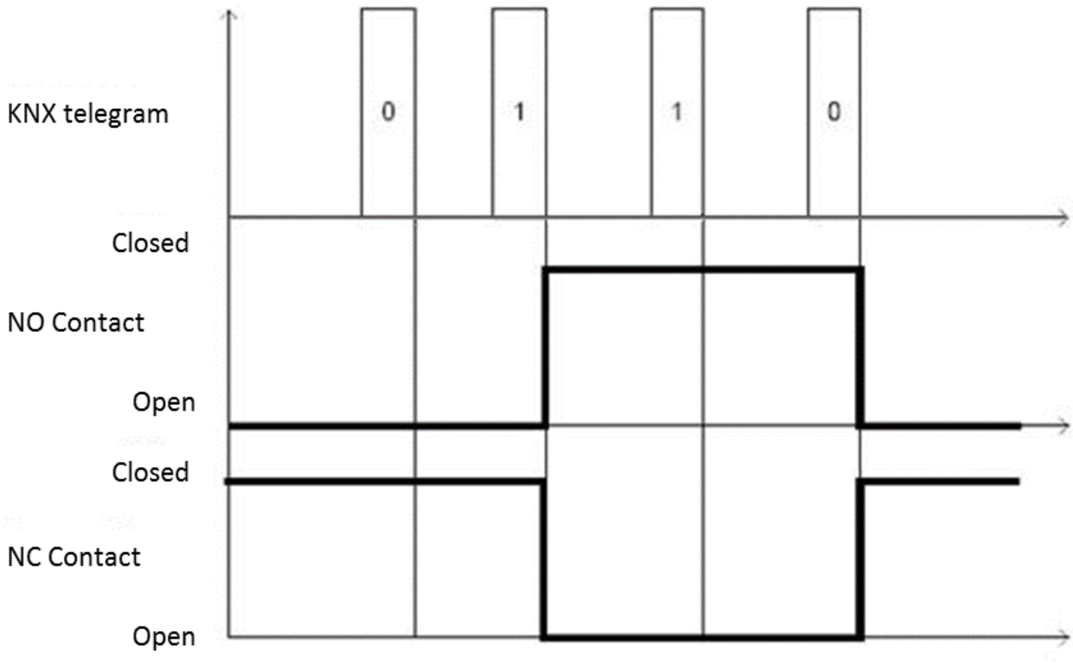


Fig. 5.2

If you select **“1” value**, then when the device receives (from the BUS) a telegram with a logic value equal to “1”, it switches the relay to the status → NO contact closed/NC contact open; Vice versa, when the logic value “0” is received, the device shifts the contact to → NO contact open/NC contact closed. See figure below.

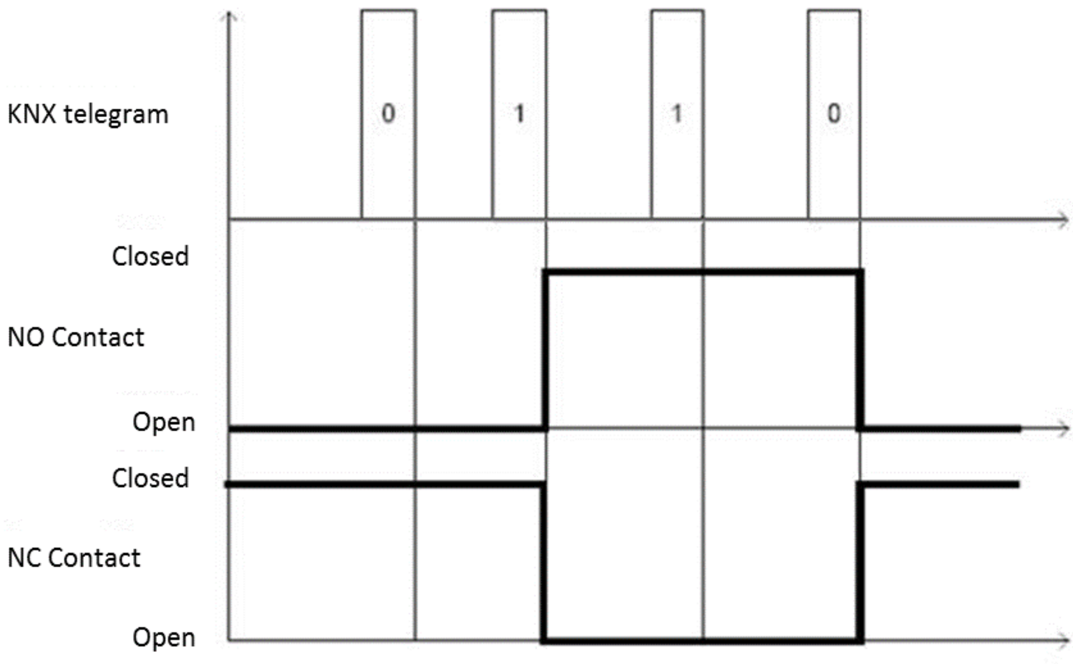


Fig. 5.3

6 *“Channel x delay on activat./deactiv” menu (Switching function)*

One of the channel's operating modes is on/off switching with an activation/deactivation delay, which switches the relay status on the basis of the received commands, creating a delay between the moment of receiving the command and the effective moment in which the relay is switched over. From the BUS, this operating mode can be controlled via the communication object ***Ch.x - Delayed switching*** (Data Point Type: 1.001 DPT_Switch). This function has the same priority as the on/off switching, stair raiser light and blinking functions; this means that when one of the functions is activated while another is already active, it is executed, ending the previously active one.
this means that when one of the functions is activated while another is already active, it is executed, ending the previously active one.
The menu is visible if the **“Delay on activation/deactivation function”** parameter of the **Channel x settings x** menu is set with the value **active**.

The structure of the menu is as follows:

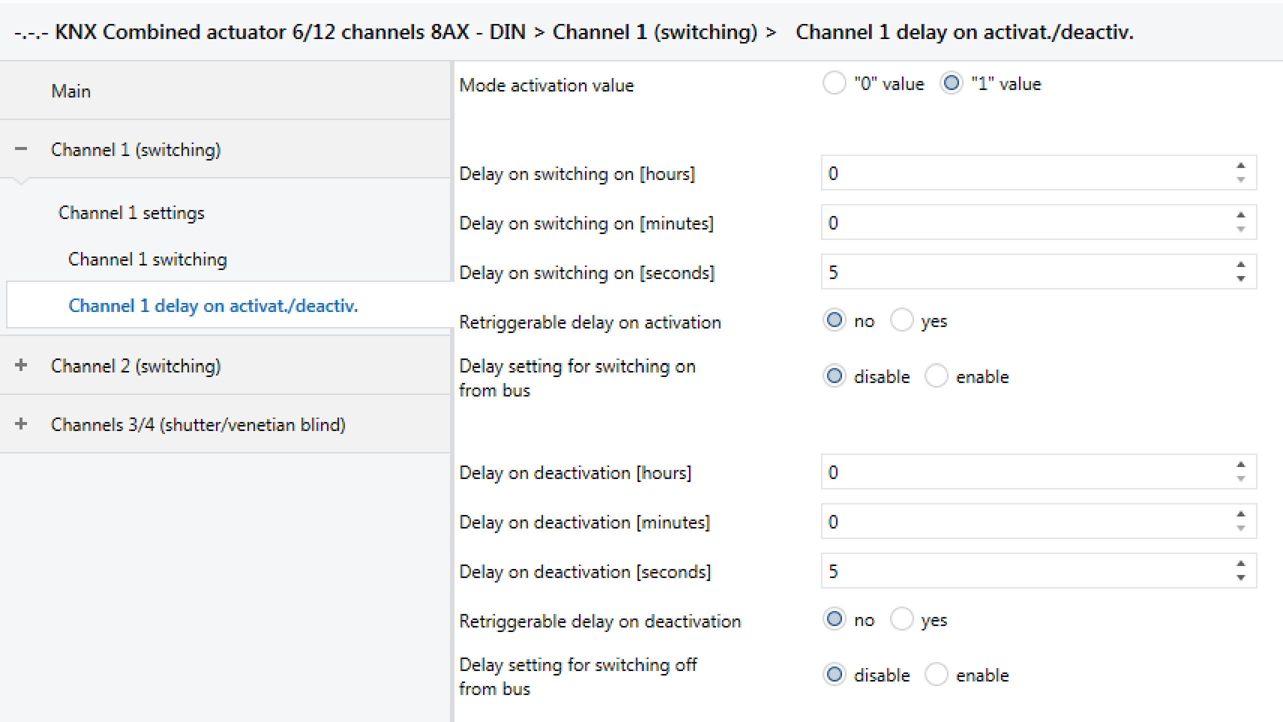


Fig. 6.1

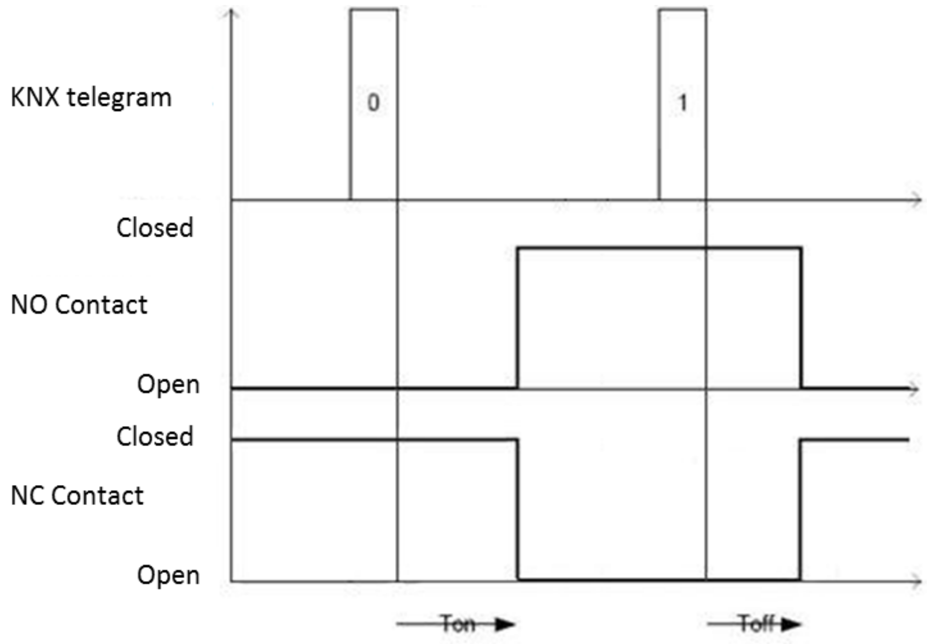
6.1 Parameters

6.1.1 Mode activation value

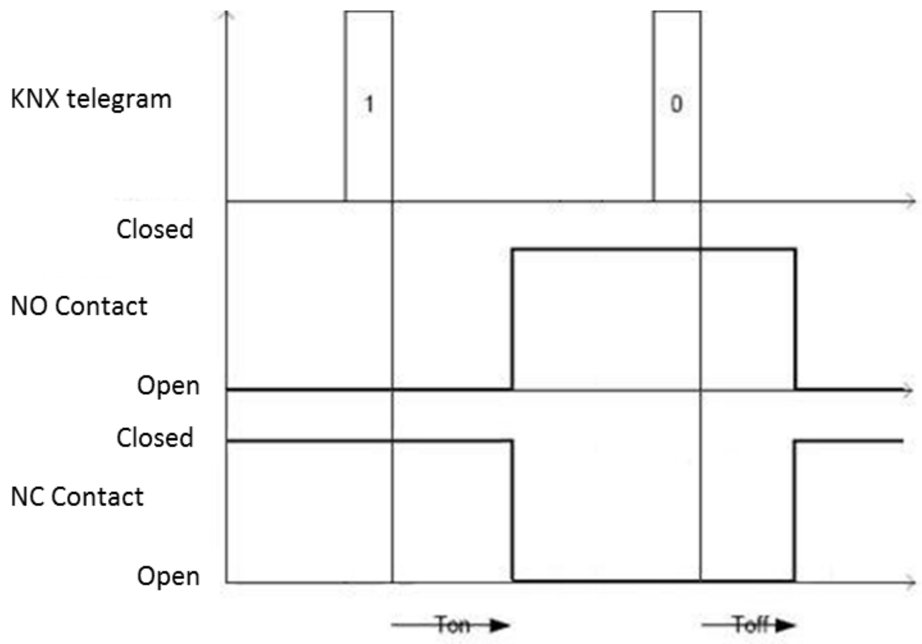
The parameter **“Mode activation value”** determines which logic value received on the communication object ***Ch.x – Delayed switching*** switches the relay to the ON status (NO contact closed/NC contact open); The possible values are:

- “0” value
- **“1” value (default value)**

Selecting **value “0”,** when the device receives a telegram from the BUS with a logic value equal to “0”, after the set activation delay time (Ton) has passed it switches the relay to the status → NO contact closed/NC contact open; Vice versa, when the logic value “1” is received, the device waits for the deactivation delay time (Toff) before switching the contact to → NO contact open/NC contact closed. See figure below.



Selecting **value “1”**, when the device receives a telegram from the BUS with a logic value equal to “1”, after the set activation delay time (Ton) has passed it switches the relay to the status → NO contact closed/NC contact open; Vice versa, when the logic value “0” is received, the device waits for the deactivation delay time (Toff) before switching the contact to → NO contact open/NC contact closed. See figure below.



6.1.2 Delay on switching on [hours] / [minutes] / [seconds]

The **“Delay on switching on [hours]”** parameter is used to set the first of the three values (hours) that make up the activation delay time (hours, minutes, seconds). The values that can be set are:

- from **0 (default value)** to 24, in steps of 1

The **“Delay on switching on [minutes]”** parameter is used to set the second of the three values (minutes) that make up the activation delay time (hours, minutes, seconds). The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

The **“Delay on switching on [seconds]”** parameter is used to set the last of the three values (seconds) that make up the activation delay time (hours, minutes, seconds). The values that can be set are:

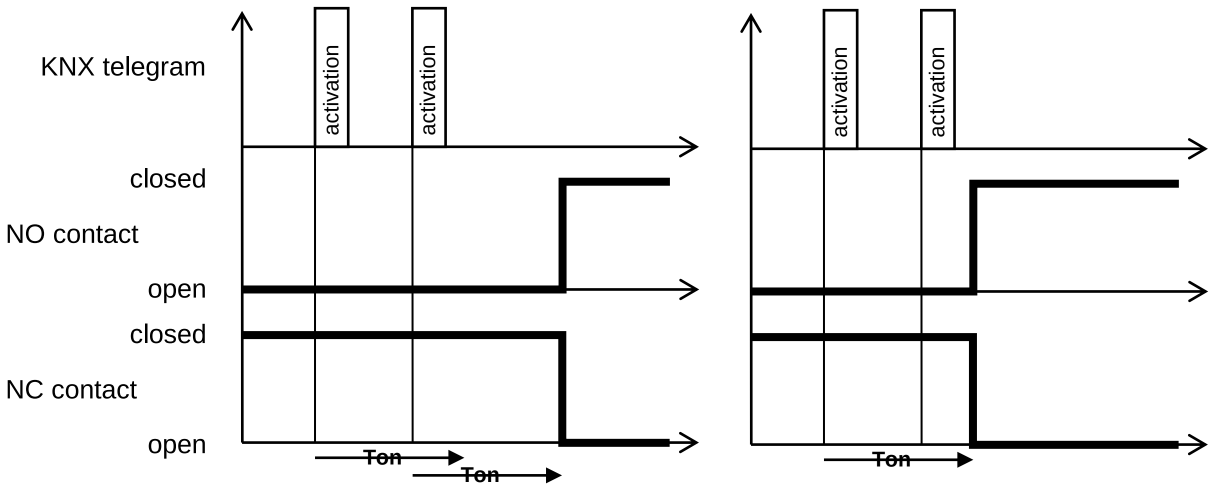
- from 0 to 59, in steps of 1, **5 (default value)**

6.1.3 Retriggerable delay on activation

The **”Retriggerable delay on activation”** parameter is used to enable the reset of the activation delay time whenever a BUS telegram is received for delayed activation with a delay count already active. The values that can be set are:

- **no** **(default value)**
- yes

By selecting **yes**, if a new delayed activation telegram is received during the activation delay count, the counter is reinitialised; otherwise, the count continues without changes. See figure below (to the left with reset enabled, to the right without reset).



6.1.4 Delay setting for switching on from bus

The parameter **”Delay setting for switching on from bus”** is used to enable the communication object through which a new activation delay value is received, which overwrites the one configured in ETS; The values that can be set are:

- **disable** **(default value)**
- enable

selecting the value **enable**, displays the communication object ***Ch.x – Delay on activation*** (Data Point Type: 7.005 DPT_TimePeriodSec) which is used to receive the value of the activation delay from the BUS.
If the new value is received while an activation delay time count is already in progress, it will become operative when the subsequent activation command is received.

6.1.5 Delay on deactivation [hours] / [minutes] / [seconds]

The **“Delay on deactivation [hours]”** parameter is used to set the first of the three values (hours) that make up the deactivation delay time (hours, minutes, seconds). The values that can be set are:

- from **0 (default value)** to 24, in steps of 1

The **“Delay on deactivation [minutes]”** parameter is used to set the second of the three values (minutes) that make up the deactivation delay time (hours, minutes, seconds). The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

The **“Delay on deactivation [seconds]”** parameter is used to set the last of the three values (seconds) that make up the deactivation delay time (hours, minutes, seconds). The values that can be set are:

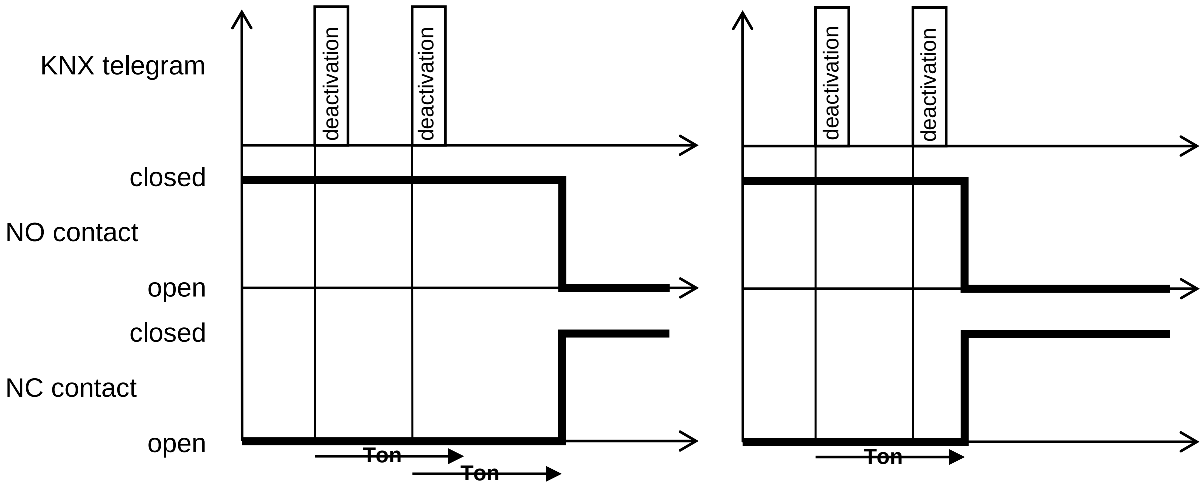
- from 0 to 59, in steps of 1, **5 (default value)**

6.1.6 Retriggerable delay on deactivation

The parameter **”Retriggerable delay on deactivation”** is used to enable the reset of the deactivation delay time each time that a delayed deactivation BUS telegram is received with the delay count already active. The values that can be set are:

- **no** **(default value)**
- yes

By selecting **yes**, if a new delayed deactivation telegram is received during the deactivation delay count, the counter is reinitialised; otherwise, the count continues without changes. See figure below (to the left with reset enabled, to the right without reset).



6.1.7 Delay setting for switching off from bus

The parameter **”Delay setting for switching off from bus”** is used to enable the communication object through which a new deactivation delay value is received, which overwrites the one configured in ETS. The values that can be set are:

- **disable** **(default value)**
- enable

selecting the value **enable**, displays the communication object ***Ch.x – Delay on deactivation*** (Data Point Type: 7.005 DPT_TimePeriodSec) which is used to receive the value of the deactivation delay from the BUS. If the new value is received while a deactivation delay time count is already in progress, it will become operative when the subsequent deactivation command is received.

7 *“Channel X stairs light” (Switching function)*

One of the channel operating modes is timed activation or stair raiser light function, which involves activating the load for a certain period of time and then deactivating it automatically without receiving a command. Furthermore, it is possible to enter a certain delay between the moment the timed start command is received and the effective instant in which the relay is switched; from the BUS, this operating mode can be controlled via the communication object ***Ch.x – Timed switch*** (Data Point Type: 1.010 DPT_Start).
This function has the same priority as the on/off switching, delayed activation/deactivation, and blinking functions; this means that when one of the functions is activated while another is already active, it is executed, ending the previously active one.
The menu is visible if the **“Stairs light function”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

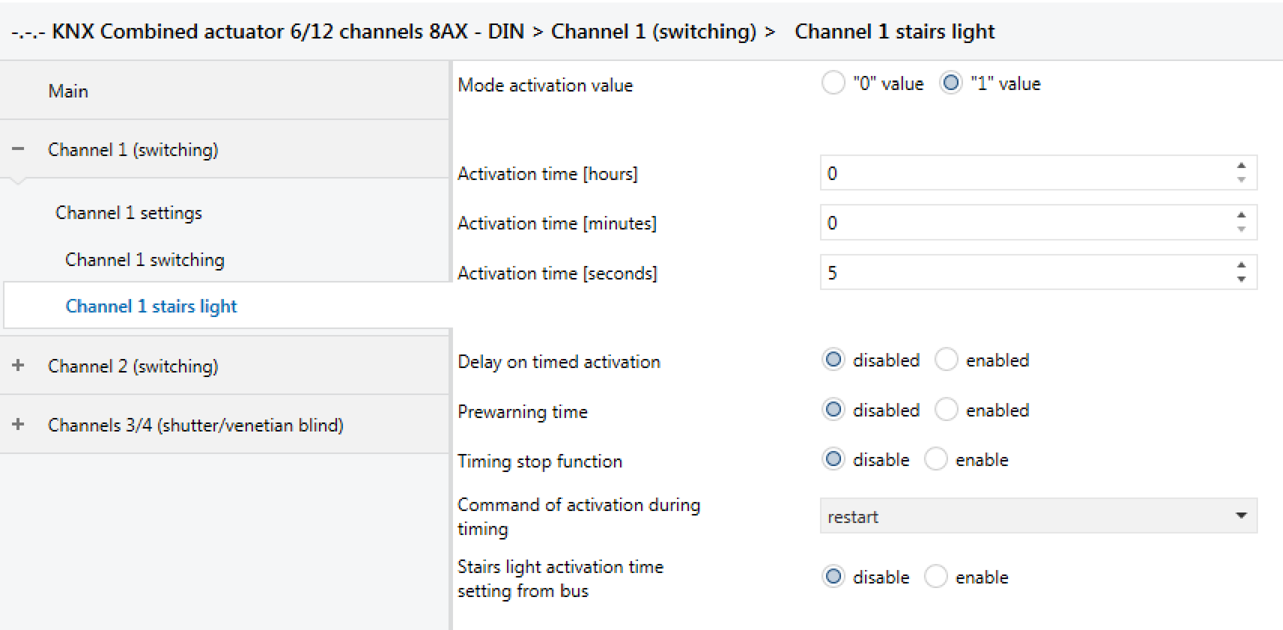


Fig. 7.1

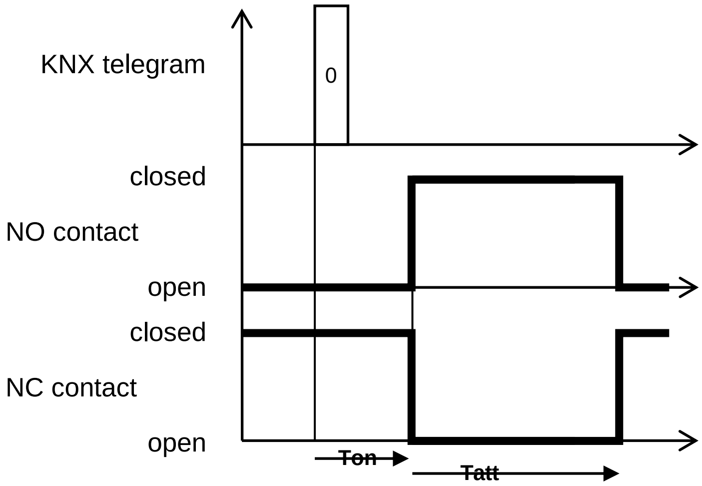
7.1 Parameters

7.1.1 Mode activation value

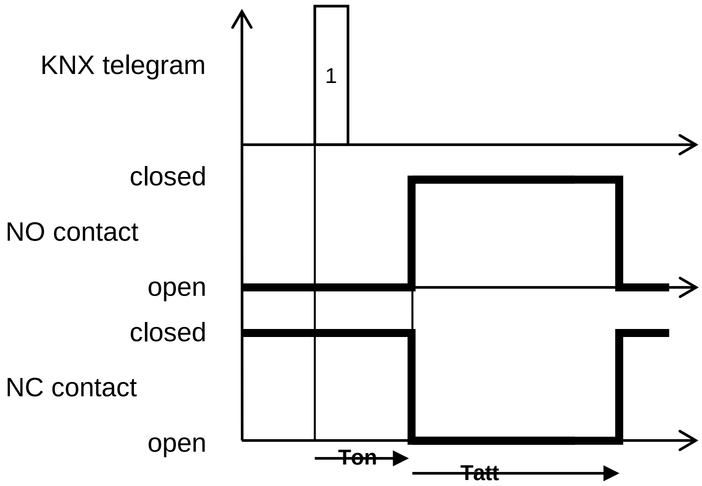
The parameter **“Mode activation value”** determines which logic value received on the communication object ***Ch.x – Timed switch*** switches the relay to the ON status (NO contact closed/NC contact open) and activates timing; The possible values are:

- “0” value
- **“1” value** **(default value)**

Selecting **“0” value**, when the device receives a telegram from the BUS with a logic value equal to “0”, after the set activation delay time (Ton) has passed it switches the relay to the status → NO contact closed/NC contact open and begins the activation time count. See figure below.



Selecting **“1” value**, when the device receives a telegram from the BUS with a logic value equal to “1”, after the set activation delay time (Ton) has passed it switches the relay to the status → NO contact closed/NC contact open. See figure below.



7.1.2 Activation time [hours] / [minutes] / [seconds]

The parameter **“Activation time [hours]”** is used to set the first of the three values (hours) that make up the load activation time (Tatt); The values that can be set are:

- from **0 (default value)** to 24, in steps of 1

The parameter **“Activation time [minutes]”** is used to set the second of the three values (minutes) that make up the load activation time (Tatt); The values that can be set are:

- from 0 to 59, in steps of 1, **1 (default value)**

The parameter **”Activation time [seconds]”** is used to set the last of the three values (seconds) that make up the load activation time (Tatt); The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

7.1.3 Delay on time activation

The parameter **“Delay on time activation”** is used to enter a delay between the moment in which the communication object ***Ch.x – Timed switch*** is received and the moment when the command is actually executed (NO contact closing/NC contact opening); The possible values are:

- **disabled (default value)**
- enabled

If the delay is **enabled**, the **“Timed activation delay length”** parameter will be displayed. This is used to set the value of the delay. The parameter may have the following values:

- **1 s (default value)**, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 30 s, 45 s, 1 min, 1 min 15 s, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 5 min, 15 min, 20 min, 30 min, 1 h, 2 h, 3 h, 5 h, 12 h, 24 h.

The activation delay cannot be reset.

7.1.4 Prewarning time

The **"Prewarning time"** parameter can be used to enable a signal when the load is about to be automatically switched off. This is done by deactivating and reactivating the load for a moment (blinking). The pre-warning time is applied after the expiration of the activation time. The parameter may assume the following values:

- **disabled (default value)**
- enabled

selecting the value **enabled**, displays the parameters **“Prewarning time length”** and **“Load deactivation time [x 100ms]”**.

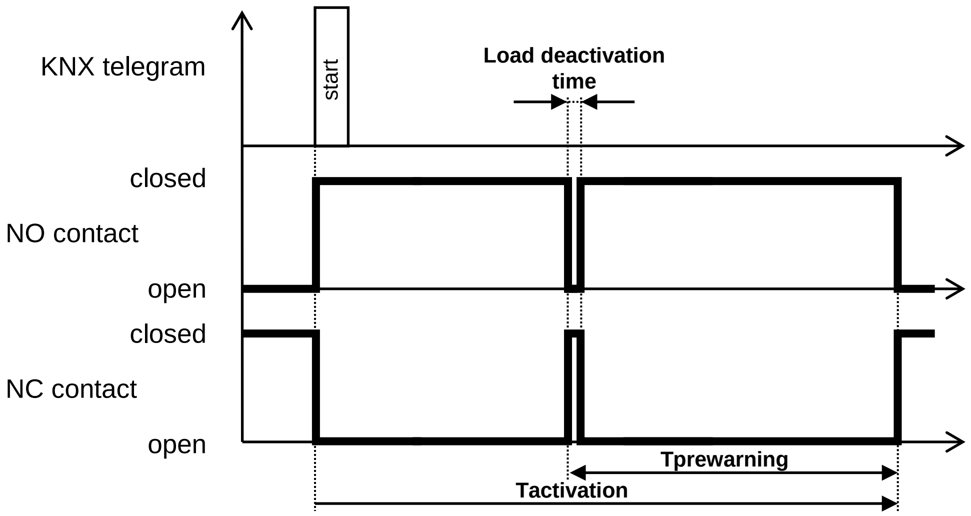
The parameter **“Prewarning time length”** is used to set the time that passes between the signalling that the deactivation will take place soon and the deactivation itself of the load; The possible values are:

- **15 s (default value)**, 30 s, 1 min.

The parameter **“Load deactivation time [x 100ms]”** is used to set the time interval during which the load is deactivated to perform the prewarning function; The values that can be set are:

- from **5 (default value)** to 15, in steps of 1

The below figure shows the operating principle of the pre-warning function.



7.1.5 Timing stop function

The parameter **“Timing stop function”** is used to enable the possibility of ending the timed activation by via a BUS command on the communication object ***Ch.x – Timed switch*** with the opposite value to the one set in the previously analysed **“Mode activation value”.** The possible values are:

- **disable** **(default value)**
- enable

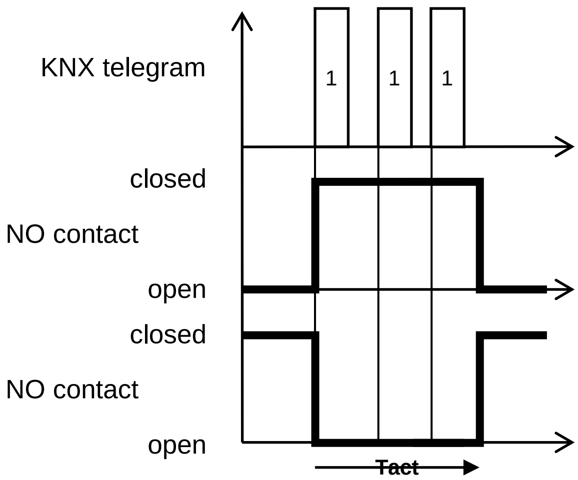
If the function is enabled, when the value opposite to the mode activation value is received, the device ends the timing and deactivates the load.

7.1.6 Command of activation during timing

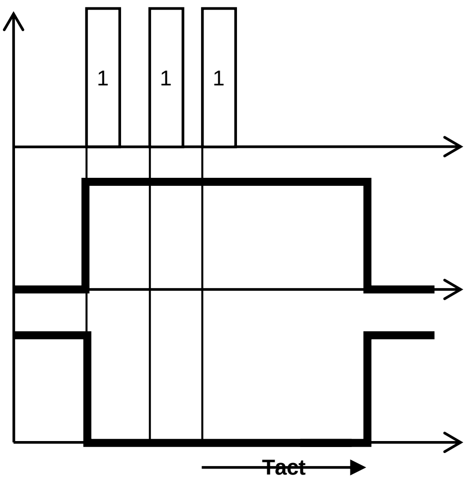
The parameter **“Command of activation during timing”** is used to define the behaviour of the device when a timed activation command is received while it is already in progress; The possible values are:

- no effect
- **restart** **(default value)**
- extension (multiply by factor)

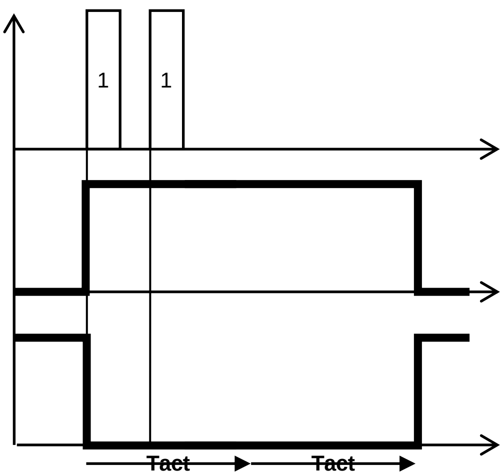
By selecting **no effect**, the subsequent commands are ignored. By selecting **reset**, each timed activation command received during the activation time count causes the count to reinitialise. By selecting **extension (multiply by factor)**, each received command results in an extension equal to the count activation time. The below figure shows an example of each of the three configurations.



no effect



restart



extension

If the value **extension** is selected, it is possible to set a maximum number of consecutive extensions of the activation time via the new displayed parameter **“Multiplicative factor maximum value”**. The parameter may have the following values:

- from 2 to **5 (default value)**, in steps of 1

7.1.7 Stairs light activation time setting from bus

The parameter **“Stairs light activation time setting from bus”** displays the input communication object ***Ch.x – Stairs light activation time*** (Data Point Type: 7.005 DPT_TimePeriodSec) which can be used to receive the activation time of the stair raiser light function via the BUS communication object; The possible values are:

- **disable (default value)**
- enable

As the activation time is between 0h:0min:1sec and 24h:59min:59sec, when the BUS receives a value that lies outside this interval, the value set for the deactivation delay time is the limit value of the interval that is closest to the received value.

If a new activation time value is received, this becomes the new stair raiser light time, overwriting the old value, which will be deleted; if the new value is received while the timing is already active, it will become operative upon the subsequent activation of the timing.

8 *“Channel X blinking” menu (Switching function)*

One of the relay output operating modes is the blinking mode, which activates the load for a specific period of time, then deactivates it and repeats the process until the deactivation command is received. From the BUS, this operating mode can be controlled via the communication object ***Ch.x - Blinking*** (Data Point Type: 1.001 DPT_Switch). This function has the same priority as the on/off switching, delayed activation/deactivation, and timed activation functions; this means that when one of the functions is activated while another is already active, it is executed, ending the previously active one.
The menu is visible if the **“Blinking function”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

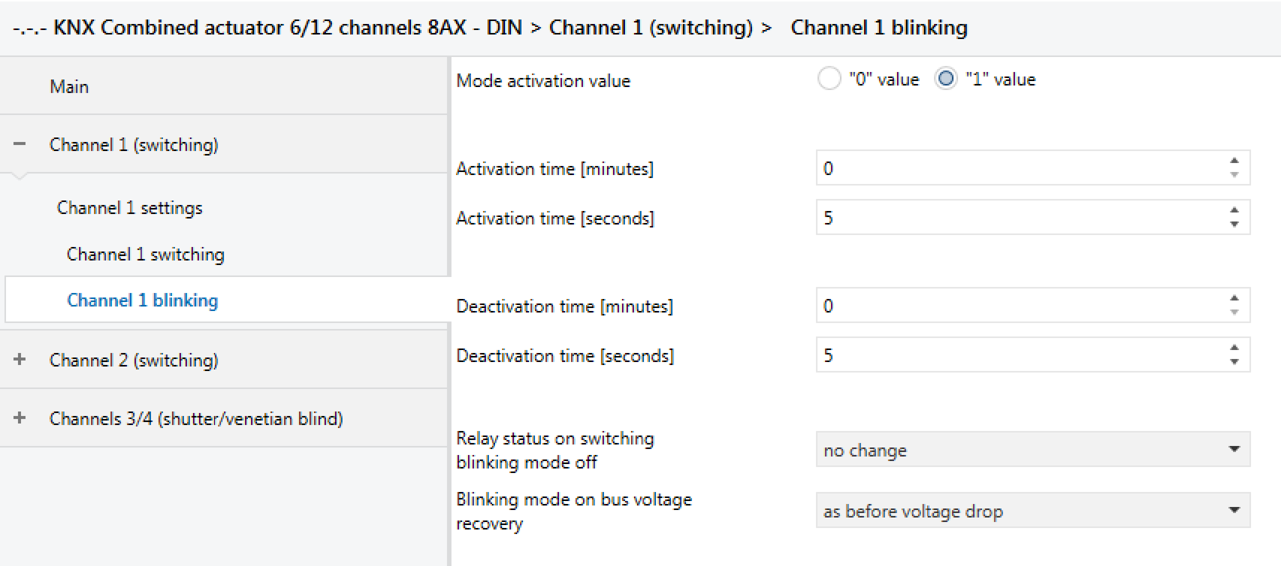


Fig. 8.1

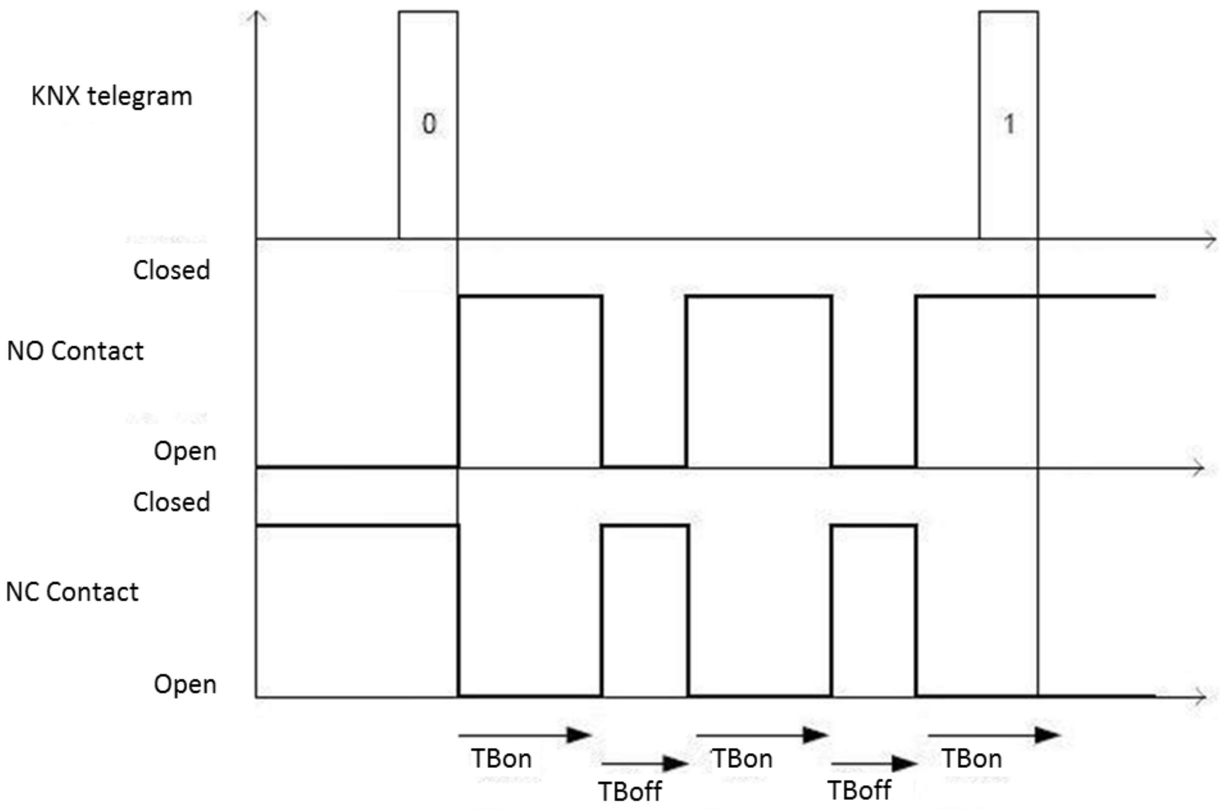
8.1 Parameters

8.1.1 Mode activation value

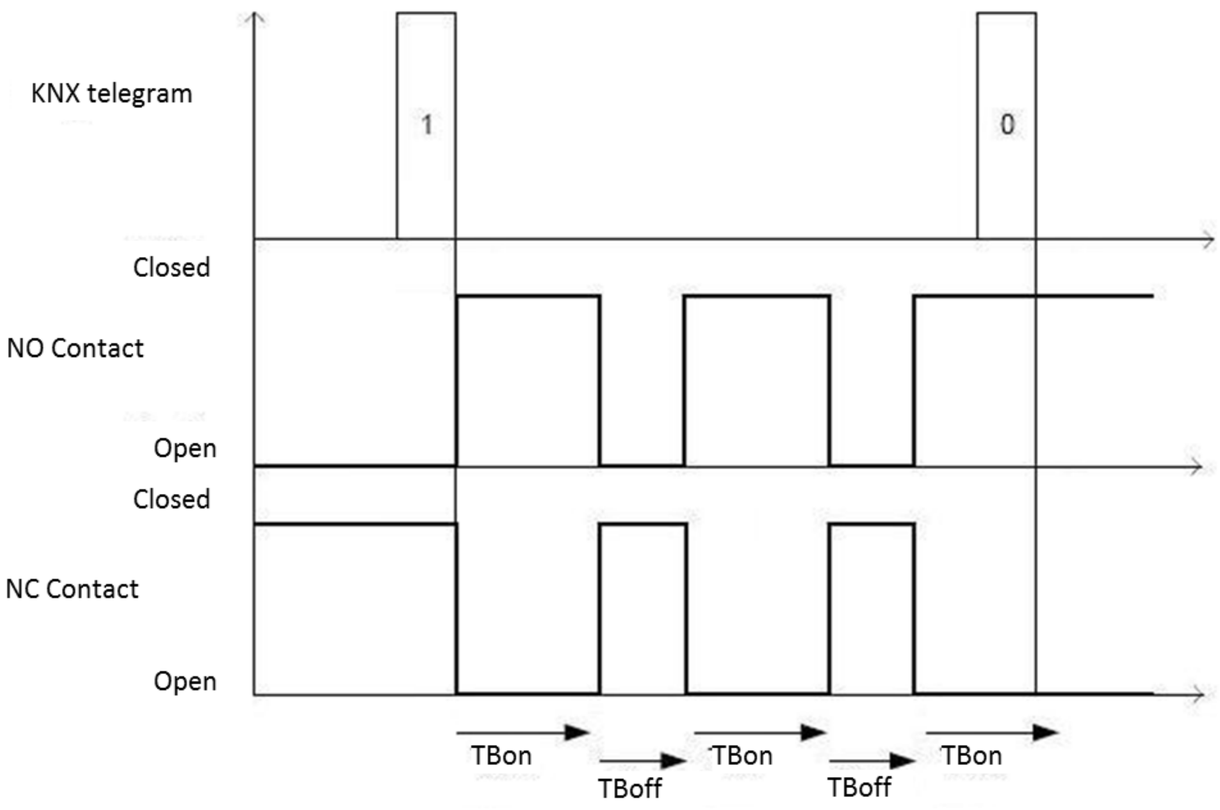
The parameter **“Mode activation value”** determines which logic value received on the communication object ***Ch.x - Blinking*** activates the load activation/deactivation process; The possible values are:

- “0” value
- **“1” value** **(default value)**

If you select **value “0”**, then when the device receives a telegram from the BUS with a logic value equal to “0”, it switches the relay to the status → NO contact closed/NC contact open, and begins the activation time count; At the end of the activation time, the device deactivates the load (NO contact open/NC contact closed) for a period of time equal to the deactivation time, and then reactivates the load and restarts the process. See the following figure for more information.



If you select **value "1"**, then when the device receives a telegram from the BUS with a logic value equal to "1", it switches the relay to the status → NO contact closed/NC contact open, and begins the activation time count; At the end of the activation time, the device deactivates the load (NO contact open/NC contact closed) for a period of time equal to the deactivation time, and then reactivates the load and restarts the process. See the following figure for more information.



8.1.2 Activation/Deactivation time [minutes] / [seconds]

The parameter **“Activation time [minutes]”** is used to set the first of the two values (minutes) that make up the load activation time (TLon); The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

The parameter **”Activation time [seconds]”** is used to set the last of the two values (seconds) that make up the load activation time (TLon); The values that can be set are:

- from 0 to 59, in steps of 1, **5 (default value)**

The parameter **“Deactivation time [minutes]”** is used to set the first of the two values (minutes) that make up the load deactivation time (TLoff); The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

The parameter **”Deactivation time [seconds]”** is used to set the last of the two values (seconds) that make up the load deactivation time (TLoff); The values that can be set are:

- from 0 to 59, in steps of 1, **5 (default value)**

8.1.3 Relay status on switching blinking mode off

You can use the **“Relay status on switching blinking mode off”** parameter to define the status of the relay contact when a blinking mode deactivation command is received. It can have the following values:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- **no change** **(default value)**

By selecting **no change**, the status of the contact remains the one assumed when the mode deactivation command was received.

8.1.4 Blinking mode on bus voltage recovery

The **”Blinking mode on bus voltage recovery”** parameter defines the blinking mode status when the BUS voltage is reset. The values that can be set are:

- deactivated
- active
- **as before voltage drop** **(default value)**

By selecting **active**, if no function with a higher priority than the blinking mode is active, the device will start the blinking phase, ignoring the value set for the **“Relay status after bus voltage recovery”** item in the **Channel x settings** menu.

9 *“Channel X scenes” menu (Switching function)*

The scenes function is used to replicate a certain pre-set or previously memorised status upon receipt of the scene execution command; from the BUS, this function can be controlled via the communication object ***Ch.x - Scene*** (Data Point Type 18.001 DPT_SceneControl). The device is able to memorise and execute 8 scenes.
The menu is visible if the **“Scenes function”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

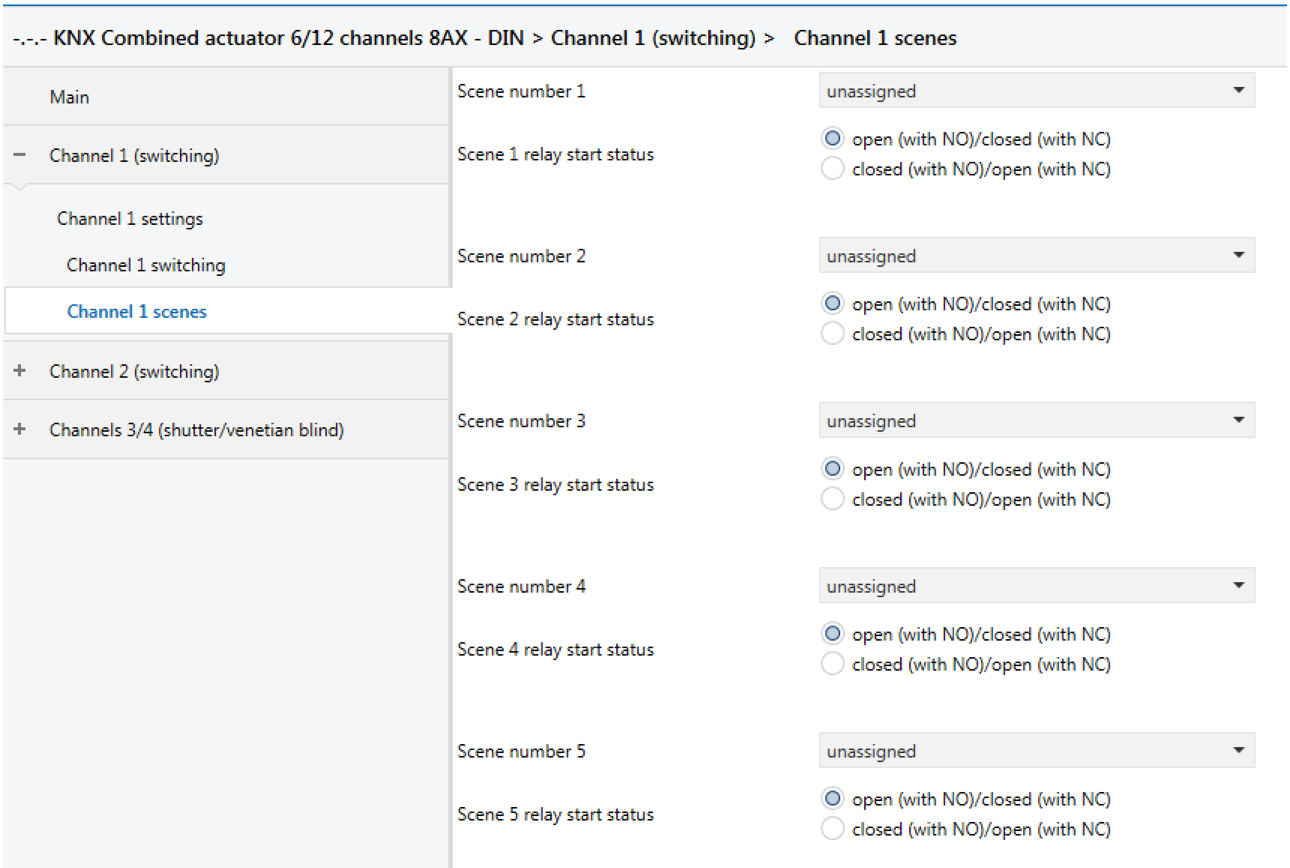


Fig. 9.1

9.1 Parameters

9.1.1 Scene number i

With the **“Scene number i”** (1 ≤ i ≤ 8) parameters, it is possible to set the numerical value for identifying and therefore executing/memorising the i-th scene. The possible values are:

- **unassigned** **(default value)**
- 0, 1.. 63

9.1.2 Scene i relay start status

The parameters **"Scene i relay start status"** (1 ≤ i ≤ 8) are used to preset the status of the contact that the device must replicate after receiving a telegram for the execution of the i-th scene. The possible values are:

- **open (with NO)/closed (with NC)** **(default value)**
- closed (with NO)/open (with NC)

9.1.3 Scenes storing enabling

The parameter **"Scene storing enabling"** makes it possible to enable/disable the possibility of scene learning via the communication object ***Ch. x - Scene.*** The parameter may assume the following values:

- disable
- **enable** **(default value)**

Selecting the value **enable** displays the ***Ch.x - Scene storing enabling*** communication object (Data Point Type: 1.003 DPT_Enable) which enables or disables (via BUS) the possibility of scene learning via the communication object ***Ch.x - Scene***.

10 *“Channel X Logic” menu (Switching function)*

Load activation/deactivation can be subordinated on the basis of the results of logic operations whose inputs are their communication objects. The menu is visible if the **“Logic function”** parameter of the **Channel x - settings** menu is set with the value **active**.

If it is enabled, the following menu structure appears:

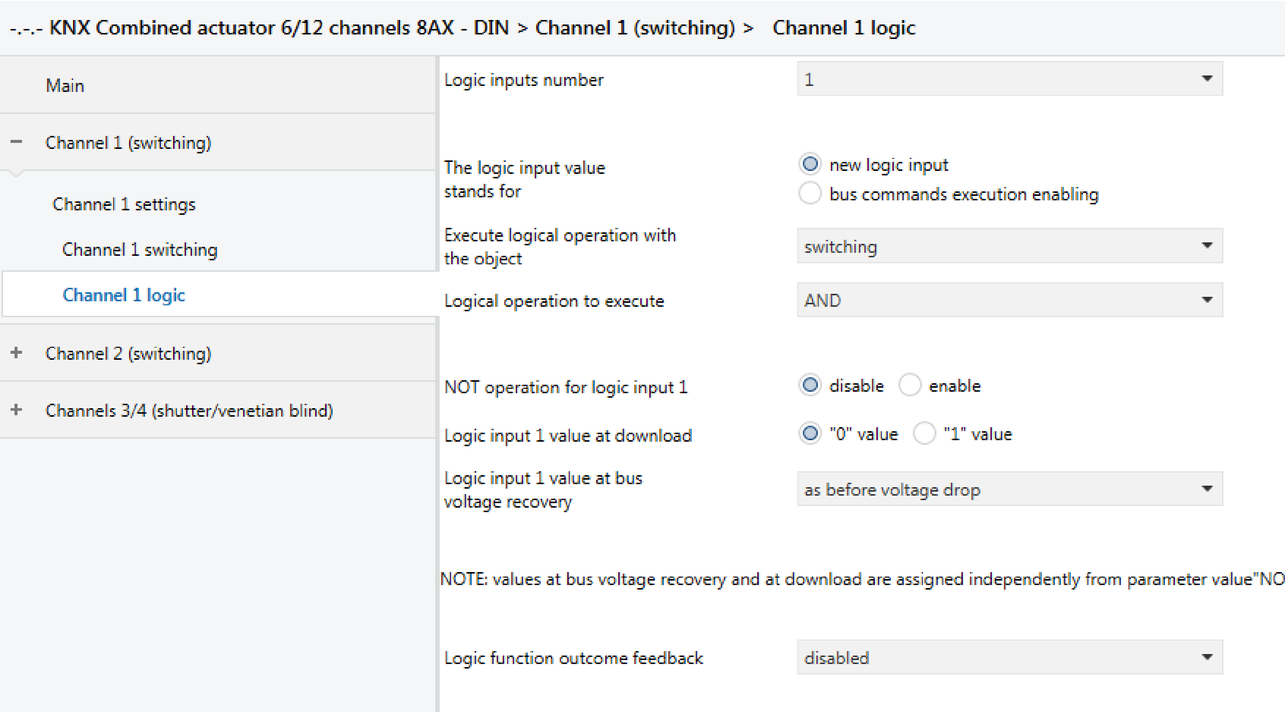


Fig. 10.1

10.1 Parameters

10.1.1 Logic inputs number

It is possible to set the number of logic inputs via the parameter **”Logic inputs number”** which can assume the following values:

- **1** (default value), 2, 3, 4

Depending on the value selected, the ***Ch.x - Logic input 1***, ***Ch.x - Logic input 2***, ***Ch.x - Logic input 3*** or ***Ch.x - Logic input 4*** communication object will be displayed.

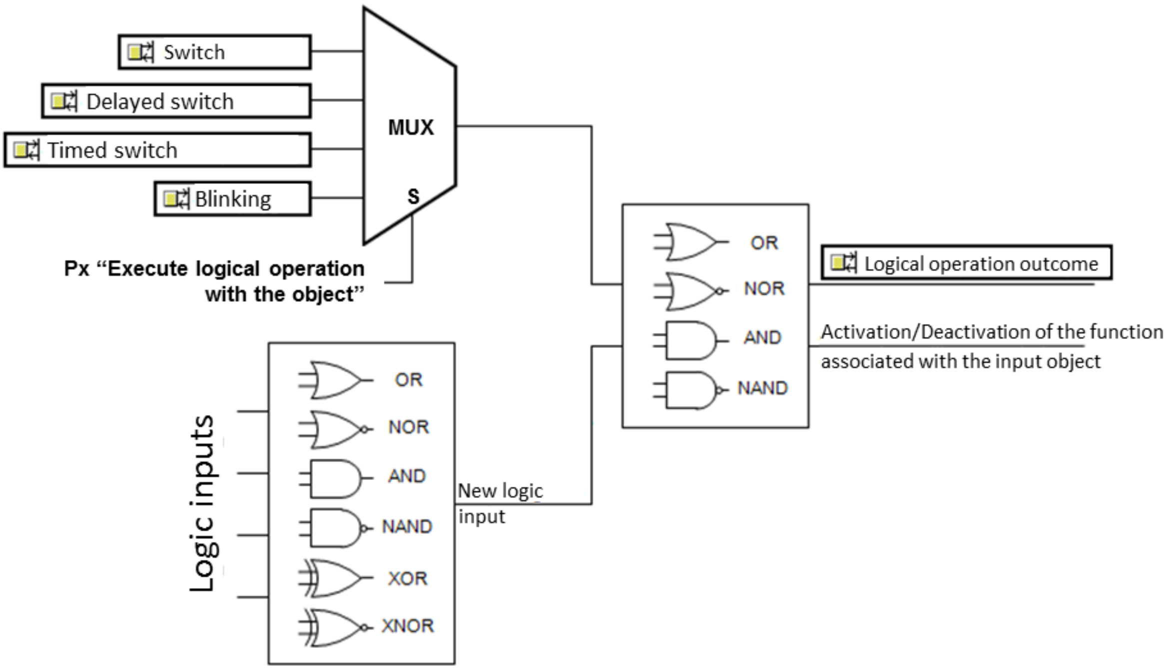
10.1.2 Operation between logic inputs

If the set value is not **1**, it is possible to set the logic operation to be executed between the logic inputs. The operation is selected using the **“Operation between logic inputs”** parameter, which can assume the following values:

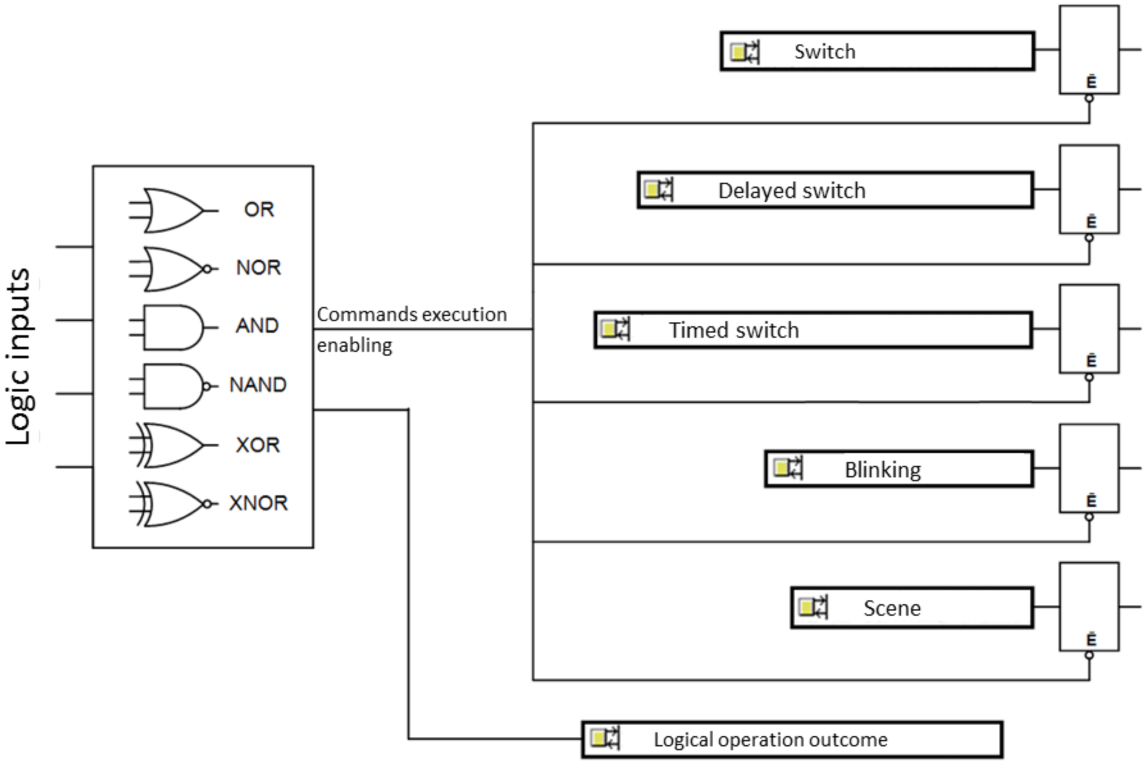
- **AND** **(default value)**
- OR
- NAND
- NOR
- XOR
- XNOR

The outcome of the operations between logic inputs (or the value of the individual logic input, if only one logic input was set) can be used as follows:

1 as the input of another logic operation, executed with one of the following objects ***Ch.x - Switch***, ***Ch.x – Timed switch***, ***Ch.x – Delayed switch*** and ***Ch.x - Blinking***



2 to enable the execution of commands received via the BUS on the ***Ch.x - Switch***, ***Ch.x – Timed switch***, ***Ch.x – Delayed switch, Ch.x - Blinking*** and ***Ch.x - Scene*** objects



10.1.3 The outcome of the operation with logic inputs stands for

The parameter for choosing the function of the result of the operation between logic inputs is **"The outcome of the operation with logic inputs stands for"**. In the case of a single logic input, it is replaced by the **"The logic input value stands for"** parameter. These parameters can assume the following values:

- **new logic input** **(default value)**
- bus commands execution enabling

If the value **new logic input** is selected (case 1), you can use the **"Execute logical operation with the object"** parameter to define which object should be used to execute the new logic operation, whereas the **"Logical operation to execute"** parameter indicates the logic operation to be executed with the selected object.

10.1.4 Execute logical operation with the object

The parameter **"Execute logical operation with the object"** can assume the following values:

- **switching** **(default value)**
- delayed switching
- timed switch
- blinking

The function matched with the selected object will be activated/deactivated depending on the result of the logic. EXAMPLE: selecting the "blinking" object and the function has been enabled in ETS, when the logic is true, then the blinking function is activated, whereas if the logic is false, blinking is stopped.
if the function is not activated, the logic will not have any effect on the load connected to the output.

10.1.5 Logical operation to execute

The parameter **"Logical operation to execute"** can assume the following values:

- **AND** **(default value)**
- OR
- NAND
- NOR

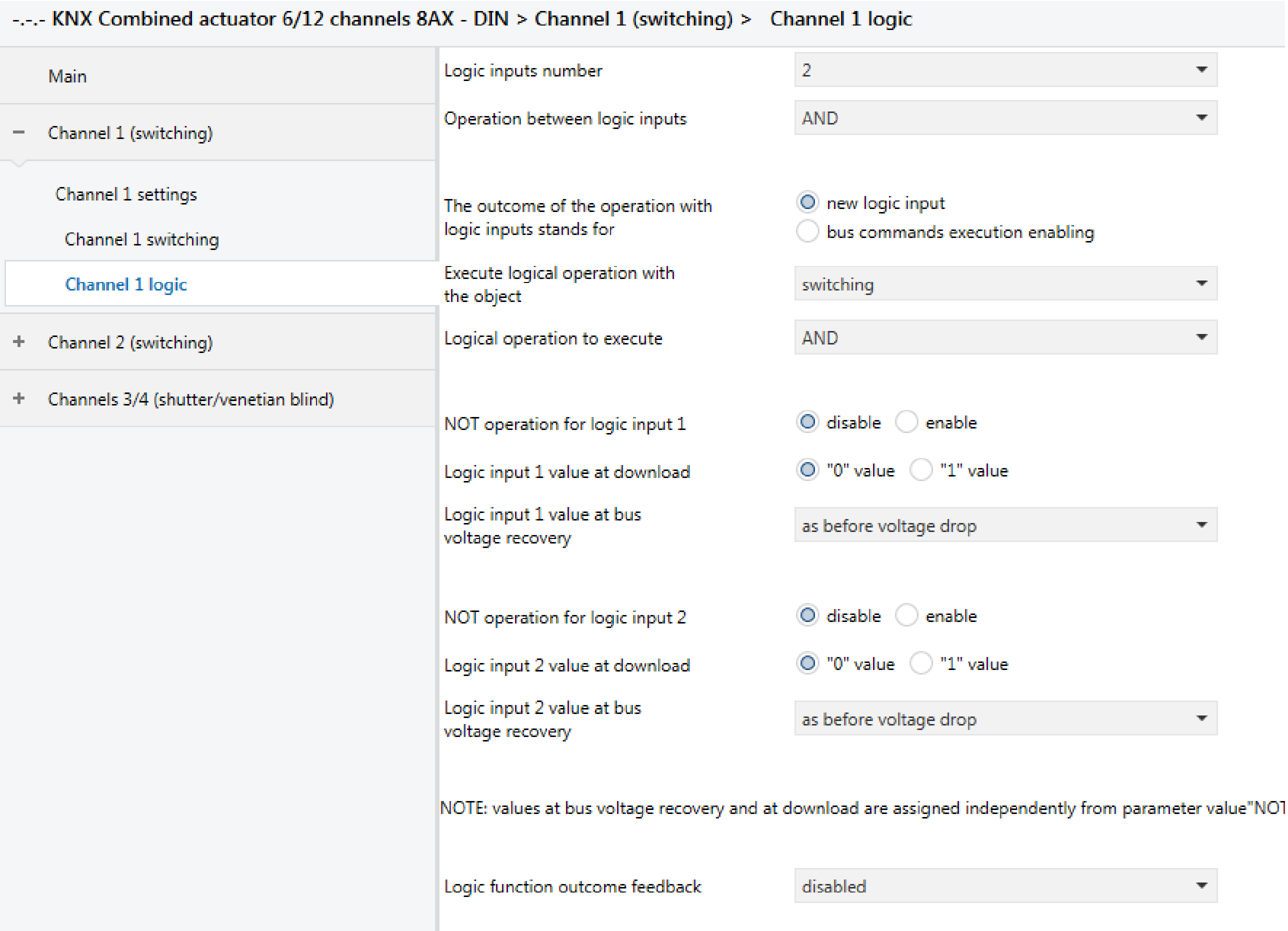


Fig. 10.2: “Channel x” section - “Channel x logic” menu - case 1

If the value **bus command execution enabling** is selected (case 2), a series of parameters appear that are used to set which commands received from the BUS require enabling to be executed; The parameters in question are **“Switching (on/off) commands”**, **“Delayed switching commands”**, **“Timed activation commands”**, **“Blinking switching on/off commands”** and **“Scene commands”**, and they can have the following values:

- **independent from logic function** **(default value)**
- enabled by logic function

The commands enabled by the logic function are only executed if the outcome of the logic operation is true. If the outcome of the logic operation changes from false to true, the commands received after the status change will be executed. The commands received when the outcome of the logic function is false are ignored.

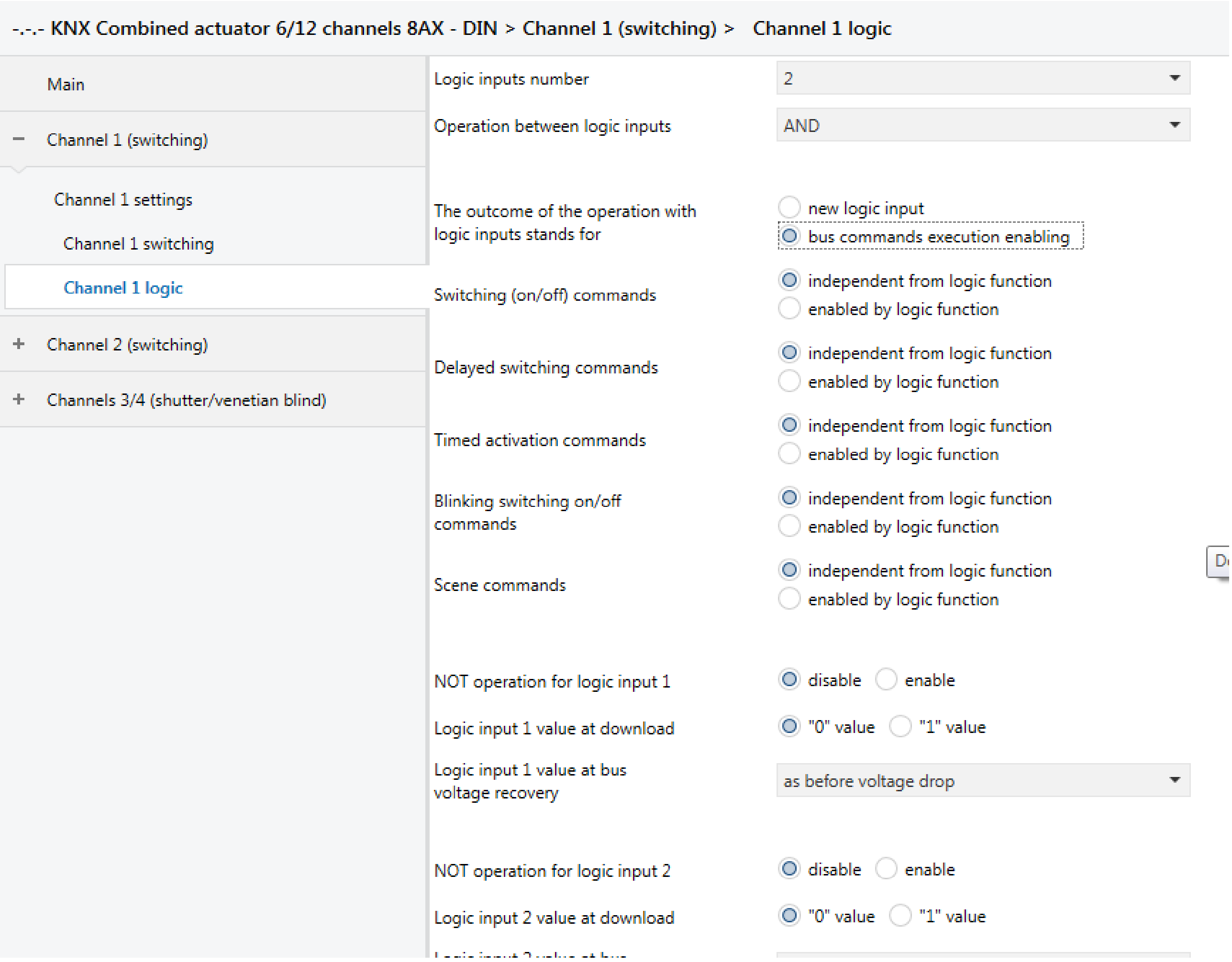


Fig. 10.3: “Channel x” section - “Channel x logic” menu - case 2

10.1.6 NOT operation for logic input X

It is possible to refuse the value received from the BUS on the communication objects associated with the logic inputs via the parameters **“NOT operation for logic input X”** (displayed or not, depending on the number of enabled logic inputs), which can have the following values:

- **disable** **(default value)**
- enable

10.1.7 Logic input X value at download

It is possible to set the value of the logic inputs at ETS download via the parameters **“Logic input X value at download** (displayed depending on the number of enabled logic inputs), which can have the following values:

- **“0” value** **(default value)**
- “1” value

10.1.8 Logic input X value at bus voltage recovery

It is possible to set the value of the logic inputs in the case of BUS power supply voltage recovery via the parameters **“Logic X input value at bus voltage recovery”** (displayed depending on the number of enabled logic inputs), which can have the following values:

- “0” value
- “1” value
- **as before voltage drop (default value)**

If you select **as before voltage drop**, the device will reset the values in place prior to the voltage drop, and send the status read requests on the ***Ch.x - Logic input 1***, ***Ch.x - Logic input 2***, ***Ch.x - Logic input 3*** and ***Ch.x - Logic input 4*** objects in order to be updated with the field.

NOTE: the values on BUS voltage reset and after downloading are assigned to the logic objects regardless of the value of the **“NOT operation for logic input i”** parameters (1<i<8).

10.1.9 Logic function outcome feedback

Finally, it is possible to enable the sending of the outcome of the logic function on the BUS, and specify whether this information should always be sent when an input changes, or only if the outcome of the logic function changes via the **“Logic function outcome warning”**parameter, which can have the following values:

- **disabled (default value)**
- only if outcome changes
- even if outcome doesn’t change

Setting a value other than **disabled**, displays the output communication object ***Ch.x – Logical operation outcome*** (Data Point Type: 1.002 DPT_Bool).
The value transmitted on the BUS is:

a) the result of the operation between the outcome of the operation with logic inputs and the object selected in the parameter **“Execute logical operation with the object”** if the value of the parameter **“The outcome of the operation with logic inputs stands for”** is **new logic input**

b) the result of the operation between logic inputs if the value of the parameter is **bus commands execution enabling.**

11 *“Channel X Safety” menu (Switching function)*

The safety function allows the output to function under normal conditions until certain set conditions occur (no periodic reception, reception of particular data from the BUS), after which the device forces the status of the relay to a specific condition; to deactivate the safety function, the normal operation conditions must be reset. Any command that is received (excluding the block activation and forced positioning activation command) during a period when the safety is activated will not be executed as it has priority over any other BUS command, with the exception of the block and forced positioning functions.
The communication object used to monitor the operating conditions is the **Ch.x - Safety** object.
The device signals the activation status of the safety function via the communication object ***Ch.x - Safety*** regardless of whether or not functions with a higher priority are active. The communication object is sent on request, when the BUS voltage is recovered, and spontaneously on change of the function activation status.
The ***Ch.x – Safety*** object is therefore an input/output object. With KNX technology, a communication object is sent to a single destination group address, so if this object is associated with more than one group address, the device will send the BUS telegram to the group address where the object has the “S” (sending) flag. Vice versa, the device will update its value when a BUS telegram is received on any group address associated with the object, regardless of the “S” flag.

The menu is visible if the **“Safety function”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

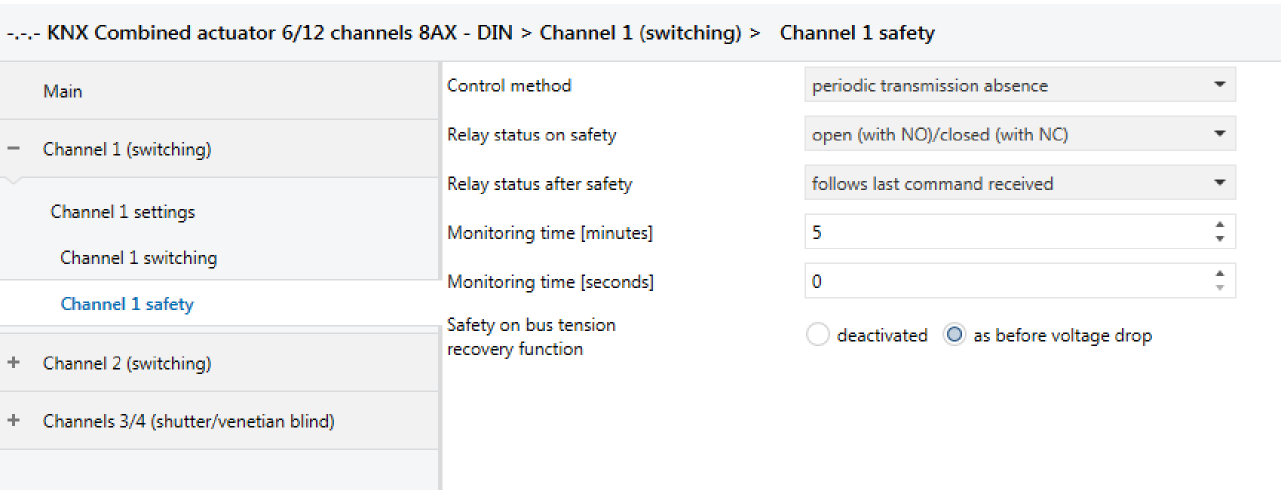


Fig. 11.1

11.1 Parameters

11.1.1 Control method

The parameter **“Control method”** is used to define the conditions for which the device activates the safety function; unlike the process for the ***Block*** and ***Forced positioning*** functions, which are activated via a BUS command, the safety function is enabled by the device when the conditions set in the reference parameter occur. The values that can be set are:

- “1” value or periodic transmission absence
- “0” value or periodic transmission absence
- **periodic transmission absence** **(default value)**

By selecting **“1” value or periodic transmission absence**, the safety function is activated following two events:

- the ***Ch.x - Safety*** communication object no longer receives the telegram with logic value “0” (no periodic transmission) for a period equal to the time represented by the values set in the parameters **“Monitoring time [minutes]”** and **“Monitoring time [seconds]”**.
- if the ***Ch.x - Safety*** communication object receives a telegram with the logic value “1” (value “1” received).

In both cases, the safety function is deactivated when the communication object ***Ch.x - Safety*** receives a telegram with logic value “0”; once safety is deactivated, the monitoring time is restarted.

By selecting **value “0” or periodic transmission absence**, the safety function is activated following two events:

- the ***Ch.x - Safety*** communication object no longer receives the telegram with logic value “1” (no periodic transmission) for a period equal to the time represented by the values set in the parameters **“Monitoring time [minutes]”** and **“Monitoring time [seconds]”**.
- a telegram with the logic value “0” (value “0” received) is received on the ***Ch.x - Safety*** communication object.

In both cases, the safety function is deactivated when the communication object ***Ch.x - Safety*** receives a telegram with logic value “1”; once safety is deactivated, the monitoring time is restarted.

If you select **periodic transmission absence**, the safety function is activated when no telegrams are received on the ***Ch.x - Safety*** communication object for a time equal to the total time set in the **“Monitoring time [minutes]”** and **“Monitoring time [seconds]”** parameters, regardless of the telegram value itself.
The safety function is deactivated when the communication object ***Ch.x - Safety*** receives a telegram with logic value “0” or "1"; once safety is deactivated, the monitoring time is restarted.

11.1.2 Relay status on safety

The **“Relay status on safety”** parameter is used to set the status of the contact when the safety function is active. The values that can be set are:

- **open (with NO)/closed (with NC)** **(default value)**
- closed (with NO)/open (with NC)
- no change

11.1.3 Relay status after safety

When normal operating conditions are restored (safety deactivation), the status to which the actuator switches the relay is defined by the parameter **“Relay status after security”**. The possible values are:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- no change
- **follows last command received** **(default value)**
- as before safety activation

By selecting the value **follows last command received**, the output follows the dynamics determined by the last command, as if the execution of the command was initiated at the moment in which it was effectively received. Essentially, the command is executed in the background and is applied to the output in the moment in which safety is ended. This behaviour applies, for example, to timed actuation commands with timing that has a duration that goes beyond the moment of safety deactivation or commands with delayed activation/deactivation.

11.1.4 Monitoring time [minutes] / [seconds]

The **“Monitoring time [minutes]”** parameter is used to set the first of the two values (minutes) that make up the time after which the device activates the safety function if it has not received the expected telegram (periodic transmission absence). The values that can be set are:

- from 0 to 59, in steps of 1, **5 (default value)**

The parameter **“Monitoring time [seconds]”** is used to set the second of the two values (seconds) that make up the time that must pass after which the device will activate the safety if it does not receive the expected telegram (no periodic transmission); The values that can be set are:

- from **0 (default value)** to 59, in steps of 1

NOTE: Setting a monitoring time equal to **0 minutes** and **0 seconds**, the monitoring of the object ***Ch.X - Safety*** is not performed and the lack of periodic transmission on the object does not activate the function.

11.1.5 Safety on bus tension recovery function

The parameter **“Safety on bus tension recovery function”** is used to determine the status of the security function on BUS voltage recovery. This parameter is useful if the function is active when the BUS voltage drops and you want to have the output behaviour not to be changed after voltage failure. The parameter may assume the following values:

- deactivated
- **as before voltage drop (default value)**

If the value **deactivated** is selected (and safety was activated before the BUS voltage drop), when the BUS voltage is recovered the safety function will be deactivated and the relay will take on the value determined by the parameter **“Relay status after safety”**. If the value set for the latter parameter is **follows last command received**, the output will execute the last command received prior to the BUS voltage drop, so the command must be stored to the non-volatile memory.If the last command received before voltage drop is a timed activation or activation delay command, when the BUS voltage is recovered the command will not be executed and the relay will switch to the open (with NO)/closed (with NC) status.
If the **as before voltage drop** value is selected (and the safety was activated before the BUS voltage drop), when the BUS voltage is reset the safety function will be reactivated and the relay will switch to the conditions set by the parameter **“Relay status on safety”**.

12 *“Channel X Forced positioning” menu (Switching function)*

It is possible to force the relay status in a certain (settable) condition after receiving the communication object ***Ch. x - Priority command*** (Data Point Type: 2.001 DPT_Switch_Control) which activates the forced positioning function; until this is deactivated, any command received on all other input communication objects will not be executed (with the exception of commands received on the ***Ch.x - Block*** object). The forced positioning function has the highest priority over all others with the exception of the Block function.
The device signals the activation status of the forced positioning function via the communication object ***Ch.x - Priority command*** regardless of whether or not functions with a higher priority are active. The communication object is sent on request, when the BUS voltage is recovered, and spontaneously. It is sent spontaneously when the status passes from "activate forced positioning ON" to "activate forced positioning OFF" or "deactivate forced positioning", and vice versa.
The ***Ch.x - Priority command*** object is therefore an input/output object. With KNX technology, a communication object is sent to a single destination group address, so if this object is associated with more than one group address, the device will send the BUS telegram to the group address where the object has the “S” (sending) flag. Vice versa, the device will update its value when a BUS telegram is received on any group address associated with the object, regardless of the “S” flag.

The menu is visible if the **“Forced positioning function”** parameter of the **Channel x - settings** menu is set with the value **active**.
.

The structure of the menu is as follows:

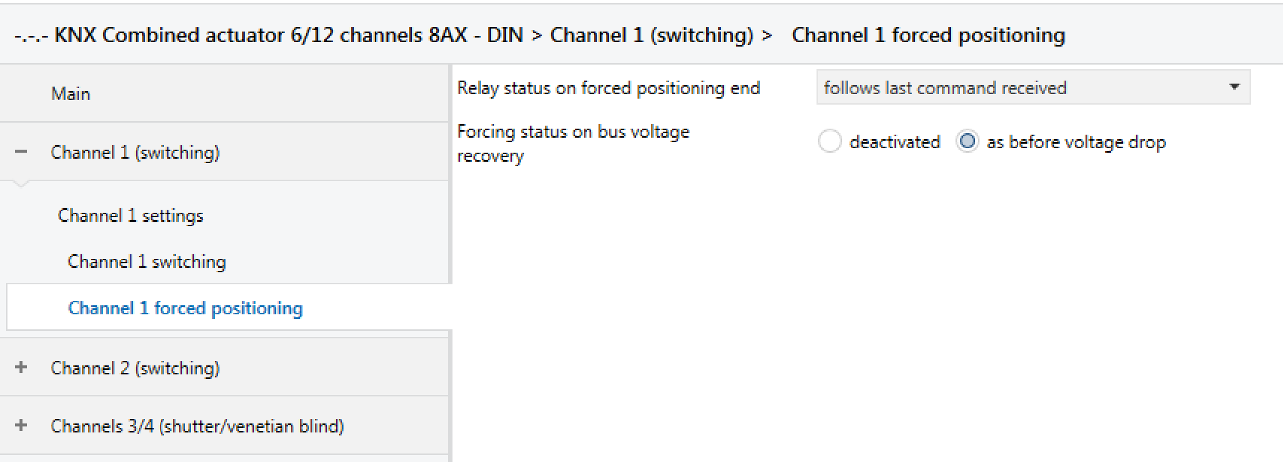


Fig. 12.1

The semantics of the command received from the BUS (via the 2 bit object ***Ch.x – Priority command”)*** follow what is shown in the table below:

bit 1	bit 0	
0	0	Forced positioning deactivation
0	1	Forced positioning deactivation
1	0	Forced positioning OFF
1	1	Forced positioning ON

When a priority command is received with the forced positioning activation ON value, the actuator switches the relay, closing the NO contact or opening the NC contact. Vice versa, when a priority command is received with the forced positioning activation OFF value, the actuator switches the relay, opening the NO contact or closing the NC contact.

12.1 Parameters

12.1.1 Relay status on forced positioning end

Upon receipt of the forced positioning deactivation command, the status to which the output switches the relay is defined by the parameter **“Relay status on forced positioning end”**. The possible values are:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- no change
- **follows last command received** **(default value)**
- as before forcing activation

If the parameter assumes the value **follow last command received**, the output follows the dynamics determined by the last command as if the execution of the command was initiated at the moment in which it was effectively received. Essentially, the command is executed in the background and is applied to the output in the moment in which forced positioning is ended. This behaviour applies, for example, to timed actuation commands with timing that has a duration that goes beyond the moment of forced positioning deactivation or commands with delayed activation/deactivation.

12.1.2 Forcing status on bus voltage recovery

The **“Forcing status on bus voltage recovery”** parameter is used to determine the status of the forced positioning function when the BUS voltage is reset. This parameter is useful if the function is active when the BUS voltage drops and you want to have the output behaviour not to be changed after voltage failure.
The parameter may assume the following values:

- deactivated
- **as before voltage drop** **(default value)**

If the **deactivated** value is selected (and the forced positioning was activated before the BUS voltage drop), when the BUS voltage is reset the forced positioning function will be deactivated and the relay will take on the value determined by the **“Relay status on forced positioning end”** parameter. If the value set for the latter parameter is **follows last command received**, the actuator will execute the last command received prior to the BUS voltage drop, so the command must be stored to the non-volatile memory.If the last command received before voltage drop is a timed activation or activation delay command, when the BUS voltage is recovered the command will not be executed and the relay will switch to the open (with NO)/closed (with NC) status.
If the value **as before voltage drop** is selected (and forced positioning was activated before BUS voltage drop), when the BUS voltage is recovered the forced positioning function is reactivated and the relay switches to the status prior to the voltage drop.

If a forced positioning deactivation command is received and the **Relay status on forced positioning end”** parameter assumes the value **follows last command received**, the actuator executes the last command received before the BUS voltage drop (which, as a result, must be stored in the non-volatile memory). If the last command received before voltage drop is a timed activation or activation delay command, when the BUS voltage is recovered the command will not be executed and the relay will switch to the open (with NO)/closed (with NC) status.

13 *“Channel X Block” menu (Switching function)*

It is possible to block the device in a certain (settable) condition after receiving the communication ***Ch. x - Block*** (Data Point Type: 1.003 DPT_Enable) which activates the block function; until it is deactivated, any command received on all other input communication objects will not be executed. The block function is the function with the highest priority.
The device always signals the activation status of the block function via the communication object ***Ch.x - Block***. The communication object is sent on request, when the BUS voltage is recovered, and spontaneously on change of the function activation status.
The ***Ch.x – Block*** object is therefore an input/output object. With KNX technology, a communication object is sent to a single destination group address, so if this object is associated with more than one group address, the device will send the BUS telegram to the group address where the object has the “S” (sending) flag. Vice versa, the device will update its value when a BUS telegram is received on any group address associated with the object, regardless of the “S” flag.

The menu is visible if the **“*Block function*”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

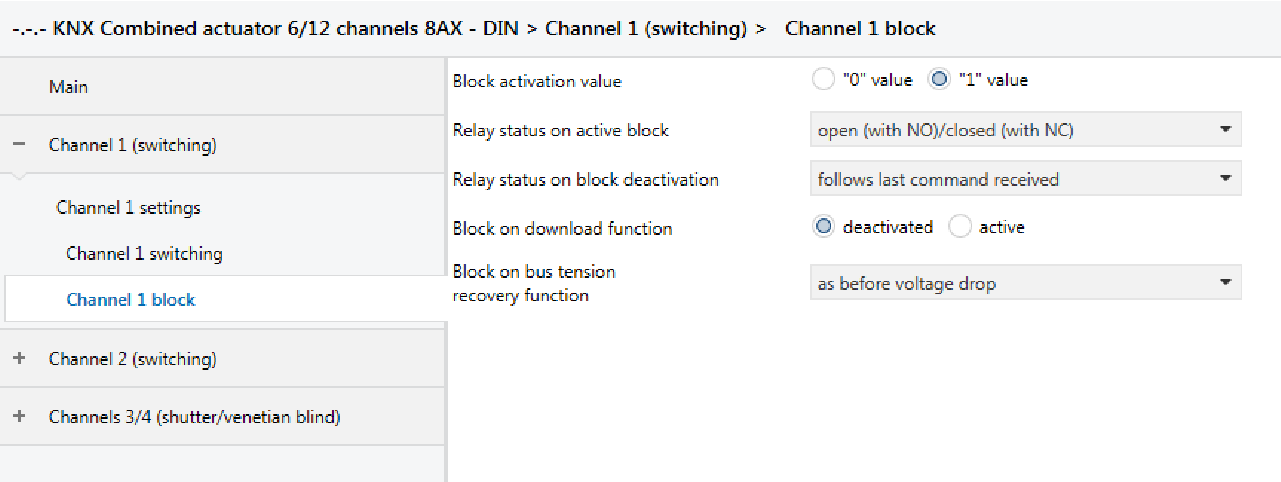


Fig. 13.1

13.1 Parameters

13.1.1 Block activation value

The **“Block activation value”** parameter determines which logic value activates the actuator block function. The possible values are:

- “0” value
- **“1” value (default value)**

13.1.2 Relay status on active block

The **“Relay status on active block”** parameter is used to set the status that the contact must assume when the block function is activated. The possible values are:

- **open (with NO)/closed (with NC)**

- closed (with NO)/open (with NC)
- no change

13.1.3 Relay status on block deactivation

The **"Relay status on block deactivation"** parameter is used to set the status that the contact must assume when the block function is deactivated. The possible values are:

- open (with NO)/closed (with NC)
- closed (with NO)/open (with NC)
- no change
- **follows last command received** **(default value)**
- as before block activation

If the parameter assumes the value **follows last command received**, the output follows the dynamics determined by the last command as if the execution of the command was initiated at the moment in which it was effectively received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated. This behaviour applies, for example, to timed actuation commands with timing that has a duration that goes beyond the moment of block deactivation or commands with delayed activation/deactivation.

13.1.4 Block on download function

The **"Block on download function"** parameter sets the block function status after downloading the application from ETS. The possible values are:

- **deactivated** **(default value)**
- active

13.1.5 Block on bus tension recovery function

The parameter **"Block on bus tension recovery function"** is used to set the status of the block function after the BUS power supply voltage is recovered. The possible values are:

- deactivated
- active
- **as before voltage drop** **(default value)**

If you select **deactivated** (and the block function was activated before the BUS voltage drop), when the BUS voltage is reset the block function will be deactivated and the relay will take on the value determined by the **"Relay status on block deactivation"** parameter. If the value set for this last parameter is **follows last command received**, the output will execute the last command received before the BUS voltage drop that, as a result, must be stored to the non-volatile memory. If the last command received before voltage drop is a timed activation or activation delay command, when the BUS voltage is recovered the command will not be executed and the relay will switch to the open (with NO)/closed (with NC) status.
If you select **as before voltage drop** (and the block function was activated before the BUS voltage drop), when the BUS voltage is reset the block function will be reactivated and the relay will assume the conditions set in the **"Relay status on active block"** parameter.

14 *“Channel X Counters” menu (Switching function)*

This is used to enable the count of the operating time (closing or opening) and the number of operations of the relay associated with the channel by setting the count parameters.
The menu is visible if the **“Counter function”** parameter of the **Channel x - settings** menu is set with the value **active**.

The structure of the menu is as follows:

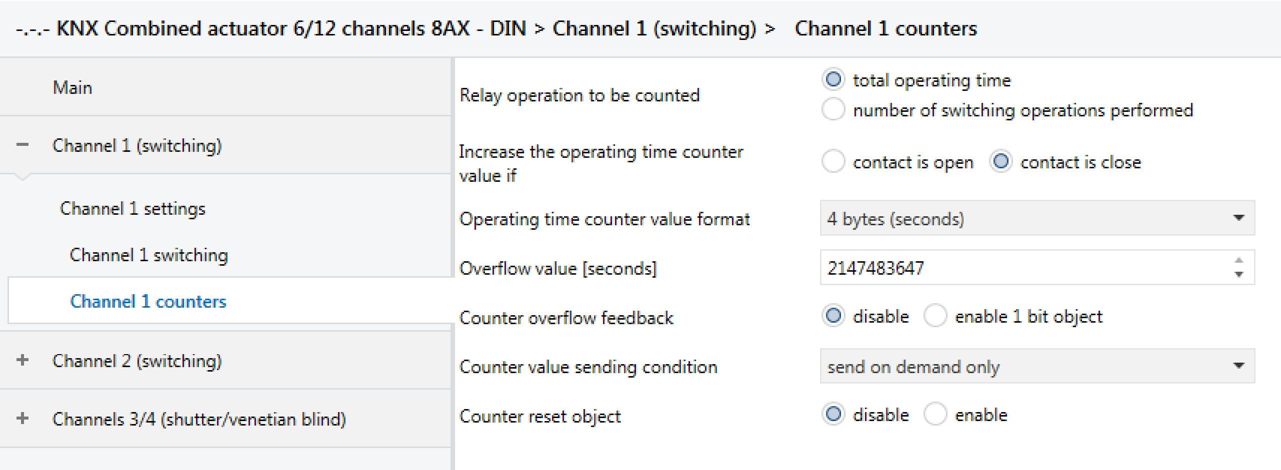


Fig. 14.1

14.1 Parameters

14.1.1 Relay operations to be counted

The device can signal the count of the total operating time (closure or opening) of the relay, or the count of the number of operations it has carried out; the **“Relay operations to be counted”** parameter defines which operation should be counted. The values that can be set are:

- **total operating time** **(default value)**
- number of switching operations performed

If you select **total operating time**, the **“Increase the operating time counter value if”**, **“Operating time counter value format”**, **“Overflow value [seconds]”**, **“Counter overflow feedback”**, **“Counter value sending condition”** and **“Counter reset object”** parameters will be displayed, along with the ***Ch.x - Operating time counter*** communication object.

If you select **number of switching operations performed**, the **“Switching operations counter value format”**, **“Overflow value”**, **“Counter overflow feedback”**, **“Counter value sending condition”** and **“Counter reset object”** parameters will be displayed, along with the ***Ch.x - Switching operation counter*** communication object.

<u>The parameters relating to the “total operating time” option are described below.</u>

14.1.2 Increase the operating time counter value if

The **“Increase the operating time counter value if”** parameter is used to set the contact status considered for a counter increase. The values that can be set are:

- contact is open
- **contact is closed (default value)**

The count is made with the BUS voltage, or without the BUS voltage but with the 230V auxiliary voltage; otherwise, the counter is not increased.

14.1.3 Operating time counter value format

The counter that is used for the count can have different units of measure depending on the format selected for transmitting the value on the KNX BUS; the **"Operating time counter value format"** parameter is therefore used to define the size and code of the communication object used to communicate the counter value, and hence the counter measurement unit. The values that can be set are:

- **4 byte (seconds) (default value)**
- 2 byte (minutes)
- 2 byte (hours)

The value set in this item will change, as a result, the values set for the parameter **"Overflow value"** and the format of the communication object ***Ch.x – Operating time counter***; The initial value is always 0, regardless of the format selected.

14.1.4 Overflow value [seconds]

The parameter **"Overflow value"** is used to set the maximum value of the operating time counter; in fact, it is possible to set the maximum counter value - i.e. the value beyond which the counter is in an overflow condition.
Depending on the value set for the parameter **"Operating time counter value format"** the values that can be set for this item will be different:

- If the counter format is **4 byte (seconds)**, this displays the communication object ***Ch.x – Operating time counter*** (Data Point Type: 13.100 DPT_LongDeltaTimeSec) and the values that can be set for the above parameter are:

  - from 0 to **2147483647 (default value ≈ 68 years)**, in steps of 1

- If the counter format is **2 byte (minutes)**, this displays the communication object ***Ch.x – Operating time counter*** (Data Point Type: 7.006 DPT_TimePeriodMin) and the values that can be set for the above parameter are:

  - from 0 to **65535 (default value ≈ 45.5 days)**, in steps of 1

- If the counter format is **2 byte (hours)**, this displays the communication object ***Ch.x – Operating time counter*** (Data Point Type: 7.007 DPT_TimePeriodHrs) and the values that can be set for the above parameter are:

  - from 0 to **65535 (default value ≈ 7.4 years)**, in steps of 1

Once the maximum value has been reached, the counter restarts from 0.

14.1.5 Counter overflow feedback

The **"Counter overflow feedback"** parameter is used to enable the display, and therefore the use, of the communication objects that indicate when the operating time counter has exceeded its maximum value. The values that can be set are:

- **disable (default value)**
- enable 1 bit object

selecting the value **enable 1 bit object**, displays the communication object ***Ch.x – Operating time counter overflow*** (Data Point Type: 1.002 DPT_Bool) with which the device indicates the overflow of the operating time counter; When the overflow occurs, a value of “1” is sent; a value of “0” is never sent.

14.1.6 Counter value sending condition

The **“Counter value sending condition”** parameter is used to define the conditions for sending the current value of the operating time counter. The values that can be set are:

- **send on demand only** **(default value)**
- send in case of change
- send periodically
- sends on change and periodically

Selecting a value other than **send on demand only**, displays the communication object ***Ch.x – Operating time counter trigger*** (Data Point Type: 1.017 DPT_Trigger). Selecting the value **send in case of change** or **send on change and periodically** displays the parameter **“Minimum counter variation for sending value”** whereas selecting the value **send periodically** displays the parameter **“Counter sending period [seconds]”**.
Selecting the value **send on demand only**, no new parameter will be enabled because the operating time counter value is not sent spontaneously by the device; only in the case of a status read request will it send the user a telegram in response to the command received, giving information about the current value of the counter.
If the counter sending condition is different from **send on demand only**, there is the possibility to indirectly trigger the sending of the current operating time counter value when a BUS telegram is received on the ***Ch.x - Operating time counter trigger*** object (both with a value of “1” and “0”); each time the device receives a telegram on that object, it must immediately send the current value of the counter.
After a BUS voltage recovery, the value of the counter should be sent in order to update any connected devices.

The parameter **"Minimum counter variation for sending value"**, which is visible if the operating time counter value is sent on change, is used to define the minimum variation of the counter (in relation to the last value sent) that causes the new value to be spontaneously sent; The values that can be set are:

- from 1 to 100, in steps of 1 **(default value 10)**

The unit of measurement of the minimum variation is the same as what is set for the counter format.

The parameter **“Counter sending period [seconds]”**, which is visible if the operating time counter value is sent periodically, is used to define the period with which telegrams indicating the current counter value are spontaneously sent; The values that can be set are:

- from 1 to 255, in steps of 1 **(default value 15)**

14.1.7 Counter reset object

The parameter **“Counter reset object”** is used to enable the display and therefore the use of the communication object ***Ch.x – Operating time counter reset*** (Data Point Type: 1.017 DPT_Trigger), in order to receive, via BUS, the command to reset the operating time counter for resetting the value. The values that can be set are:

- **disable** **(default value)**
- enable

selecting the value **enable**, displays the communication object ***Ch.x – Operating time counter reset*** through which the device receives the command to reset the operating time counter; If a value “1” or “0” is received, the counter is reinitialised to 0.

In the event of a BUS voltage failure, the operating time counter value must be saved in a non-volatile memory and restored when the BUS voltage is recovered.

The parameters relating to the "number of switching operations performed" option are described below.

The operation count is based on the detection of variations in the status of the relay associated with the output. Any operations carried out on BUS voltage failure or reset, or with ETS download, are only counted if the 230V auxiliary voltage is present. The count is also made in the absence of the BUS voltage but with the 230V auxiliary voltage active.

14.1.8 Switching operations counter value format

The counter used for the count of the number of operations can have different units of measure depending on the format selected for transmitting the value on the KNX BUS; therefore, with the parameter **"Switching operations counter value format"** it is possible to define the size and code of the communication object used to communicate the counter value and as a result the unit of measure of the counter. The values that can be set are:

- 2 byte unsigned values
- **4 byte unsigned values (default value)**

The value set for this item will therefore alter the values that can be set for the **"Overflow value"** parameter and the format of the ***Ch.x - Switching operation counter*** communication object. The initial value is always 0, regardless of the format selected.

14.1.9 Overflow value

The parameter **"Overflow value"** is used to set the maximum value of the operation number counter; in fact, it is possible to set the maximum counter value - i.e. the value beyond which the counter is in an overflow condition.
Depending on the value set for the parameter **"Switching operations counter value format"** the values that can be set for this item will be different:

- If the counter format is **2 byte unsigned values**, this displays the communication object ***Ch.x – Switching operation counter*** (Data Point Type: 7.001 DPT_Value_2_Ucount) and the values that can be set for the above parameter are:

  - from 0 to **65535 (default value)**, in steps of 1

- If the counter format is **4 byte unsigned values**, this displays the communication object ***Ch.x - Switching operation counter*** (Data Point Type: 12.001 DPT_Value_4_Ucount) and the values that can be set for the above parameter are:

  - from 0 to **4294967295 (default value)**, in steps of 1

Once the maximum value has been reached, the counter restarts from 0.

14.1.10 Counter overflow feedback

The **"Counter overflow feedback"** parameter is used to enable the display, and therefore the use, of the communication objects that indicate when the switching operation counter has exceeded its maximum value. The values that can be set are:

- **disable** **(default value)**
- enable 1 bit object

selecting the value **enable 1 bit object**, displays the communication object ***Ch.x – Switching operation counter overflow*** (Data Point Type: 1.002 DPT_Bool), with which the device indicates the overflow of the switching operation counter. When the overflow occurs, a value of "1" is sent; a value of "0" is never sent.

14.1.11 Counter value sending condition

The **"Counter value sending condition"** parameter is used to define the conditions for sending the current value of the switching operation counter. The values that can be set are:

- **send on demand only** **(default value)**
- send in case of change
- send periodically
- sends on change and periodically

Selecting a value other than **send on demand only** displays the ***Ch.x - Switching operation counter trigger*** communication object (Data Point Type: 1.017 DPT_Trigger). Selecting **send in case of change** or **send in case of change and periodically** displays the **"Minimum counter variation for sending value"** parameter, whereas if you select **send periodically** the **"Counter sending period [seconds]"** parameter will be visualised.
Selecting the value **send on demand only**, no new parameter will be enabled because the operation number counter value is not sent spontaneously by the device; only in the case of a status read request will it send the user a telegram in response to the command received, giving information about the current value of the counter.
If the counter sending condition is different from **send on demand only**, there is the possibility to indirectly generate the sending of the current value of the operation number counter following receipt of a BUS telegram on the **Ch.x - Switching operation counter trigger** object (with both a value of "1" and a value of "0"); each time the device receives a telegram on that object, it must immediately send the current value of the counter.
After a BUS voltage recovery, the value of the counter should be sent in order to update any connected devices.

14.1.12 Minimum counter variation for sending value

The **"Minimum counter variation for sending value"** parameter, which is visible if the switching operation counter value is sent on change, is used to define the minimum counter variation (in relation to the last value sent) that causes the new value to be spontaneously sent. The values that can be set are:

- from 1 to 100, in steps of 1 **(default value 10)**

The unit of measurement of the minimum variation is the same as what is set for the counter format.

The parameter **"Counter sending period [seconds]"**, which is visible if the operation number counter value is sent periodically, is used to define the period with which telegrams indicating the current counter value are spontaneously sent; The values that can be set are:

- from 1 to 255, in steps of 1 **(default value 15)**

14.1.13 Counter reset object

The parameter **"Counter reset object"** is used to enable the visualisation, and therefore the use, of the communication object ***Ch.x – Switching operation counter reset*** (Data Point Type: 1.017 DPT_Trigger), in order to receive, via BUS, the command to reset the operation number counter for resetting the value. The values that can be set are:

- **disable** **(default value)**
- enable

selecting the value **enable**, displays the communication object ***Ch.x – Switching operation counter reset***, through which the device receives the command to reset the operation number counter; If a value “1” or “0” is received, the counter is reinitialised to 0.

In the event of a BUS voltage failure, the operation number counter value must be saved in a non-volatile memory and restored when the BUS voltage is recovered.

15 *“Channels Y/Z settings” menu (Shutter/Venetian blind function)*

For reasons of simplicity, the items that make up the **Channels 1/2 settings**, **Channels 3/4 settings**, **Channels 5/6 settings**, **Channels 7/8 settings**, **Channels 9/10 settings** and **Channels 11/12 settings** menus will be described once only for the following chapters (with reference to the general **Channels y/z settings** menu), as these menus all contain the same items. The menus are visible if the relative **“Channels 1 and 2 function”** (**“Channels 3 and 4 function”**, **“Channels 5 and 6 function”**, **“Channels 7 and 8 function”**, **“Channels 9 and 10 function”** and **“Channels 11 and 12 function”**) parameter of the **Main** menu is set as **shutter/Venetian blind (combined)**.
The **Channels y/z settings** menu contains the parameters that define the characteristics of the motor connected to the device channels configured as **shutter/Venetian blind (combined)**.

The basic structure of the menu is as follows:

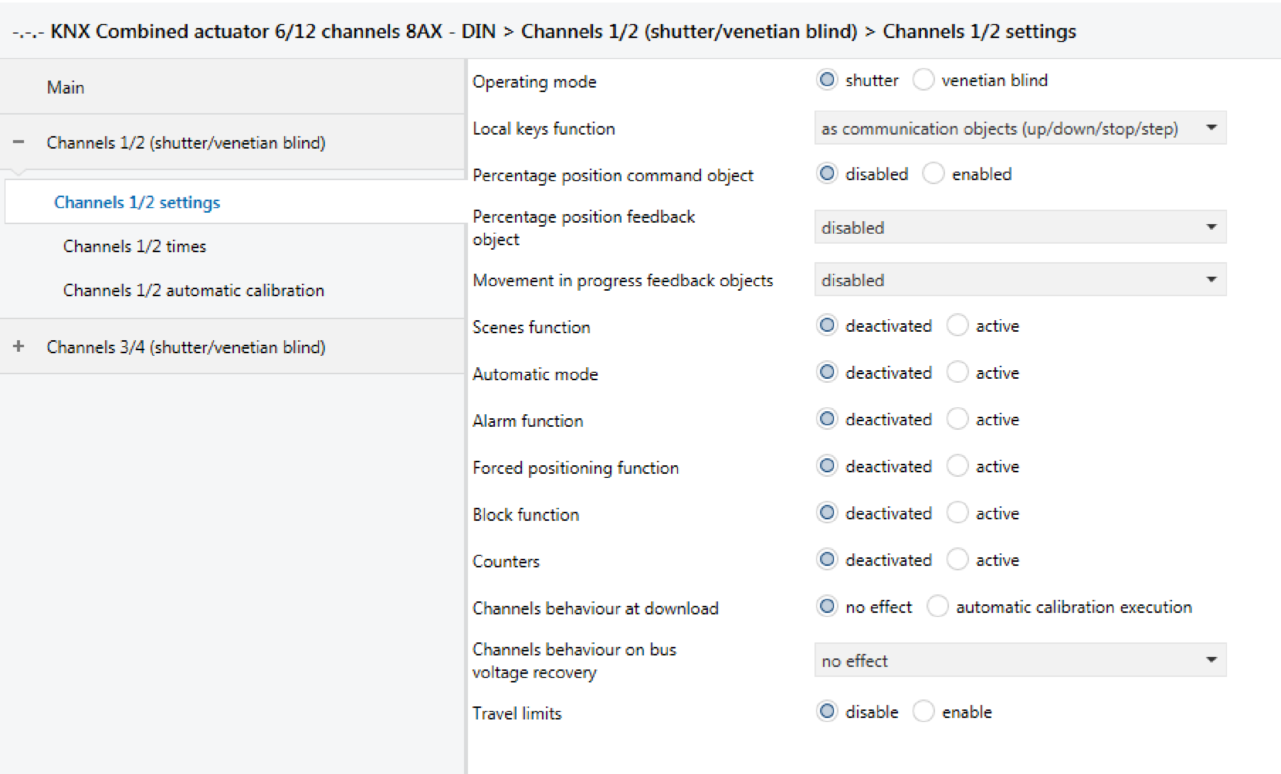


Fig. 15.1

15.1 Parameters

15.1.1 Operating mode

After configuring the combined operation of the channels, it is necessary to specify the load to be activated by the two channels in order to understand whether, apart from the up/down movement (roller shutter), the position of the slats must also be controlled (Venetian blind). The **“Operating mode”** parameter is used to set which of the two checks must be enabled. The parameter may have the following values:

- **shutter** **(default value)**
- Venetian blind

Selecting **Venetian blind** displays the **Channels y/z louvres control** menu, with all the parameters that define the position of the slats during device operation.
Depending on the value selected, different communication objects will be displayed for stopping shutter/venetian blind movement: select **shutter** to display the ***Ch.y/z - Stop*** object (Data Point Type: 1.017 DPT_Trigger), or select **Venetian blind** to display the ***Ch.y/z - Shutter stop/Louvre control*** object (Data Point Type: 1.007 DPT_Step). If any value is received on both objects while the load is moving, the movement will stop immediately; in the case of “shutter”, no action is performed if the object is received when the load is not moving, but in the case of “Venetian blind”, there will be an opening control step (if the object has a value of “0”) or a closure control step (if the value is “1”).

The ***Ch.y/z - Movement*** communication object (Data Point Type: 1.008 DPT_UpDown) (always visible) is used to move the roller shutter or Venetian blind up and down, then it can be stopped with the ***Ch.y/z - Stop*** (or ***Ch.y/z - Shutter stop/Louvres control***) object. Otherwise, it will stop automatically when the movement time has elapsed.

15.1.2 Local keys function

For each channel, there is a push-button on the front of the device for directly controlling the load connected to the relay without the interaction of commands received via the KNX BUS; The **“Local keys function”** parameter defines the behaviour of the local button keys associated with the relative combined outputs. The parameter may assume the following values:

- none
  the local button keys are inhibited

- test (up/down/stop/step)
  every time there is a long operation (>500 ms) on the upper front button key (associated with channel y), the actuator moves the load upwards. With a short operation (<500 ms), the load is stopped or slats opening is adjusted (in “Venetian blind” mode); a long operation on the lower front button key (associated with channel z) triggers a downward movement of the load, whereas a short operation stops the load or adjusts slat closure (in "Venetian blind” mode). This command has top priority and is executed regardless of the other active functions (including Forced positioning, Block and Weather alarm).

- **as communication objects (up/down/stop/step) (default value)**
  the function is as described above, but with the difference that an operation on the front button keys emulates the arrival of the *Ch.y/z - Movement* and *Ch.y/z - Stop* (or *Shutter stop/Louvres control*) communication objects; this implies that the actual execution of the commands only takes place if the functions with a higher priority (Block, Forced positioning, etc.) are deactivated.

The use of the local button keys is guaranteed with the BUS voltage, and without the BUS voltage but with the 230V auxiliary voltage.

15.1.3 Percentage position command object

The **“Percentage position command object”** parameter is used to enable the communication object via which you can set the percentage position of the roller shutter/Venetian blind, leaving the actuator to perform the necessary movement. The values that can be set are:

- **disabled (default value)**
- enabled

Selecting **enabled** displays the ***Ch.y/z - Position command*** communication object (Data Point Type: 5.001 DPT_Scaling), for receiving the command with the percentage position to be used for implementation.

15.1.4 Percentage position feedback object

The device can signal the percentage position of the load controlled by each channel following a movement according to the value set in the **"Percentage position feedback object"** parameter, which can have the following values:

- **disabled** **(default value)**
- enabled only on demand
- enabled on change and on switching on

Setting any value other than **disabled** displays the ***Ch.y/z - Position feedback*** object (Data Point Type: 5.001 DPT_Scaling), via which the device signals - with a communication object - the percentage position of the load.

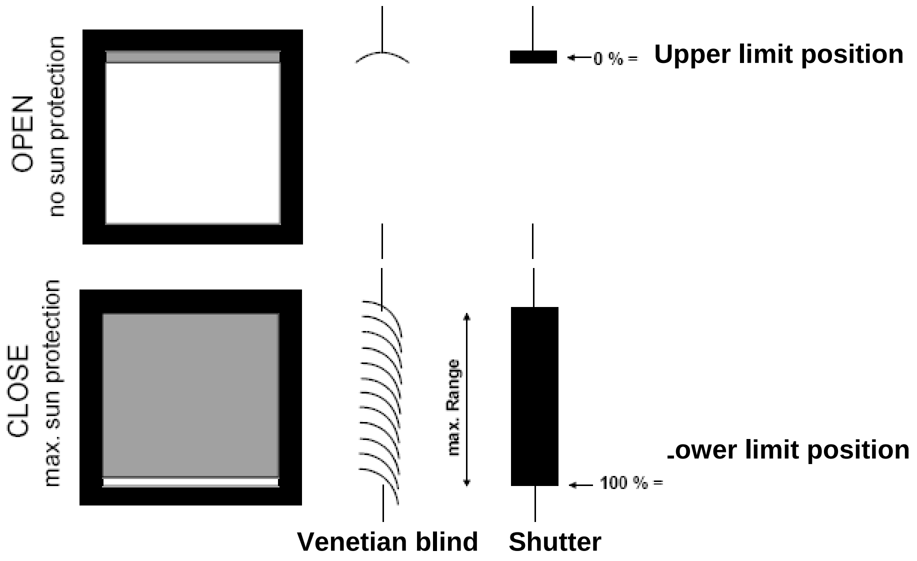
If you select **enabled on change and on switching on**, the percentage position is transmitted every time there is a change in the position of the load, and when the BUS voltage is reset.

If the set value is **enabled only on demand**, the signal is never sent spontaneously by the device; only when a status read request is received from the BUS, the device sends a response telegram with the current load position.

With regard to the percentage position of the object, the following convention is used:

- 0% →roller shutter/Venetian blind completely raised
- 100%→roller shutter/Venetian blind completely lowered

Here is an example:



15.1.5 Movement in progress feedback objects

The signalling of the load movement direction and status can be enabled via the **"Movement in progress feedback objects"** parameter, which can have the following values:

- **disabled** **(default value)**
- enabled only on demand
- enabled on change

Setting any value other than **disabled** displays the ***Ch.y/z - Movement direction feedback*** (Data Point Type: 1.008 DPT_UpDown) and ***Ch.y/z - Movement in progress feedback*** (Data Point Type: 1.010 DPT_Start) objects. If you select **enabled on change**, the objects are sent upon request and spontaneously every time the load is moved.

The device uses the ***Ch.y/z - Movement direction feedback*** object to signal when a downward movement of the load (value "1") or an upward movement (value "0") is in progress; the load status is indicated with the ***Ch.y/z - Movement in progress feedback*** object: ("1" for movement, "0" for stationary).

15.1.6 Functions that can be enabled on the roller shutters/Venetian blinds

Depending on whether the mode is roller shutter or Venetian blind, the channel offers different functions with different priorities. The **"Scenes function"**, **"Automatic mode"**, **"Alarm function"**, **"Forced positioning function"**, **"Block function"** and **"Counters"** parameters are used to activate the functions and make their operating parameters visible and configurable, displaying the **Channels y/z Scenes**, **Channels y/z automatic mode**, **Channels y/z alarms**, **Channels y/z forced positioning**, **Channels y/z block** and **Channels y/z counters** configuration menus. The values that can be set for the parameters listed above are:

- **deactivated** **(default value)**
- active

Selecting **active** displays the relative configuration menu, described in the following chapters.

15.1.7 Channel behaviour at download

You can define the behaviour of channels y/z following an application download from ETS using the **"Channel behaviour at download"** parameter, which can have the following values:

- **no effect** **(default value)**
- automatic calibration execution

15.1.8 Channels behaviour on bus voltage recovery

In the event of a BUS voltage drop, the relays of the combined y/z channels are opened regardless of whether or not the 230V auxiliary voltage is active, and this stops any movement that may be in progress.
The behaviour of the y/z channels when the BUS voltage is reset is determined by the **"Channels behaviour on bus voltage recovery"** parameter, which can have the following values:

- **no effect** **(default value)**
- up movement
- down movement
- automatic calibration execution
- percentage position

Selecting **percentage position** displays the **"Percentage position on bus voltage recovery"** parameter and, in the case of "Venetian blind" mode, also the **"Louvre percentage position on bus voltage recovery"** parameter. These are used respectively to set the load height and slat position on BUS voltage reset. The values that can be set for the above parameters are:

- from **0% (default value)** to 100%, in steps of 5%

NOTE: before moving to the required percentage position, the actuator autonomously performs the calibration operation.

SUMMARY OF THE ACTIONS ON THE CONTACTS WITH BUS AND 230V VOLTAGE FAILURE/RESET

<table>
<tr><th colspan="2"></th><th colspan="2">KNX BUS voltage</th></tr>
<tr><th rowspan="3">230V AC voltage</th><th></th><th>drop</th><th>reset</th></tr>
<tr><th>absent</th><td rowspan="2">• The contacts of the combined channels are both opened, stopping any movements that may be in progress.</td><td rowspan="2">• The status of the contacts on voltage reset is as shown in the priorities table (see ch. 25 and 26 for the priorities assigned to the functions of channel x and channels y/z).</td></tr>
<tr><th>present</th></tr>
</table>

<table>
<tr><th colspan="2"></th><th colspan="2">230V AC voltage</th></tr>
<tr><th rowspan="3">KNX BUS voltage</th><th></th><th>drop</th><th>reset</th></tr>
<tr><th>absent</th><td>• No direct voltage failure effect on the contacts</td><td>• Opening of the contacts
• Possibility to move the load using the local push-button if the “Local keys function” parameter is set with a value other than none.</td></tr>
<tr><th>present</th><td>• No direct voltage failure effect on the contacts; normal device operation.
• Sending of the 230V absence alarm signal, if "with variations" is enabled</td><td>• No direct effect on the contacts; normal device operation.
• Sending of the 230V absence alarm termination signal, if "with variations" is enabled</td></tr>
</table>

15.1.9 Travel limits

In some applications, it is useful to limit the object travel to a certain interval, to prevent it from being damaged or damaging other objects; the **“Travel limits”** parameter enables the limitation of the load stroke via the ***Ch.y/z - Travel limits enabling*** communication object (Data Point Type: 1.003 DPT_Enable), which can have the following values:

- **disable** **(default value)**
- enable

Selecting **enable** displays the ***Ch.y/z - Travel limits enabling***, ***Ch.y/z - Upper travel limit*** (Data Point Type: 5.001 DPT_Scaling) and ***Ch.y/z - Lower travel limit*** (Data Point Type: 5.001 DPT_Scaling) communication objects, along with the **“Upper limit percentage position”**, **“Lower limit percentage position”**, **“Travel limits after download”** and **“Travel limits on bus voltage recovery”** parameters.
The stroke limits are only used for movements generated by commands on communication objects with a lower priority than weather alarms (see ch. 25 and 26 for the priorities of the functions of channel x and channels y/z).

The **“Upper limit percentage position”** and **“Lower limit percentage position”** parameters are used to set the limits of the load stroke gap once the limiting has been enabled via the ***Ch.y/z - Travel limits enabling*** object. The values that can be set are:

- from **0% (upper limit default value)** to **100% (lower limit default value)**, in steps of 5%

If you set a lower stroke limit < upper limit, the device ignores the parameters and maintains the default values (0% upper and 100% lower).
The stroke limits can be modified from the BUS via the ***Ch.y/z - Upper travel limit*** and ***Ch.y/z - Lower travel limit*** communication objects. If a lower stroke limit < of the upper stroke limit is received, the telegram is ignored; likewise, an upper stroke limit > of the lower stroke limit is ignored.
With the **“Travel limits after download”** parameter, you can choose whether to enable the limiting of the stroke following an application download from ETS. The values that can be set are:

- **disable** **(default value)**
- enable

The **"Travel limits on bus voltage recovery"** parameter sets the stroke limit activation status after a BUS voltage reset. The values that can be set are:

- disable
- enable
- **as before voltage drop** **(default value)**

16 *“Channels Y/Z times” menu (Shutter/Venetian blind function)*

This menu contains the parameters for setting the various activation times of the load linked to the combined channels.

The structure of the menu is as follows:

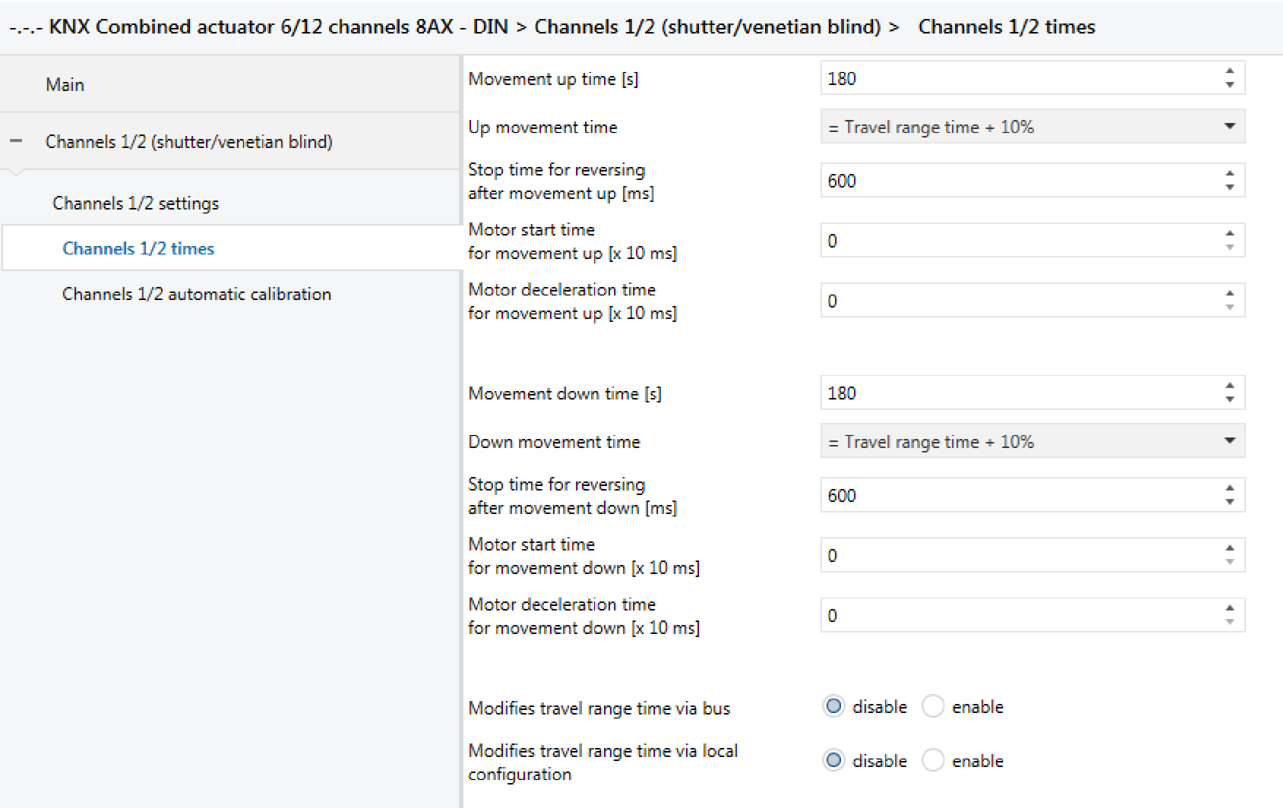


Fig. 16.1

16.1 Parameters

16.1.1 Movement up time [s] – Movement down time [s]

The device calculates the percentage positions and executes partial movements based on the total load travel time - i.e. the time it takes the load to move from the “fully up” position (0%) to the “fully closed” position (100%) and vice versa. Given that the up and down times are not always the same, the **“Movement up time [s]”** and **“Movement down time [s]”** parameters can be used to set the up stroke (from position 100% to 0%) and the down stroke (from position 0% to 100%) respectively. The possible values for these parameters are:

- from 1 to 3000, in steps of 1, **180 (default value)**

16.1.2 Modifies travel range time via bus

The **“Modifies travel range time via bus”** parameter modifies the travel times via BUS commands, displaying the ***Ch.y/z - Upward movement time*** and ***Ch.y/z - Downward movement time*** objects (Data Point Type: 7.005 DPT_TimePeriodSec). The values that can be set are:

- **disable** **(default value)**
- enable

Selecting **enable** displays the ***Ch.y/z - Upward movement time*** and ***Ch.y/z - Downward movement time*** objects. The values received from the BUS must be within the range [1;3000], or rounded to the nearest limit value if they are outside the range.

16.1.3 Modifies travel range time via local configuration

The **"Modifies travel range time via local configuration"** parameter enables the learning of the up and down travel times via a specific manual procedure. The values that can be set are:

- **disable** **(default value)**
- enable

If you select **enable**, the up and down travel times can be learnt on the basis of the following procedure:

Downward stroke time

1. Bring the roller shutter/Venetian blind to the completely open position (0%, "fully up").
2. Simultaneously press the 2 local command push-buttons relating to the channels y/z to be set. The LEDs of the two channels will start blinking
3. Press the DOWN push button (the local push-button of channel "z") within 5 seconds - i.e. before the LEDs stop blinking; the roller shutter/Venetian blind will begin to move downwards and the count of the down stroke time will be initialised.
4. When the roller shutter/Venetian blind is fully closed (100%, "fully down"), press any one of the local command push-buttons to stop the downward movement and store the travel time. To correctly store the travel time, you are advised to press the push-button immediately after the shutter has completely closed.

Procedure completed.

Downward stroke time

1. Bring the roller shutter/Venetian blind to the completely closed position (100%, "fully down").
2. Simultaneously press the 2 local command push-buttons relating to the channels y/z to be set. The LEDs of the two channels will start blinking
3. Press the UP push button (the local push-button of channel "y") within 5 seconds - i.e. before the LEDs stop blinking; the roller shutter/Venetian blind will begin to move upwards and the count of the up stroke time will be initialised.
4. When the roller shutter/Venetian blind is fully open (0%, "fully up"), press any one of the local command push-buttons to stop the upward movement and store the travel time. To correctly store the travel time, you are advised to press the push-button immediately after the shutter has completely opened.

Procedure completed.

16.1.4 Up movement time – Down movement time

The device continues to power the motor contact even if the limit switch has been reached, to make sure that the load has definitely reached the limit switch position. The stroke can be extended via the **"Up movement time"** and **"Down movement time"** parameters, that can have the following values:

- = Travel range time
- = Travel range time + 2%
- = Travel range time + 5%
- **= Travel range time + 10%** **(default value)**
- = Travel range time + 20%

16.1.5 Stop time for reversing after movement up [ms] - Stop time for reversing after movement down [ms]

To prevent damaging the motor, a delay must be entered between receiving a command for movement in the opposite direction of the current movement and the effective reversal of direction; this time is normally provided by the roller shutter/Venetian blind manufacturer and must be strictly observed. The parameters for setting this value are **“Stop time for reversing after movement up [ms]”** and **“Stop time for reversing after movement down [ms]”**, and they can have the following values:

- from 400 to 10000, in steps of 1, **600 (default value)**

16.1.6 Motor start time for movement up [x10ms] - Motor start time for movement down [x 10ms]

With a view to keeping the correct load positioning unaltered over time (following the execution of scenes or percentage value commands), it is possible to apply an extension of the time calculated to reach the required percentage position, in order to avoid any possible motor start-up delay (between the moment when the motor is powered and the moment when it starts running). This value can be set in the **“Motor start time for movement up [x 10 ms]”** and **“Motor start time for movement down[x 10 ms]”** parameters, that can have the following values:

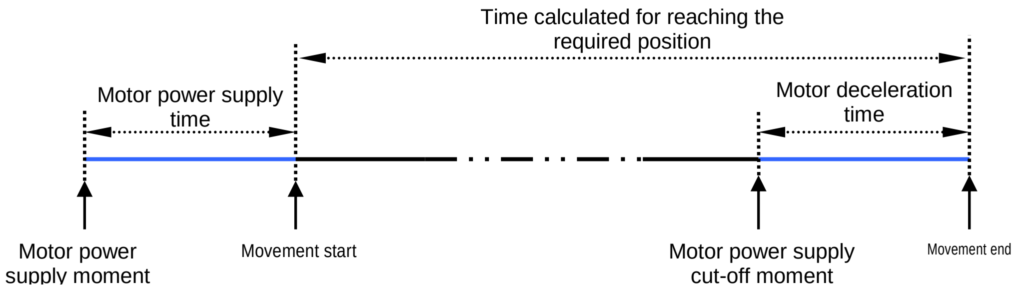
- **from 0 (default value)** to 255, in steps of 1

16.1.7 Motor deceleration time for movement up [x10ms] - Motor deceleration time for movement down [x 10ms]

Some motors continue to run for a short time even after their power supply has been cut off. The **“Motor deceleration time for movement up [x 10 ms]”** and **“Motor deceleration time for movement down [x 10 ms]”** parameters can be used to set the time value to be subtracted from the time calculated for reaching an intermediate percentage position required by the user, so that the regulation is more precise. The values that can be set are:

- **from 0 (default value)** to 255, in steps of 1

Example:



NOTE: the times set for the *“Motor start time”* and *“Motor deceleration time”* parameters are only used to calculate the time required to reach a certain intermediate percentage position (following a specific command, or following the reproduction of a position associated with a scene or prior to a status). They are not used for any movements carried out via the ***Ch.y/z - Movement*** object.

17 “Channels Y/Z louvres control” menu (Shutter/Venetian blind function)

This menu contains the parameters for setting the various slat activation times of the load linked to the combined channels. The menu is visible if the **“Operating mode”** parameter of the **Channels y/z settings** menus is set with **Venetian blind**.

The structure of the menu is as follows:

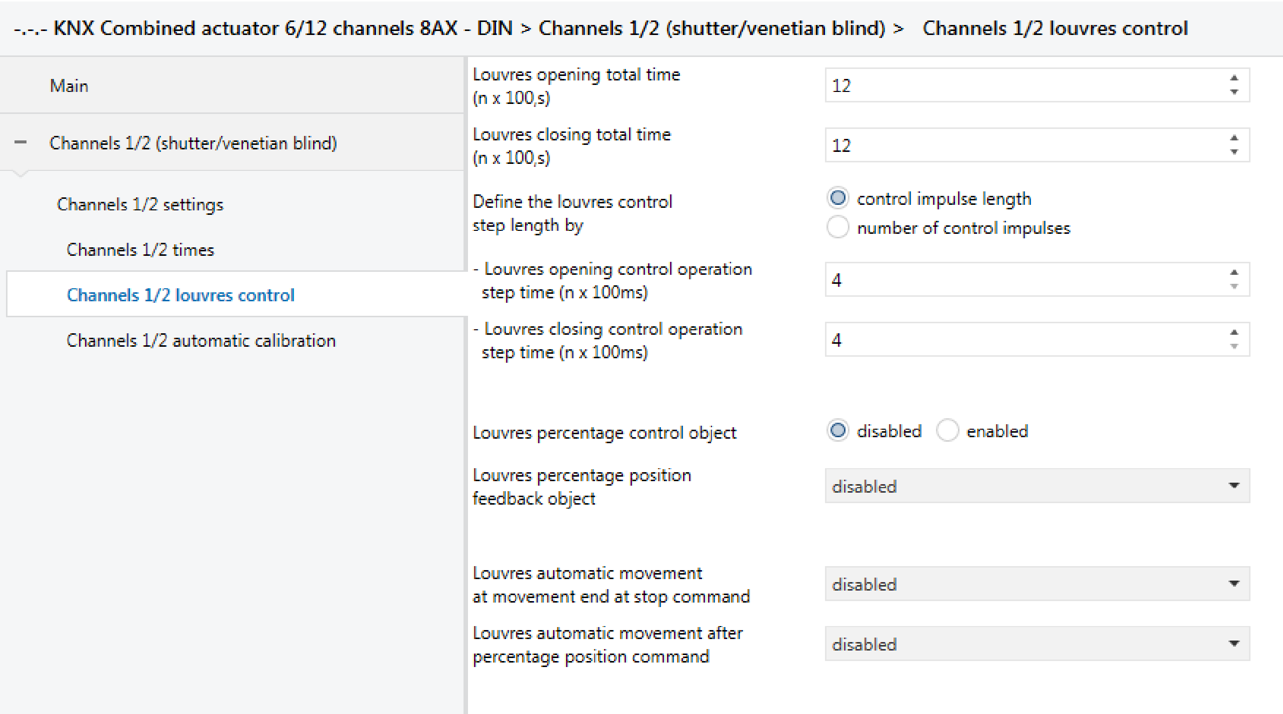


Fig. 17.1

17.1 Parameters

17.1.1 Louvres opening total time [n x 100ms] – Louvres closing total time [n x 100ms]

The **“Louvres opening total time (n x 100ms)”** and **“Louvres closing total time (n x 100ms)”** parameters can be used to set the factor which, when multiplied by the base (100 milliseconds), defines the duration of the slat regulation from a “fully open” condition to a “fully closed” condition or vice versa.
The values that can be set are:

- from 4 to 120, in steps of 1, **12 (default value)**

17.1.2 Define the louvres control step length by

The **“Define the louvres control step length by”** parameter defines whether the duration of a slat regulation step is set in terms of time or in terms of the number of steps needed to switch from a fully open condition to a fully closed one. The slat regulation command based on steps can be received on the BUS via the ***Ch.y/z - Shutter stop/Louvres control*** object, or via a short press on the local push-buttons. The parameter may have the following values:

- **control impulse length** **(default value)**

- number of control impulses

Selecting **control impulse length** displays the **“Louvres opening control operation step time (n x 100ms)”** and **“Louvres closing control operation step time (n x 100ms)”** parameters.
Selecting **number of control impulses** displays the **“Number of steps for total opening louvres”** and **“Number of steps for total closing louvres”** parameters.

17.1.3 Louvres opening control operation step time (n x 100ms)” and “Louvres closing control operation step time (n x 100ms)”

The **“Louvres opening control operation step time (n x 100ms)”** and **“Louvres closing control operation step time (n x 100ms)”** parameters can be used to set the motor powering time which corresponds to one slat regulation step (opening or closure).
The values that can be set are:

- from 4 to 120, in steps of 1, **3 (default value)**

17.1.4 Number of steps for total opening louvres – Number of steps for total closing louvres

The **“Number of steps for total opening louvres”** and **“Number of steps for total closing louvres”** parameters can be used to set the number of steps needed to fully open and close the slats. In this case, the activation time for the regulation step is calculated directly by the device on the basis of the time and the number of steps needed to close/open the slats. The values that can be set are:

- from 1 to 15, in steps of 1, **3 (default value)**

ATTENTION: given that the activation time of a regulation step is calculated directly by the device (total time / number of steps), make sure the slat step time is not less than the physical limit set by the device (400ms) once the number of steps has been set; if this does happen, the device will perform regulation steps of 400ms.

17.1.5 Louvres percentage control object

The position of the slats can be adjusted from the BUS by sending the percentage value that they must assume (0% → slats fully open, 100% → slats fully closed) via the **“Louvres percentage control object”** parameter, that can have the following values:

- **disabled** **(default value)**
- enabled

Selecting **enabled** displays the ***Ch.y/z - Shutter control command*** communication object (Data Point Type: 5.001 DPT_Scaling), which makes it possible to regulate the slat percentage via the BUS.

17.1.6 Louvres percentage position feedback object

You can enable the signalling of the percentage position of the slats via the **“Louvre percentage position feedback object”** parameter, that can have the following values:

- **disabled** **(default value)**
- enabled only on demand
- enabled on change and on switching on

Setting any value other than **disabled** displays the ***Ch.y/z - Louvres position feedback*** communication object (Data Point Type: 5.001 DPT_Scaling), via which the current slat position is signalled.

If status signalling is set for **enabled on change and on switching on**, the communication object is spontaneously sent when the slat position is modified and on BUS voltage reset.

If you select **enabled only on demand**, the signal is never sent spontaneously by the device; only when a status read request is received, the device sends a response telegram indicating the current position of the slats.

17.1.7 Louvres automatic movement at movement end at stop command

The device can be configured so it automatically regulates the slats at the end of a movement (barring scenes) when a stop command is received on the ***Ch.y/z - Stop*** object via the **"Louvres automatic movement at movement end at stop command"** parameter, that can have the following values:

- **disabled** **(default value)**
- enabled
- enabled after movement up
- enabled after movement down

Selecting **enabled after movement down** or **enabled** displays the **"Louvre percentage position after downward movement"** parameter, for setting the percentage value of the slats after a downward movement.

Selecting **enabled after movement up** or **enabled** displays the **"Louvre percentage position after upward movement"** parameter, for setting the percentage value of the slats after an upward movement.
Both parameters can assume the following values:

- 0%	0
- 5%	12
- …	…
- 50%	128
- …	…
- 100%	255
- **as before the movement**	**256 (default value)**

17.1.8 Louvres automatic movement after percentage position command

You can set the automatic regulation of the slats at the end of a movement triggered by the arrival of a load percentage positioning command on the ***Ch.y/z - Shutter control command*** object, via the **"Louvres automatic movement after percentage position command"** parameter. The parameter may have the following values:

- **disabled** **(default value)**
- enabled
- enabled after movement up
- enabled after movement down

Selecting **enabled after movement down** or **enabled** displays the **"Louvre percentage position after downward movement"** parameter, for setting the percentage value of the slats after a downward movement.

Selecting **enabled after movement up** or **enabled** displays the **"Louvre percentage position after upward movement"** parameter, for setting the percentage value of the slats after an upward movement.

Both parameters can assume the following values:

- 0%	0
- 5%	12

- …	…
- 50%	128
- …	…
- 100%	255
- **as before the movement**	**256 (default value)**

18 *"Channels Y/Z automatic calibration" menu (Shutter/Venetian blind function)*

The actuator can perform automatic movements to recalibrate the calculated position with the actual load position. This menu contains the parameters for activating the automatic calibration function.

The structure of the menu is as follows:

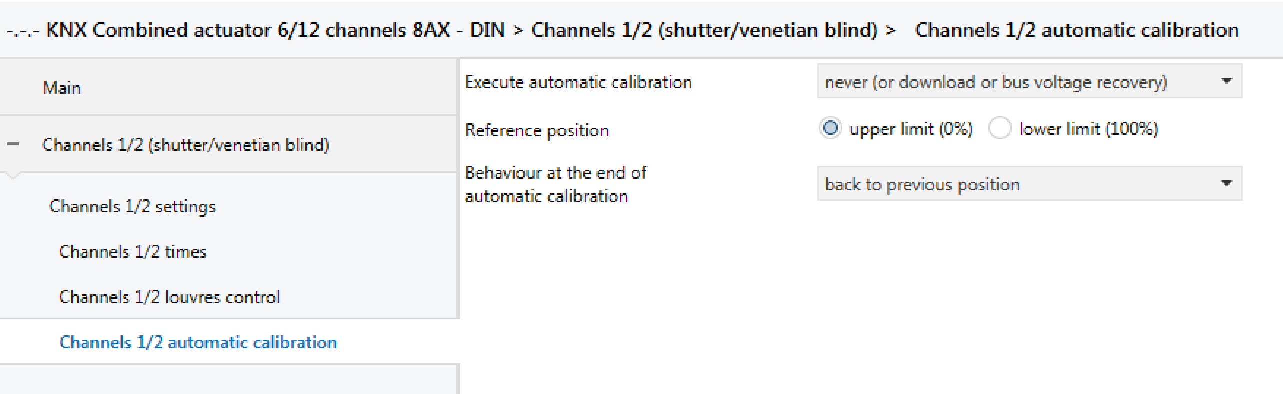


Fig. 18.1

18.1 Parameters

18.1.1 Execute automatic calibration

The actuator calculates the percentage position of the connected load based on the travel range time set by the user and in function of the movement commands it executes. Even if the parameters that determine operating times are set accurately, there may be small variations between the position calculated by the actuator and the one that actually occurs, due to climatic events, for example, or mechanical load tolerances. The device can zero out these variations by executing movements towards the reference positions, that is towards those identified by the two limit switches. Once the device executes a movement to the limit switch, the movement times can be correctly recalculated and any misalignment errors are cancelled. The device performs this operation every time the limit switch is reached, but automatic calibration can also be activated via the **"Execute automatic calibration"** parameter, which can have the following values:

- **never (or download or bus voltage recovery)** **(default value)**
- after "n" movements
- at trigger reception
- after "n" movements and at trigger reception

The value **never (or download or bus voltage recovery)** is selected when you only want an automatic calibration to be performed on download or on BUS voltage reset, as defined in the **"Channel behaviour at download"** and **"Channel behaviour on bus voltage recovery"** parameters of the **Channels y/z settings** menu (see ch.15 - "Channel y/z settings" menu (roller shutter/Venetian blind)).

Selecting **after "n" movements** or **after "n" movements and at trigger reception** displays the **"Number of movements"** parameter.
Selecting **at trigger reception** or **after "n" movements and at trigger reception** displays the ***Ch.y/z - Automatic calibration trigger*** communication object (DPT 1.017 DPT_Trigger); if a value of "0" or "1" is received on this object, the device performs the automatic calibration.

The **"Number of movements"** parameter can be used to define how many movements should be made before the device performs the automatic calibration; each time the device reaches the limit switch, the movement counter is reset. The values that can be set are:

- from 5 to 30, in steps of 1, **10 (default value)**

18.1.2 Reference position

The **“Reference position”** parameter is used to define which limit switch the device must use as a reference for the automatic calibration. The available values are:

- **upper limit (0%)** **(default value)**
- lower limit (100%)

18.1.3 Behaviour at the end of automatic calibration

At the end of the calibration operation, you can define the behaviour of the device using the **“Behaviour at the end of automatic calibration”** parameter, which can have the following values:

- stay in the reference position
- **back to previous position** **(default value)**
- percentage position

Selecting **percentage position** displays the **“Percentage position at the end of automatic calibration”** parameter and, in Venetian blind mode, the **“Louvres percentage position at the end of automatic calibration”** parameter.

The **“Percentage position at the end of automatic calibration”** parameter is used to select the position that the load must assume when the block is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **“Louvres percentage position at the end of automatic calibration”** parameter is used to select the position that the slats must assume when the block is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

19 *“Channels Y/Z scenes” menu (Shutter/Venetian blind function)*

The scenes function is used to replicate a certain pre-set or previously stored position when a scene execution command is received. From the BUS, this function can be controlled via the ***Ch.y/z - Scene*** communication object (Data Point Type 18.001 DPT_SceneControl). The device is able to memorise and execute 8 scenes.
The menu is visible if the **“Scenes function”** parameter of the **Channels y/z - settings** menu is set with the value **active**.

The structure of the menu is as follows:

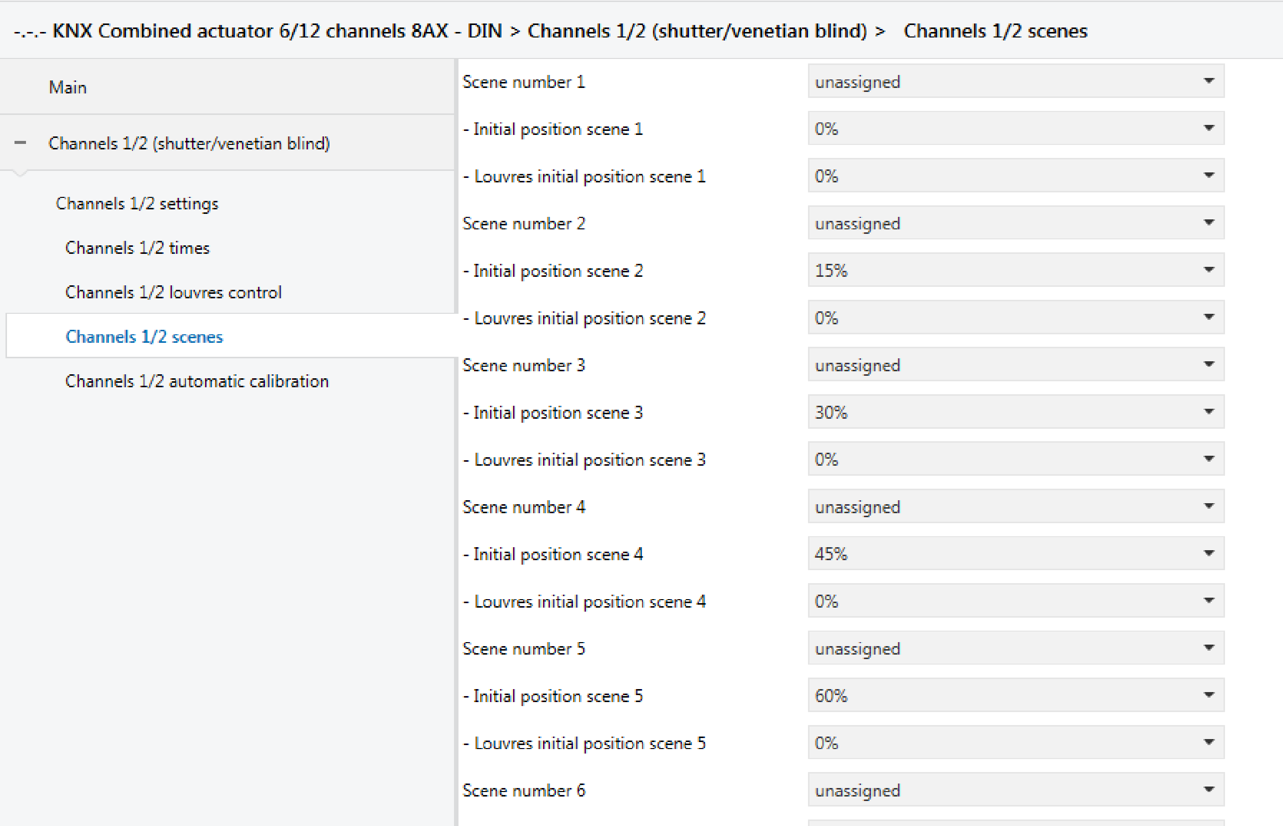


Fig. 19.1

19.1 Parameters

19.1.1 Scene number i

With the **“Scene number i”** (1 ≤ i ≤ 8) parameters, you can set the numerical value for identifying and therefore executing/memorising the i-th scene. The possible values are:

- **unassigned** **(default value)**
- 0, 1.. 63

19.1.2 Initial position scene i

The **"Initial position scene i"** (1 ≤ i ≤ 8) parameters are used to pre-set the percentage position of the load linked to channels y/z, which the actuator must replicate when a telegram is received for the execution of the i-th scene. The possible values are:

- from **0% (default for scene 1)** to **100% (default for scene 8)** in steps of 5 %, **15%** (default value for scene 2), **30%**(default value for scene 3), **45%**(default value for scene 4), **60%**(default value for scene 5), **75%**(default value for scene 6), **90%**(default value for scene 7, **100%**(default value per scene 8).

19.1.3 Louvres initial position scene i

In Venetian blind mode, the **"Louvres initial position scene i"** (1 ≤ i ≤ 8) parameters are used to pre-set the percentage position of the slats of the load linked to channels y/z, which the actuator must replicate when a telegram is received for the execution of the i-th scene. The possible values are:

- from **0% (default value)** to 100%, in steps of 5%

19.1.4 Scenes storing enabling

The **"Scene storing enabling"** parameter is used to enable/disable the possibility of scene learning via the ***Ch.x - Scene*** communication object. The parameter may assume the following values:

- disable
- **enable** **(default value)**

Selecting the value **enable** displays the ***Ch.x - Scene storing enabling*** communication object (Data Point Type: 1.003 DPT_Enable) which enables or disables (via BUS) the possibility of scene learning via the ***Ch.x - Scene*** communication object.

Scene storing includes memorising the percentage position of the slats (for Venetian blinds); scene execution must therefore also include the reproduction of the previously memorised slat position.

20 *"Channels Y/Z automatic mode" menu (Shutter/Venetian blind function)*

The device is able to perform autonomous activations to take advantage of sunlight to heat the environment, for example. It is possible to define the position to which the load must be moved if the user requests protection against the direct light of the sun's rays, requests making use of the sun to heat the environment or requests suitable positioning of the load to protect against the sunlight to keep the environment cool.
The menu is visible if the **"Automatic mode"** parameter of the **Channels y/z - settings** menu is set with the value **active**.
The structure of the menu is as follows:

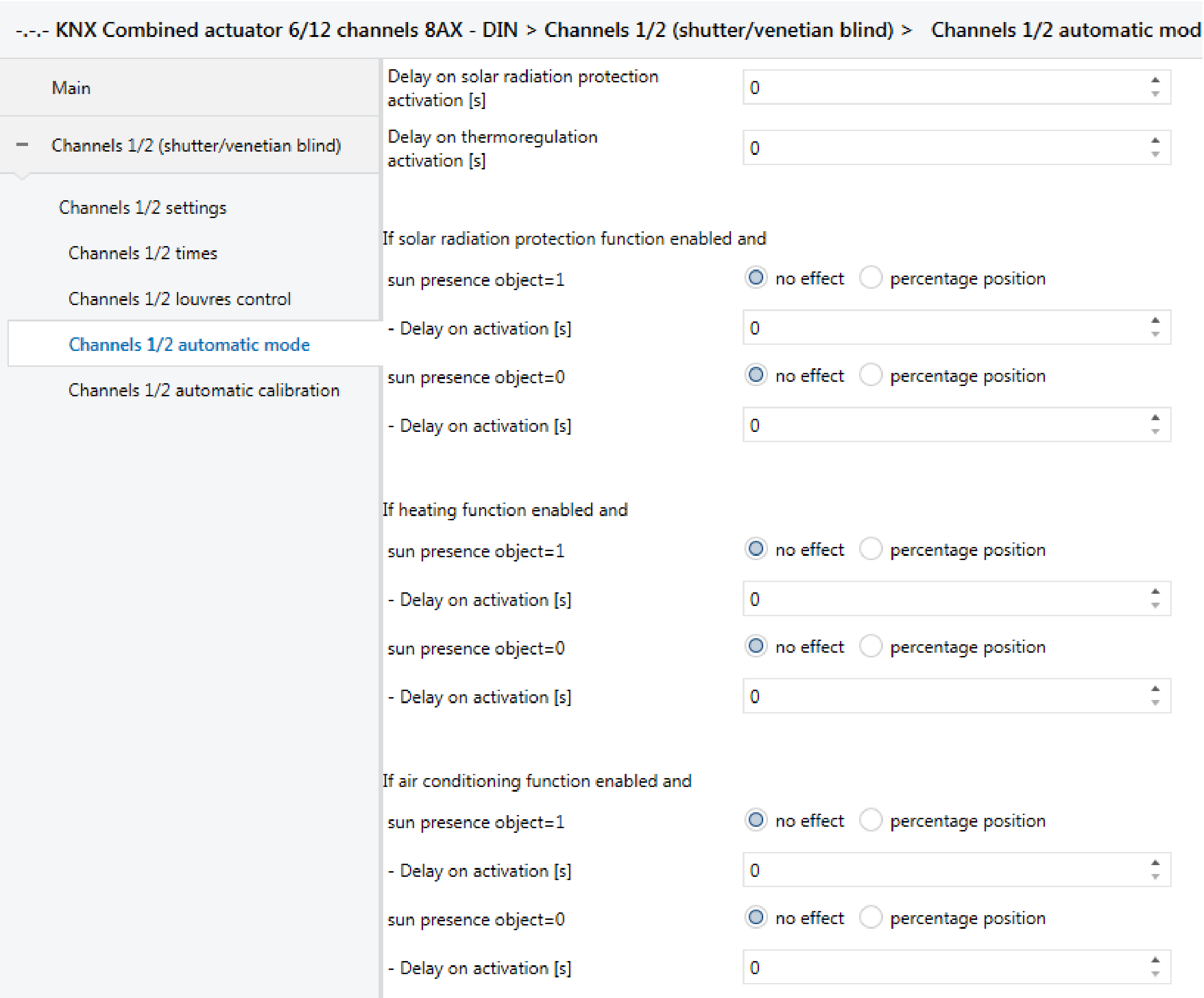


Fig. 20.1

Automatic operation is enabled via the ***Ch.y/z - Automatic mode enabling*** communication object (Data Point Type: 1.003 DPT_Enable). In this operating mode, objects with low priority that permit 'manual' control (including automatic calibration) of the load are ignored, whereas the higher priority commands (weather alarms, block and forced positioning) are executed.

When automatic operation is active, the device evaluates the value of the ***Ch.y/z - Automatic mode function selection*** object that activates the solar radiation protection function (value 1) or the temperature adjustment function (value 0).

20.1 Parameters

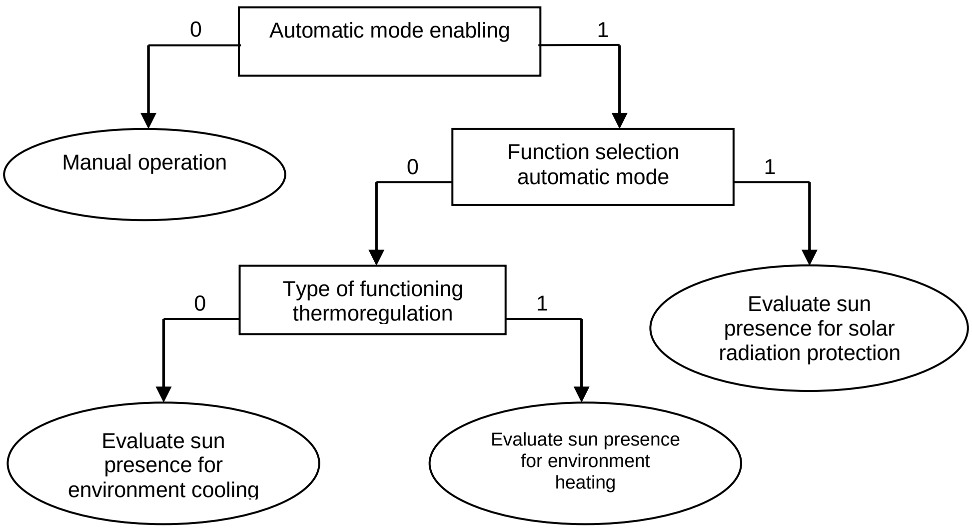
20.1.1 Delay on solar radiation protection activation [s] – Delay on thermoregulation activation [s]

When the telegram is received on the ***Ch.y/z - Automatic mode function selection*** object, the actual activation of the respective functions can be delayed via the **"Delay on solar radiation protection [s]"** and **"Delay on thermoregulation [s]"** parameters. Both parameters can assume the following values:

- from **0 (default value)** to 3600, in steps of 1

20.1.2 If solar radiation protection function enabled and..

Using the ***Ch.y/z - Sun presence*** communication object (Data Point Type: 1.002 DPT_Bool), you can determine a specific actuator reaction on the basis of the presence or absence of the sun, as shown in the example block diagram:



For the various types of control (temperature adjustment or solar radiation protection), you can therefore define the behaviour of the device according to whether it is sunny or not.

Using the **"If solar radiation protection function enabled and.. sun presence object=1"** parameter, you can define the behaviour of the device when operation is set for "solar radiation protection" and the value of the ***Ch.y/z - Sun presence*** object is "1" (presence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **"Percentage position"** and **"Delay on activation [s]"** parameters, plus the **"Louvres percentage position"** parameter in Venetian blind mode.

The **"Percentage position"** parameter allows you to select the position that the load must take when the solar radiation protection function is enabled and the sun presence object = "1". The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **"Louvres percentage position"** parameter allows you to select the position that the slats must take when the solar radiation protection function is enabled and the sun presence object = "1". The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **“Delay on activation [s]”** parameter defines the delay time between receiving the sun presence object = 1 (with the solar radiation protection function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

Using the **“If solar radiation protection function enabled and.. sun presence object=0”** parameter, you can define the behaviour of the device when operation is set for “solar radiation protection” and the value of the ***Ch.y/z - Sun presence*** object is “0” (absence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **“Percentage position”** and **“Delay on activation [s]”** parameters, plus the **“Louvres percentage position”** parameter in Venetian blind mode.

The **“Percentage position”** parameter allows you to select the position that the load must take when the solar radiation protection function is enabled and the sun presence object = “0”. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Louvres percentage position”** parameter allows you to select the position that the slats must take when the solar radiation protection function is enabled and the sun presence object = “0”. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Delay on activation [s]”** parameter defines the delay time between receiving the sun presence object = 0 (with the solar radiation protection function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

20.1.3 If heating function enabled and..

Using the **“If heating function enabled and.. sun presence object =1”** parameter, you can define the behaviour of the device when operation is set for “temperature adjustment →heating” and the value of the ***Ch.y/z - Sun presence*** object is “1” (presence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **“Percentage position”** and **“Delay on activation [s]”** parameters, plus the **“Louvres percentage position”** parameter in Venetian blind mode.

The **“Percentage position”** parameter allows you to select the position that the load must take when the temperature adjustment - heating function is enabled and the sun presence object = “→1”. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Louvres percentage position”** parameter allows you to select the position that the slats must take when the temperature adjustment → heating function is enabled and the sun presence object = “1”**.** The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **"Delay on activation [s]"** parameter defines the delay time between receiving the sun presence object = 1 (with the temperature adjustment → heating function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

Using the **"If heating function enabled and.. sun presence object =0"** parameter, you can define the behaviour of the device when operation is set for "temperature adjustment →heating" and the value of the ***Ch.y/z - Sun presence*** object is "0" (absence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **"Percentage position"** and **"Delay on activation [s]"** parameters, plus the **"Louvres percentage position"** parameter in Venetian blind mode.

The **"Percentage position"** parameter allows you to select the position that the load must take when the temperature adjustment → heating function is enabled and the sun presence object = "0". The values that can be set are:

- from 0% to **100% (default value)**, in steps of 5%

The **"Louvres percentage position"** parameter allows you to select the position that the slats must take when the temperature adjustment → heating function is enabled and the sun presence object = "0". The values that can be set are:

- from 0% to **100% (default value)**, in steps of 5%

The **"Delay on activation [s]"** parameter defines the delay time between receiving the sun presence object = 0 (with the temperature adjustment → heating function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

20.1.4 If air conditioning function enabled and..

Using the **"If air conditioning function enabled and.. sun presence object =1"** parameter, you can define the behaviour of the device when operation is set for "temperature adjustment →air conditioning" and the value of the ***Ch.y/z - Sun presence*** object is "1" (presence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **"Percentage position"** and **"Delay on activation [s]"** parameters, plus the **"Louvres percentage position"** parameter in Venetian blind mode.

The **"Percentage position"** parameter allows you to select the position that the load must take when the temperature adjustment → air conditioning function is enabled and the sun presence object = "1". The values that can be set are:

- from 0% to **100% (default value)**, in steps of 5%

The **“Louvres percentage position”** parameter allows you to select the position that the slats must take when the temperature adjustment → air conditioning function is enabled and the sun presence object = “1”. The values that can be set are:

- from 0% to **100% (default value)**, in steps of 5%

The **“Delay on activation [s]”** parameter defines the delay time between receiving the sun presence object = 1 (with the temperature adjustment → air conditioning function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

Using the **“If air conditioning function enabled and.. sun presence object =0”** parameter, you can define the behaviour of the device when operation is set for “temperature adjustment →air conditioning” and the value of the ***Ch.y/z - Sun presence*** object is “0” (absence of the sun). The values that can be set are:

- **no effect** **(default value)**
- percentage position

Selecting **percentage position** displays the **“Percentage position”** and **“Delay on activation [s]”** parameters, plus the **“Louvres percentage position”** parameter in Venetian blind mode.

The **“Percentage position”** parameter allows you to select the position that the load must take when the temperature adjustment → air conditioning function is enabled and the sun presence object = “0”. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Louvres percentage position”** parameter allows you to select the position that the slats must take when the temperature adjustment → air conditioning function is enabled and the sun presence object = “0”. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Delay on activation [s]”** parameter defines the delay time between receiving the sun presence object = 0 (with the temperature adjustment → air conditioning function enabled) and actually implementing the movement command. The parameter may have the following values:

- from **0 (default value)** to 3600, in steps of 1

20.1.5 Modifies percentage positions of automatic mode via bus

The position of the roller shutter or the Venetian blind slats for a specific automatic operation type set via the ETS parameters described above can be modified using the relative communication objects of the **“Modifies percentage positions of automatic mode via bus”** parameter, that can have the following values:

- **deactivated** **(default value)**
- active

Selecting **active** displays the ***Ch.y/z - Automatic mode position command*** communication objects (Data Point Type: 5.001 DPT_Scaling) , plus the ***Ch.y/z - Automatic mode louvres control command*** object if the operating mode is "Venetian blind". When one of the automatic operating modes described above is active, the slat position and regulation is adapted when these communication objects are received, and the new values replace the corresponding parameter values set via ETS. If the behaviour indicated for a certain operation type is “no effect”, these objects will be ignored for that specific type.

20.1.6 Behaviour on automatic calibration deactivation

The **"Behaviour on automatic calibration deactivation"** parameter is used to set the behaviour of the device when automatic mode is deactivated (the value 0 is received on the ***Ch.y/z - Automatic mode enabling*** communication object). The values that can be set are:

- **no effect** **(default value)**
- up movement
- down movement
- back to previous position
- follows last command received
- percentage position
- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated.
Selecting **percentage position** displays the **"Percentage position on automatic mode deactivation"** parameter and, in Venetian blind mode, the **"Louvres percentage position on automatic mode deactivation"** parameter.

The **"Percentage position on automatic mode deactivation"** parameter is used to select the position that the load must assume when the block is deactivated. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **"Louvres percentage position on automatic mode deactivation"** parameter is used to select the position that the slats must assume when the block is deactivated. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

NOTE: if automatic mode is activated after an ETS download, no action is performed until the telegrams are received on the objects relating to automatic mode (*Ch.y/z - Automatic mode function selection*, *Ch.y/z - Thermoregulation operating type* and *Ch.y/z - Sun presence*).
In the event of a BUS voltage drop, the current automatic mode status (function, operating type and sun presence) is saved so it can be restored when the voltage is reset. In addition, there is also a read request on the *Ch.y/z - Sun presence* object to ensure an update with the current status.

21 “Channels Y/Z alarms” menu (Shutter/Venetian blind function)

To prevent weather-related damage to the load connected to the actuator, you can enable communication objects that interface with the weather sensors (rain sensor, wind sensor, etc.) in order to automatise preventive load movements with the aim of safeguarding the load itself.
The menu is visible if the **“Alarm function”** parameter of the **Channels y/z - settings** menu is set with the value **active**.

The structure of the menu is as follows:

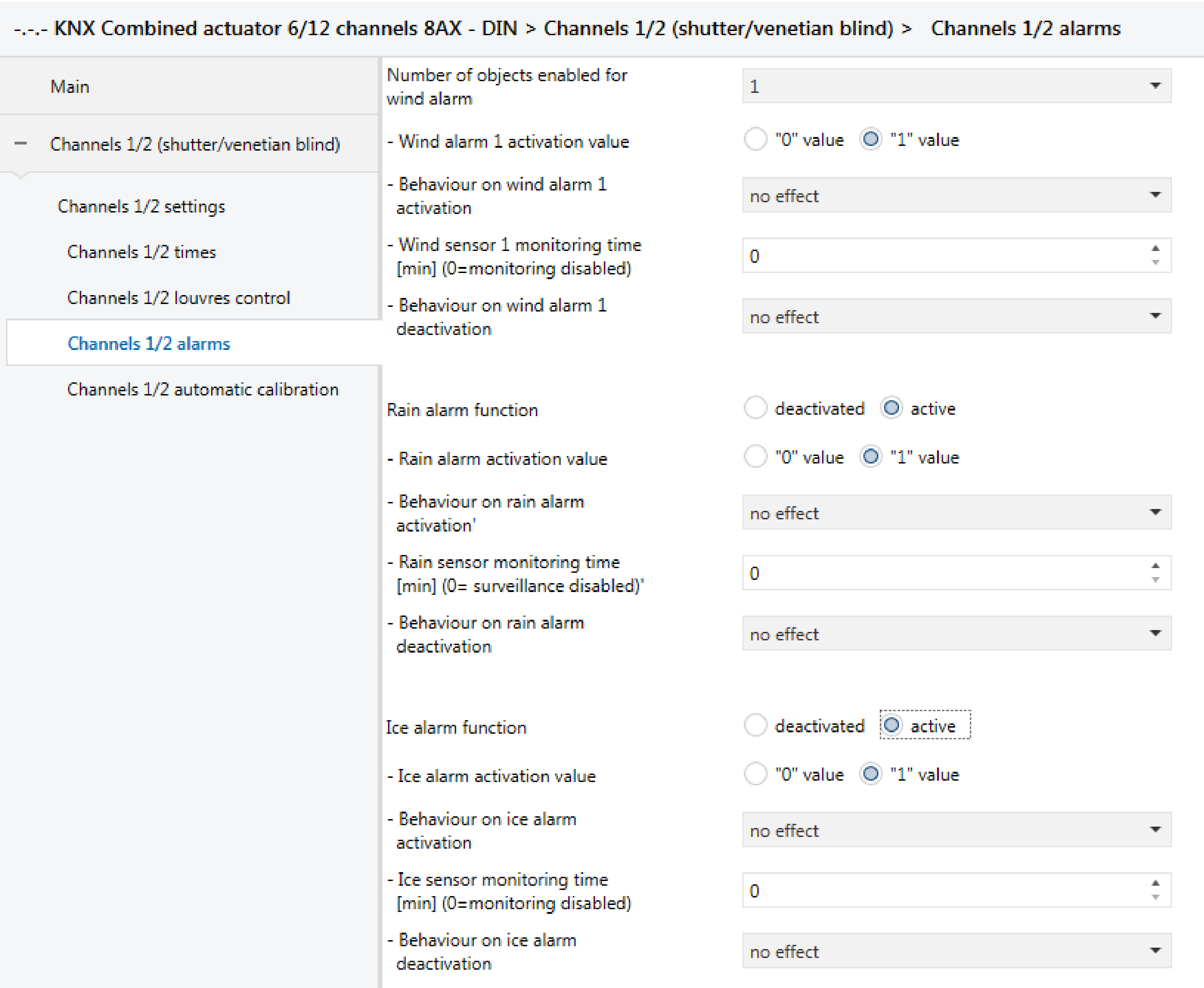


Fig. 21.1

21.1 Parameters

21.1.1 Number of objects enabled for wind alarm

The **“Number of objects enabled for wind alarm”** parameter defines how many communication objects should be used to monitor the wind. The values that can be set are:

- **from 0 (default value)** to 3, in steps of 1

Depending on the number of objects enabled, the ***Ch.y/z - Wind alarm 1*** (Data Point Type: 1.005 DPT_Alarm), ***Ch.y/z - Wind alarm 2*** (Data Point Type: 1.005 DPT_Alarm) and ***Ch.y/z - Wind alarm 3*** (Data Point Type: 1.005 DPT_Alarm) communication objects are displayed, along with the **“Wind alarm 1 activation value”**, **“Wind alarm 2 activation value”** and **“Wind alarm 3 activation value”** parameters.

In addition, for each wind alarm enabled, the **“Behaviour on wind alarm 1 activation”**, **“Behaviour on wind alarm 2 activation”**, **“Behaviour on wind alarm 3 activation”**, **“Wind sensor 1 monitoring time [min] (0=monitoring disabled)”**, **“Wind sensor 2 monitoring time [min] (0=monitoring disabled)”** and **“Wind sensor 3 monitoring time [min] (0=monitoring disabled)”** parameters are displayed.

21.1.2 Wind alarm X activation value (X = 1,2,3)

This parameter defines the value of the communication object associated with the wind alarm that triggers the alarm. The values that can be set are:

- “0” value
- **“1” value (default value)**

21.1.3 Behaviour on wind alarm X activation

The **“Behaviour on wind alarm X activation” (X=1,2,3)** parameters define the behaviour of the device when the associated wind alarm is active. They can have the following values:

- **no effect (default value)**
- up movement
- down movement
- percentage position
- stop

Selecting **percentage position** displays the **“Percentage position with wind alarm X activated”** parameters, plus the **“Louvres percentage position with wind alarm X activated”** parameters in Venetian blind mode.

The **“Percentage position with wind alarm X activated”** parameters are used to select the position that the load must take if the associated wind alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **“Louvres percentage position with wind alarm X activated** parameters are used to select the position that the slats must take if the associated wind alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

21.1.4 Wind sensor X monitoring time [min] (0=monitoring disabled)

The **“Wind sensor X monitoring time [min] (0=monitoring disabled)”** parameters define the monitoring time on the i-th wind sensor. They can have the following values:

- from **0 (default value)** to 60, in steps of 1

Selecting the value **0**, the i-th wind alarm object will not be monitored.
If the i-th wind alarm communication object is not received for a time period greater than the monitoring time, the actuator autonomously activates the associated weather alarm, interpreting the non-arrival of periodic telegrams as a fault in the wind sensor.

21.1.5 Behaviour on wind alarm X deactivation

The **“Behaviour on wind alarm X deactivation”** parameters are used to set the behaviour of the device when wind alarm X is deactivated.
The values that can be set are:

- **no effect** **(default value)**
- up movement
- down movement
- back to previous position
- follows last command received
- percentage position
- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated.

Selecting **percentage position** displays the **“Percentage position on wind alarm X deactivation”** parameters, plus the **“Louvres percentage position on wind alarm X deactivation”** parameters in Venetian blind mode.

The **“Percentage position on wind alarm X deactivation”** parameters are used to select the position that the load must take when the associated wind alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **“Louvres percentage position on wind alarm X deactivation”** parameters are used to select the position that the slats must take when the associated wind alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The relative priority for the wind alarms is as follows: Wind alarm 1 < Wind alarm 2 < Wind alarm 3.
Behaviour on alarm deactivation will be effectively implemented if and only if a wind alarm or another lower priority alarm is not active.

21.1.6 Rain alarm function

In addition to the wind alarm, it is also possible to enable a communication object for monitoring rain via the **“Rain alarm function”** parameter, which can have the following values:

- **deactivated** **(default value)**
- active

Selecting **active** displays the ***Ch.y/z - Rain alarm*** communication object (Data Point Type: 1.005 DPT_Alarm) and the **“Rain alarm activation value”**, **“Behaviour on rain alarm activation"** and **“Rain sensor monitoring time [min] (0=monitoring disabled)”** parameters.

21.1.7 Rain alarm activation value

The **"Rain alarm activation value"** parameter defines the value of the communication object associated with the rain alarm that triggers the alarm. The values that can be set are:

- "0" value
- **"1" value (default value)**

21.1.8 Behaviour on rain alarm activation

The **"Behaviour on rain alarm activation"** parameters define the behaviour of the device when the associated rain alarm is active. They can have the following values:

- **no effect (default value)**
- up movement
- down movement
- percentage position
- stop

Selecting **percentage position** displays the **"Percentage position with rain alarm activated"** parameters, plus the **"Louvres percentage position with rain alarm activated"** parameters in Venetian blind mode.

The **"Percentage position with rain alarm activated"** parameters are used to select the position that the load must take if the associated rain alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **"Louvres percentage position with rain alarm activated** parameter is used to select the position that the slats must take if the associated rain alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

21.1.9 Rain sensor monitoring time [min] (0=monitoring disabled)

The **"Rain sensor monitoring time [min] (0=monitoring disabled)"** parameter defines the monitoring time on the rain sensor. It can have the following values:

- from **0 (default value)** to 60, in steps of 1

Selecting **0**, the rain alarm object will not be monitored.
If the rain alarm communication object is not received for a time period greater than the monitoring time, the actuator autonomously activates the associated weather alarm, interpreting the non-arrival of periodic telegrams as a fault in the rain sensor.

21.1.10 Behaviour on rain alarm deactivation

The **"Behaviour on rain alarm deactivation"** parameter is used to set the behaviour of the device when the rain alarm is deactivated. The values that can be set are:

- **no effect (default value)**
- up movement
- down movement
- back to previous position
- follows last command received
- percentage position

- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated.
Selecting **percentage position** displays the **"Percentage position on rain alarm deactivation"** parameter and, in Venetian blind mode, the **"Louvres percentage position on rain alarm deactivation"** parameter.

The **"Percentage position on rain alarm deactivation"** parameter is used to select the position that the load must assume when the associated rain alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **"Louvres percentage position on rain alarm deactivation"** parameter is used to select the position that the slats must assume when the rain alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

21.1.11 Ice alarm function

In addition to the wind and rain alarms, it is also possible to enable a communication object for monitoring ice via the **"Ice alarm function"** parameter, which can have the following values:

- **deactivated (default value)**
- active

Selecting **active** displays the ***Ch.y/z - Ice alarm*** communication object (Data Point Type: 1.005 DPT_Alarm) and the **"Ice alarm activation value"**, **"Behaviour on ice alarm activation"** and **"Ice sensor monitoring time [min] (0=monitoring disabled)"** parameters.

21.1.12 Ice alarm activation value

The **"Ice alarm activation value"** parameter defines the value of the communication object associated with the ice alarm that triggers the alarm. The values that can be set are:

- "0" value
- **"1" value (default value)**

21.1.13 Behaviour on ice alarm activation

The **"Behaviour on ice alarm activation"** parameter defines the behaviour of the device when the ice alarm is active. It can have the following values:

- **no effect (default value)**
- up movement
- down movement
- percentage position
- stop

Selecting **percentage position** displays the **"Percentage position with ice alarm activated"** parameters, plus the **"Louvres percentage position with ice alarm activated"** parameters in Venetian blind mode.

The **"Percentage position with ice alarm activated"** parameters are used to select the position that the load must take if the associated ice alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

The **"Louvres percentage position with ice alarm activated** parameters are used to select the position that the slats must take if the associated ice alarm is triggered. The values that can be set are:

- from **0% (default value)** to 100%, in steps of 5%

21.1.14 Ice sensor monitoring time [min] (0=monitoring disabled)

The **"Ice sensor monitoring time 1 [min] (0=monitoring disabled)"** parameter defines the monitoring time on the ice sensor. It can have the following values:

- from **0 (default value)** to 60, in steps of 1

Selecting **0**, the ice alarm object will not be monitored.
If the ice alarm communication object is not received for a time period greater than the monitoring time, the actuator autonomously activates the associated weather alarm, interpreting the non-arrival of periodic telegrams as a fault in the ice sensor.

21.1.15 Behaviour on ice alarm deactivation

The **"Behaviour on ice alarm deactivation"** parameter is used to set the behaviour of the device when the ice alarm is deactivated. The values that can be set are:

- **no effect** **(default value)**
- up movement
- down movement
- back to previous position
- follows last command received
- percentage position
- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated.
Selecting **percentage position** displays the **"Percentage position on ice alarm deactivation"** parameter and, in Venetian blind mode, the **"Louvres percentage position on ice alarm deactivation"** parameter.

The **"Percentage position on ice alarm deactivation"** parameter is used to select the position that the load must assume when the associated ice alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **"Louvres percentage position on ice alarm deactivation"** parameter is used to select the position that the slats must assume when the ice alarm is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

21.1.16 Weather alarm priorities

The **"Weather alarm priorities"** parameter defines the priority of the weather alarm events. The values that can be set are:

- **H=wind; M=rain; L=ice;** **(default value)**
- H=wind; M=ice; L=rain;
- H= ice; M= rain; L= wind;

- H= ice; M= wind; L= rain;
- H= rain; M= wind; L= ice;
- H= rain; M= ice; L= wind;

In general, all the defined behaviour forms on alarm deactivation are only actually implemented if an alarm with a lower priority is not active. Otherwise, the actuator will return the roller shutter/Venetian blind to the position corresponding to the highest priority alarm still active.

In addition, the device indicates the active weather alarm condition by means of the alternated blinking of the green LEDs associated with channels y/z. If a command with a higher priority (forced positioning or block) arrives, the blinking stops while the command is being executed. Afterwards, the blinking starts again if the alarm condition is still valid.
In short, the alternated blinking indicates that a weather alarm is active and is affecting the output status.

When the BUS voltage is reset, any possible alarm must be reset and the status read requests must be sent on the weather alarm objects in order to ensure realignment with the field.

For diagnostic purposes, the device signals the weather alarm status via the ***Ch.y/z - Alarms*** communication objects (which are therefore input/output), regardless of whether or not there are any active functions with a higher priority. The communication object is only sent upon request.

22 “Channels Y/Z forced positioning” menu (Shutter/Venetian blind function)

It is possible to force the load status in a certain (settable) condition after receiving the ***Ch.y/z - Priority command*** communication object (Data Point Type: 2.008 DPT_Direction1_Control) which activates the forced positioning function; until it is deactivated, any command received on all other input communication objects will not be executed. The forced positioning function is therefore the one with the highest priority.
The device always signals the activation of the forced positioning function via the ***Ch.y/z - Priority command*** communication object. The communication object is sent on request, when the BUS voltage is recovered, and spontaneously. It is sent spontaneously when the status passes from "activate forced positioning ON" to "activate forced positioning OFF" or "deactivate forced positioning", and vice versa.
The ***Ch.y/z - Priority command*** object is therefore an input/output object. With KNX technology, a communication object is sent to a single destination group address, so if this object is associated with more than one group address, the device will send the BUS telegram to the group address where the object has the “S” (sending) flag. Vice versa, the device will update its value when a BUS telegram is received on any group address associated with the object, regardless of the “S” flag.

The menu is visible if the **“Forced positioning function”** parameter of the **Channels y/z - settings** menu is set with the value **active**.

The structure of the menu is as follows:

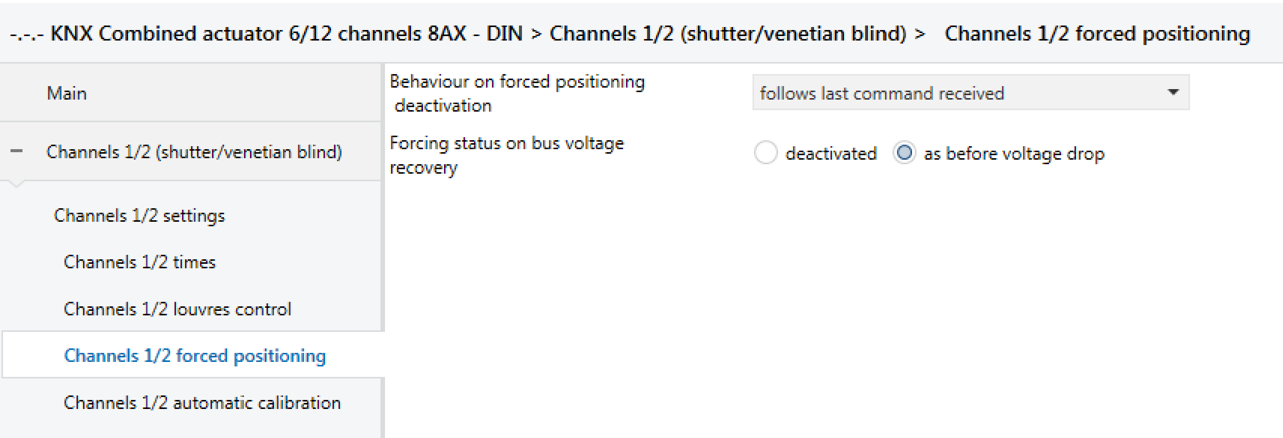


Fig. 22.1

The semantics of the command received from the BUS follows what is shown in the following table:

bit 1	bit 0	
0	0	Forced positioning deactivation
0	1	Forced positioning deactivation
1	0	Forced positioning UP
1	1	Forced positioning DOWN

When a priority command with the forced positioning DOWN activation value is received, the actuator brings the load to the 100% (fully down) position; vice versa, when a priority command with the forced positioning UP value is received, the actuator brings the load to the 0% (fully up) position.

22.1 Parameters

22.1.1 Behaviour on forced positioning deactivation

When the forced positioning deactivation command is received, the status to which the output switches the relay is defined by the **"Behaviour on forced positioning deactivation"** parameter. The possible values are:

- no effect
- up movement
- down movement
- back to previous position
- **follows last command received (default value)**
- percentage position
- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which forced positioning is ended.

Selecting **percentage position** displays the **"Percentage position when deactivating forced positioning"** parameter and, in Venetian blind mode, the **"Louvres percentage position when forced positioning is deactivated"** parameter.

The **"Percentage position when deactivating forced positioning"** parameter is used to select the position that the load must assume when forced positioning is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **"Louvres percentage position when forced positioning is deactivated"** parameter is used to select the position that the slats must assume when forced positioning is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

22.1.2 Forcing status on bus voltage recovery

The **"Forcing status on bus voltage recovery"** parameter is used to determine the status of the forced positioning function when the BUS voltage is reset. This parameter is useful if the function is active when the BUS voltage drops and you want to have the actuator behaviour not be changed after voltage failure. The parameter may assume the following values:

- deactivated
- **as before voltage drop (default value)**

If you select **deactivated** (and the forced positioning function was activated before the BUS voltage drop), when the BUS voltage is reset the forced positioning function will be deactivated and the actuator will take on the value determined by the **"Behaviour on forced positioning deactivation"** parameter. If the value set for the latter parameter is **follows last command received**, the actuator will execute the last command received prior to the BUS voltage drop, so the command must be stored to the non-volatile memory.

If you select **as before bus voltage drop** (and the forced positioning function was activated before the BUS voltage drop), when the BUS voltage is reset the forced positioning function will be reactivated and the actuator will reproduce the position adopted prior to the voltage drop. If a forced positioning deactivation command is received and the **Behaviour on forced positioning deactivation** parameter assumes the value **follows last command received**, the actuator executes the last command received before the BUS voltage drop (so the command must be stored to the non-volatile memory).

23 “Channels Y/Z block” menu (Shutter/Venetian blind function)

It is possible to block the device in a certain (settable) condition after receiving the ***Ch.y/z - Block*** communication object (Data Point Type: 1.003 DPT_Enable) which activates the block function. Until this function is deactivated, no other command received on any communication object is executed (apart from the forced positioning activation command).
The device always signals the activation of the block function via the ***Ch.y/z - Block*** communication object, regardless of whether there are any active functions with a higher priority. The communication object is sent on request, when the BUS voltage is recovered, and spontaneously on change of the function activation status.
The ***Ch.y/z - Block*** object is therefore an input/output object. With KNX technology, a communication object is sent to a single destination group address, so if this object is associated with more than one group address, the device will send the BUS telegram to the group address where the object has the “S” (sending) flag. Vice versa, the device will update its value when a BUS telegram is received on any group address associated with the object, regardless of the “S” flag.

The menu is visible if the **“Block function”** parameter of the **Channels y/z - settings** menu is set with the value **active**.

The structure of the menu is as follows:

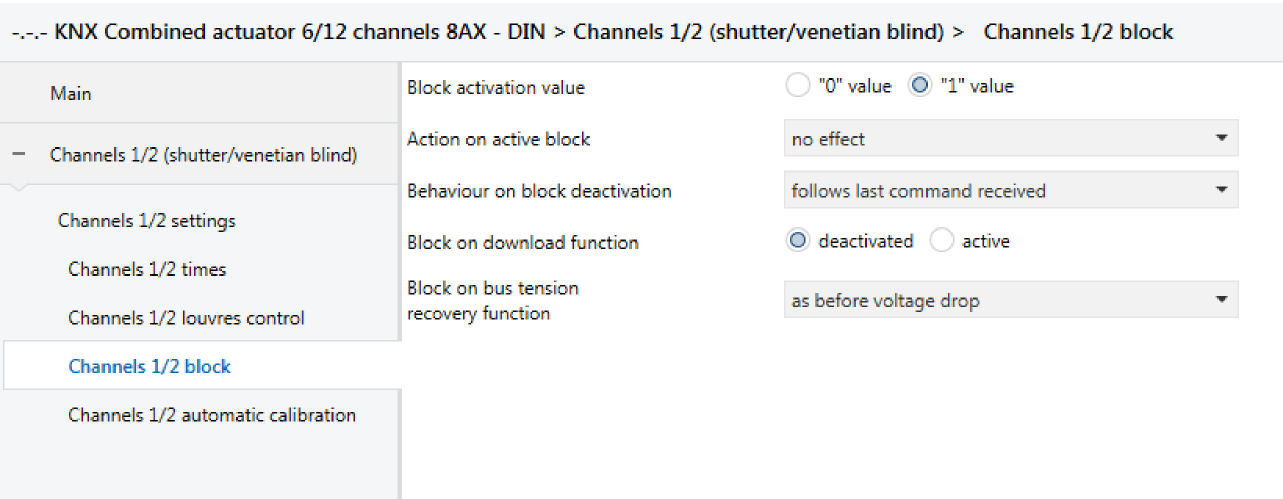


Fig. 23.1

23.1 Parameters

23.1.1 Block activation value

The **“Block activation value”** parameter determines which logic value activates the actuator block function; the opposite value will deactivate the function. The values that can be set are:

- “0” value
- **“1”** value **(default value)**

23.1.2 Action on active block

The **“Action on active block”** parameter is used to set the behaviour of the actuator channel if the block function is activated. The possible values are:

- **no effect** **(default value)**

- up movement
- down movement
- percentage position
- stop

Selecting **percentage position** displays the **“Percentage position with block activated”** parameter, plus the **“Louvres percentage position with block activated”** parameter in Venetian blind mode.

The **“Percentage position with block activated”** parameter is used to select the position that the load must assume when the block is activated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **“Louvres percentage position with block activated”** parameter is used to select the position that the slats must assume when the block is activated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

23.1.3 Behaviour on block deactivation

The **“Behaviour on block deactivation”** parameter is used to set the behaviour of the actuator channel when the block is deactivated. The possible values are:

- no effect
- up movement
- down movement
- back to previous position
- **follows last command received** **(default value)**
- percentage position
- stop

If you select **follows last command received**, the output follows the dynamics determined by the last command, as if command execution was begun in the moment when the command was actually received. Essentially, the command is executed in the background and is applied to the output in the moment in which the block is deactivated.

Selecting **percentage position** displays the **“Percentage position on block deactivation”** parameter, plus the **“Louvres percentage position on block deactivation”** parameter in Venetian blind mode.

The **“Percentage position on block deactivation”** parameter is used to select the position that the load must assume when the block is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

The **“Louvres percentage position on block deactivation”** parameter is used to select the position that the slats must assume when the block is deactivated. The values that can be set are:

- from 0% to 100%, in steps of 5% **50% (default value)**

23.1.4 Block on download function

The **“Block on download function”** parameter sets the block function status after downloading the application from ETS. The possible values are:

- **deactivated** **(default value)**
- active

23.1.5 Block on bus tension recovery function

The **“Block on bus tension recovery function”** parameter sets the block function status after a BUS voltage reset. The possible values are:

- deactivated
- active
- **as before voltage drop** **(default value)**

If you select **deactivated** (and the block function was activated before the BUS voltage drop), when the BUS voltage is reset the block function will be deactivated and the actuator will take on the value determined by the **“Behaviour on block deactivation”** parameter. If the value set for this last parameter is **follows last command received**, the output will execute the last command received before the BUS voltage drop that, as a result, must be stored to the non-volatile memory.

If you select **active** or **as before voltage drop** (and the block function was activated before the BUS voltage drop), when the BUS voltage is reset the block function will be reactivated and the actuator will take on the value determined by the **“Action on active block”** parameter. If a block deactivation command is received and the **Behaviour on block deactivation** parameter assumes the value **follows last command received**, the actuator executes the last command received before the BUS voltage drop (so the command must be stored to the non-volatile memory).

24 “Channels Y/Z counters” menu (Shutter/Venetian blind function)

This is used to enable a count of the up/down period and the number of operations of the relays associated with channels y/z, by setting the parameters that refer to the counts.
The menu is visible if the **“Counters”** parameter of the **Channels y/z - settings** menu is set with the value **active**.

The structure of the menu is as follows:

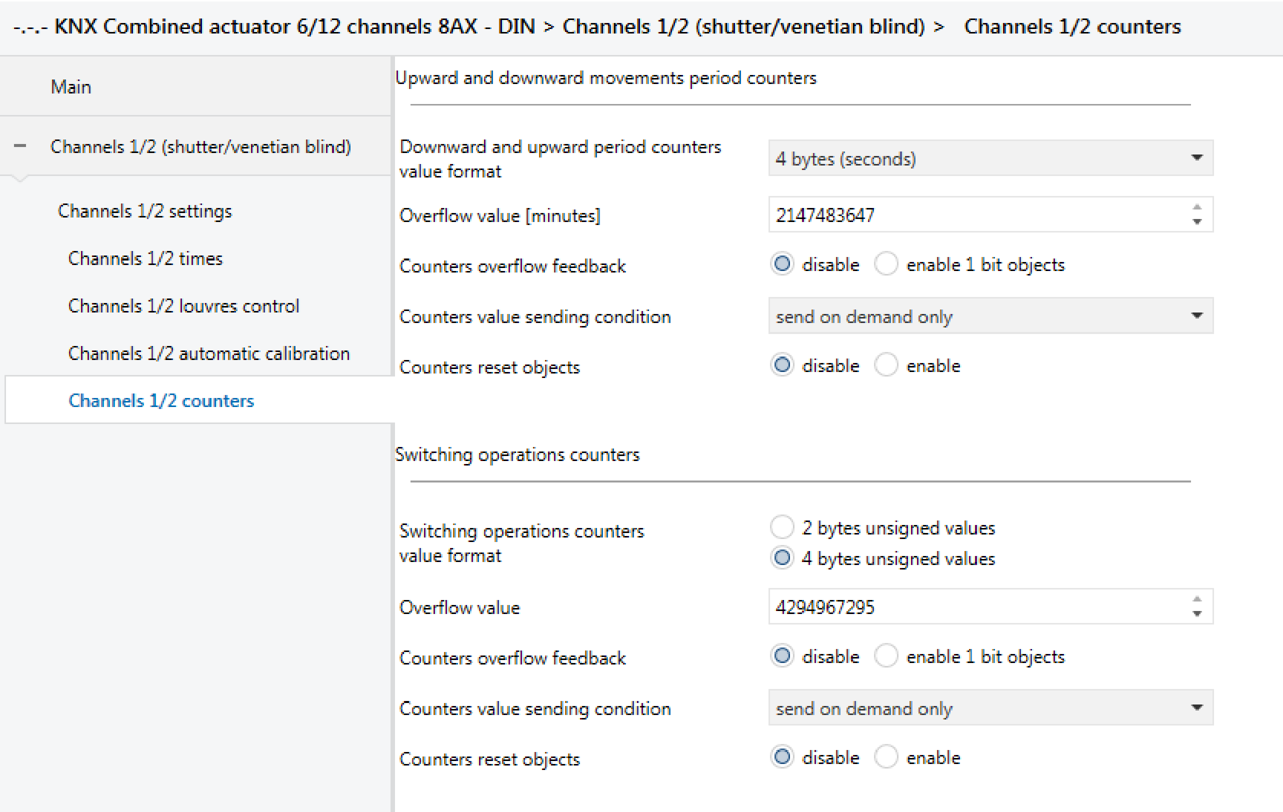


Fig. 24.1

24.1 Parameters of the “Upward and downward movements period counters” menu

The device can signal the count of the total up and down movement time of the load linked to channels y/z. The "up" time count is increased when the channel y contact (specifically for upward movement) is closed; in the same way, the "down" time count is increased when the channel z contact (specifically for downward movement) is closed. The count is made with the BUS voltage, or without the BUS voltage but with the 230V auxiliary voltage; otherwise, the counter is not increased.

24.1.1 Downward and upward period counters value format

The counter that is used for the count can have different units of measure depending on the format selected for transmitting the value on the KNX BUS; the **“Downward and upward period counters value format”** parameter is therefore used to define the size and code of the communication objects used to communicate the counter value, and hence the counter measurement unit. The values that can be set are:

- **4 byte (seconds)** **(default value)**
- 2 byte (minutes)

- 2 byte (hours)

The value set for this item will condition the values that can be set for the **“Overflow value”** parameter and the format of the ***Ch.y/z - Upward movements period counter*** and ***Ch.y/z - Downward movements period counter*** communication objects. The initial value is always 0, regardless of the format selected.

24.1.2 Overflow value

The **“Overflow value”** parameter is used to set the maximum value for the downward and upward period counters; in fact, it is possible to set the maximum counter value - i.e. the value beyond which the counter is in an overflow condition.
Depending on the value set for the **“Downward and upward period counters value format”** parameter, the values that can be set for this item will be different:

- If the counter format is **4 byte (seconds)**, the ***Ch.y/z - Upward movements period counter*** and ***Ch.y/z - Downward movements period counter*** communication objects (Data Point Type: 13.100 DPT_LongDeltaTimeSec) are visible and the values that can be set for the above parameter are:
  - from 0 to **2147483647 (default value ≈ 68 years)**, in steps of 1
- If the counter format is **2 byte (minutes)**, the ***Ch.y/z - Upward movements period counter*** and ***Ch.y/z - Downward movements period counter*** communication objects (Data Point Type: 7.006 DPT_TimePeriodMin) are visible and the values that can be set for the above parameter are:
  - from 0 to **65535 (default value ≈ 45.5 days)**, in steps of 1
- If the counter format is **2 byte (hours)**, the ***Ch.y/z - Upward movements period counter*** and ***Ch.y/z - Downward movements period counter*** communication objects (Data Point Type: 7.007 DPT_TimePeriodHrs) are visible and the values that can be set for the above parameter are:
  - from 0 to **65535 (default value ≈ 7.4 years)**, in steps of 1

Once the maximum value has been reached, the counter restarts from 0.

24.1.3 Counter overflow feedback

The **“Counters overflow feedback”** parameter is used to enable the display, and therefore the use, of the communication objects that indicate when the downward and upward period counter has exceeded its maximum value. The values that can be set are:

- **disable** **(default value)**
- enable 1 bit objects

Selecting **enable 1 bit objects** displays the ***Ch.y/z - Upward movements period counter overflow*** and ***Ch.y/z - Downward movements period counter overflow*** communication objects (Data Point Type: 1.002 DPT_Bool), via which the device indicates the overflow of the downward and upward period counter. When the overflow occurs, a value of “1” is sent; a value of “0” is never sent.

24.1.4 Counter value sending condition

The **“Counter value sending condition”** parameter defines the conditions for sending the current value of the downward and upward period counter. The values that can be set are:

- **send on demand only** **(default value)**
- send in case of change
- send periodically
- sends on change and periodically

Selecting **send in case of change** or **sends on change and periodically** displays the **“Minimum counter variation for sending value”** parameter, whereas if you select **send periodically** or **send on change and periodically** the **“Counter sending period”** parameter will be visualised.
Selecting the value **send on demand only**, no new parameter will be enabled because the downward and upward period counter value is not sent spontaneously by the device; only in the case of a status read request will it send the user a telegram in response to the command received, giving information about the current value of the counter.
After a BUS voltage reset, the value of the counters should be sent in order to update any connected devices.

The **"Minimum counter variation for sending value"** parameter, which is visible if the downward and upward period counter value is sent on change, is used to define the minimum counter variation (in relation to the last value sent) that causes the new value to be spontaneously sent. The values that can be set are:

- from 1 to 100, in steps of 1 **(default value 10)**

The unit of measurement of the minimum variation is the same one set for the counter format.

The **“Counter sending period [seconds]”** parameter, which is visible if the downward and upward period counter value is sent periodically, is used to define the frequency for spontaneously sending telegrams indicating the current counter value. The values that can be set are:

- from 1 to 255, in steps of 1 **(default value 15)**

24.1.5 Counters reset objects

The **“Counters reset objects”** parameter is used to enable the display, and therefore the use, of the ***Ch.y/z - Upward movement period counter reset*** and ***Ch.y/z - Downward movement period counter reset*** communication objects (Data Point Type: 1.017 DPT_Trigger) in order to receive - via the BUS - the downward and upward period counter reset command for resetting the value. The values that can be set are:

- **disable (default value)**
- enable

Selecting **enable** displays the ***Ch.y/z - Upward movement period counter reset*** and ***Ch.y/z - Downward movement period counter reset*** communication objects, via which the device receives the reset command for the downward and upward period counter. If the value “1” or “0” is received, the associated counter is reinitialised to 0.

In the event of a BUS voltage failure with the 230V auxiliary voltage not present (or vice versa), the downward and upward period counter value must be saved to a non-volatile memory and reset when the voltage is reset.

24.2 Parameters of the “Switching operation counters” menu

The device can signal the count of the number of switching operations carried out by the two relays associated with channel y and channel z. The count is based on the detection of a relay status variation. Any operations carried out on BUS voltage failure or reset, or with ETS download, are only counted if the 230V auxiliary voltage is present. The count is also made in the absence of the BUS voltage but with the 230V auxiliary voltage active.

24.2.1 Switching operation counters value format

The counters can have different measurement units depending on the format selected for transmitting the value on the KNX BUS; the **“Switching operation counters value format”** parameter is therefore used to define the size and code of the communication objects used to communicate the counter value, and hence the counter measurement unit. The values that can be set are:

- 2 byte unsigned values
- **4 byte unsigned values (default value)**

The value set for this item will condition the values that can be set for the **“Overflow value”** parameter and the format of the ***Ch.y/z - Relay y switching operation counter*** and ***Ch.y/z - Relay z switching operation counter*** communication objects. The initial value is always 0, regardless of the format selected.

24.2.2 Overflow value

The **“Overflow value”** parameter is used to set the maximum value for the switching operations counters; in fact, it is possible to set the maximum counter value - i.e. the value beyond which the counter is in an overflow condition.
Depending on the value set for the **“Switching operation counters value format”** parameter, the values that can be set for this item will be different:

- If the counter format is **2 byte unsigned**, the ***Ch.y/z - Relay y switching operation counter*** and ***Ch.y/z - Relay z switching operation counter*** communication objects (Data Point Type: 7.001 DPT_Value_2_Ucount) will be visible and the values that can be set for the above parameter are:

  - from 0 to **65535 (default value)**, in steps of 1

- If the counter format is **4 byte unsigned**, the ***Ch.y/z - Relay y switching operation counter*** and ***Ch.y/z - Relay z switching operation counter*** communication objects (Data Point Type: 12.001 DPT_Value_4_Ucount) will be visible and the values that can be set for the above parameter are:

  - from 0 to **4294967295 (default value)**, in steps of 1

Once the maximum value has been reached, the counter restarts from 0.

24.2.3 Counter overflow feedback

The **“Counter overflow feedback”** parameter is used to enable the display, and therefore the use, of the communication objects that indicate when the switching operation counters have exceeded their maximum value. The values that can be set are:

- **disable (default value)**
- enable 1 bit objects

Selecting **enable 1 bit objects** displays the ***Ch.y/z - Relay y switching operation counter overflow*** and ***Ch.y/z - Relay z switching operation counter overflow*** communication objects (Data Point Type: 1.002

DPT_Bool), with which the device indicates the overflow of the switching operation counter. When the overflow occurs, a value of “1” is sent; a value of “0” is never sent.

24.2.4 Counter value sending condition

The **“Counters value sending condition”** parameter is used to define the conditions for sending the current value of the switching operation counter. The values that can be set are:

- **send on demand only** **(default value)**
- send in case of change
- send periodically
- sends on change and periodically

Selecting **send in case of change** or **sends on change and periodically** displays the **“Minimum counter variation for sending value”** parameter, whereas if you select **send periodically** or **send on change and periodically** the **“Counter sending period”** parameter will be visualised.
Selecting the value **send on demand only**, no new parameter will be enabled because the downward and upward period counter value is not sent spontaneously by the device; only in the case of a status read request will it send the user a telegram in response to the command received, giving information about the current value of the counter.
After a BUS voltage reset, the value of the counters should be sent in order to update any connected devices.

The **"Minimum counter variation for sending value"** parameter, which is visible if the downward and upward period counter value is sent on change, is used to define the minimum counter variation (in relation to the last value sent) that causes the new value to be spontaneously sent. The values that can be set are:

- from 1 to 100, in steps of 1 **(default value 10)**

The unit of measurement of the minimum variation is the same one set for the counter format.

The **“Counter sending period [seconds]”** parameter, which is visible if the downward and upward period counter value is sent periodically, is used to define the frequency for spontaneously sending telegrams indicating the current counter value. The values that can be set are:

- from 1 to 255, in steps of 1 **(default value 15)**

24.2.5 Counters reset objects

The **“Counters reset objects”** parameter is used to enable the display, and therefore the use, of the ***Ch.y/z - Relay y switching operation counter reset*** and ***Ch.y/z - Relay z switching operation counter reset*** communication objects (Data Point Type: 1.017 DPT_Trigger) in order to receive - via the BUS - the reset command for the associated switching operation counter for resetting the value. The values that can be set are:

- **disable** **(default value)**
- enable

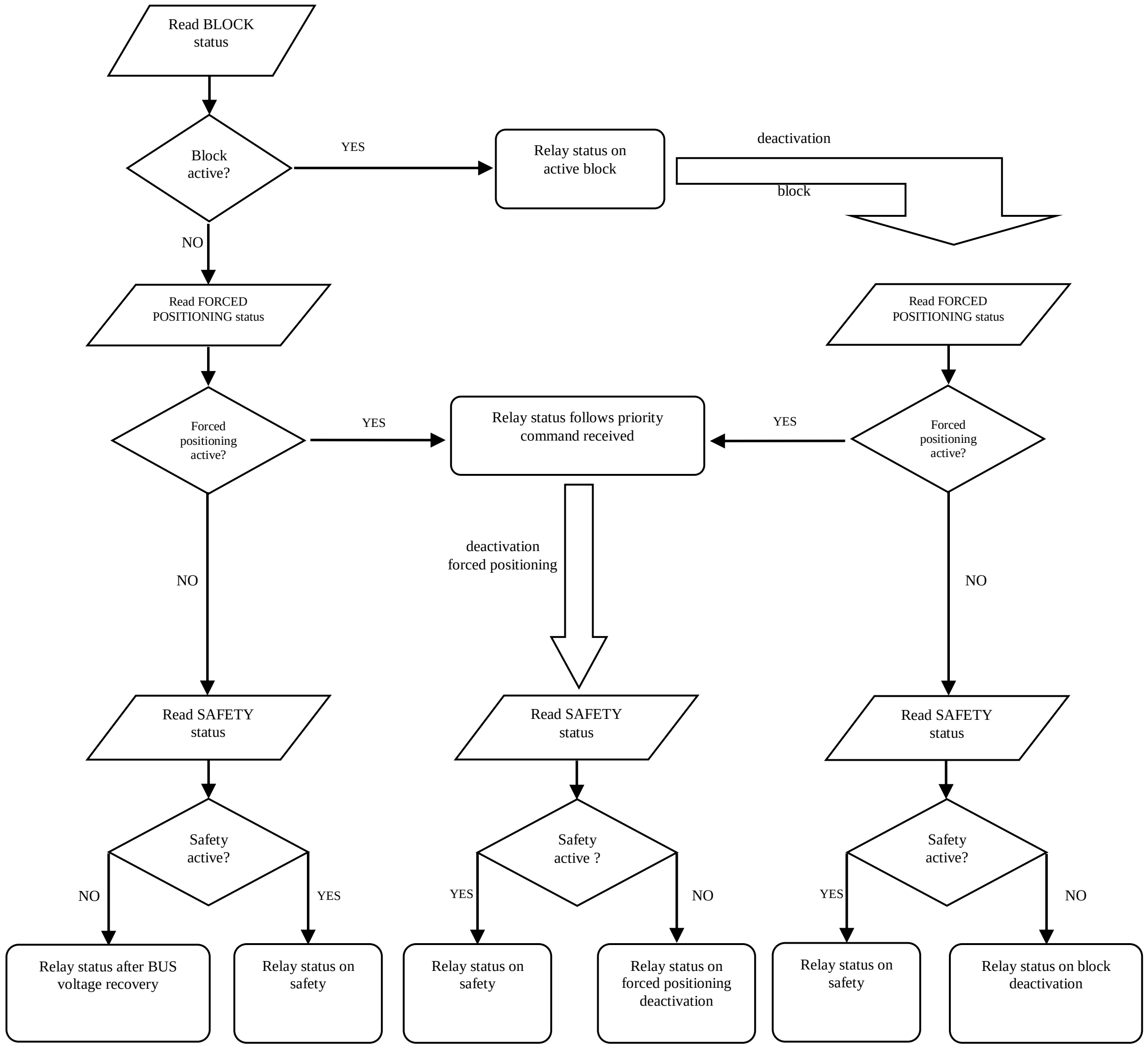
Selecting **enable** displays the ***Ch.y/z - Relay y switching operation counter reset*** and ***Ch.y/z - Relay z switching operation counter reset*** communication objects, via which the device receives the reset command for the switching operation counter. If the value “1” or “0” is received, the associated counter is reinitialised to 0.

In the event of a BUS voltage drop with the 230V auxiliary voltage not present (or vice versa), the switching operation counter value must be saved to a non-volatile memory and reset when the BUS voltage is reset.

25 Priority of channel X functions

Function	Priority	
On/off switching	1	Low
Timed switching	1	
Delayed switching	1	
Blinking	1	
Scene	1	
Logic function (if used for enabling of commands)	2	
Relay status after safety time	3	
Relay status after forced positioning	4	
Relay status on block deactivation	5	
Relay status after BUS voltage recovery	6	
Safety status at BUS voltage recovery	7	
Blinking mode at BUS voltage recovery	8	
Forced positioning status at BUS voltage recovery	9	
Safety	10	
Forced positioning	11	
Block	12	
Local actuator command (with “local command push-button” function)	13	
Block function on downloading/BUS voltage recovery (if value = active)	14	
Relay status at BUS voltage failure	15	high

When the BUS voltage is reset, channel x behaves as described in the following flow diagram:

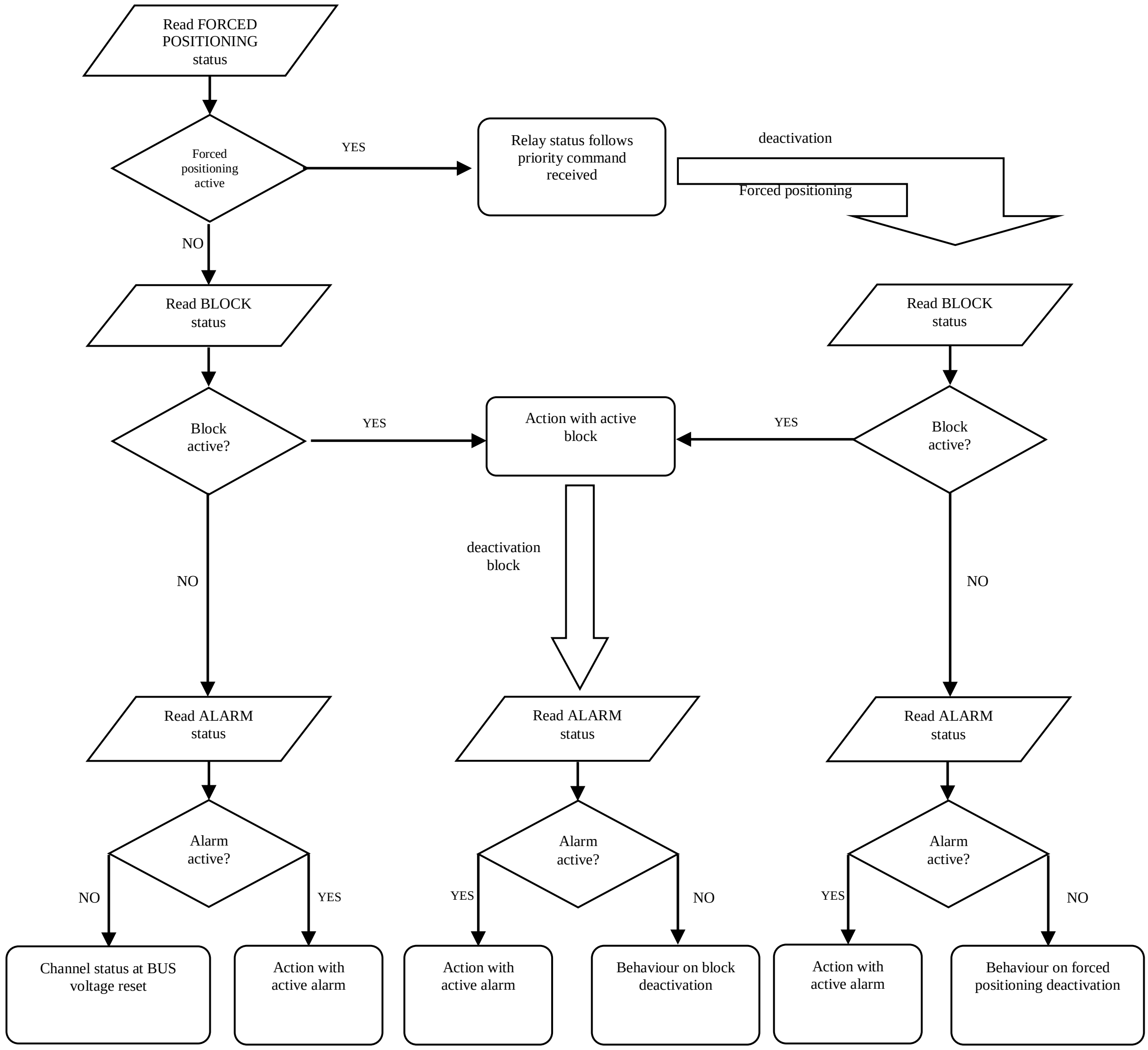

Read BLOCK status
Block active?
YES
Relay status on active block
deactivation block
NO
Read FORCED POSITIONING status
Read FORCED POSITIONING status
Forced positioning active?
YES
Relay status follows priority command received
YES
Forced positioning active?
deactivation forced positioning
NO
NO
Read SAFETY status
Read SAFETY status
Read SAFETY status
Safety active?
Safety active ?
Safety active?
NO
YES
YES
NO
YES
NO
Relay status after BUS voltage recovery
Relay status on safety
Relay status on safety
Relay status on forced positioning deactivation
Relay status on safety
Relay status on block deactivation

26 Priority of channel Y/Z functions

The priorities of the functions implemented by channels y/z with roller shutter/Venetian blind (combined) operation is shown in the table below:

Function	Priority	
Up/down movement	1	low
Slat stop/regulation	1	
% position command	1	
Slat % position command	1	
Scene	1	
Automatic calibration	2	
Automatic mode	3	
Behaviour on weather alarm deactivation (rain/wind/ice)	4	
Behaviour on forced positioning deactivation	5	
Behaviour on block deactivation	6	
Weather alarms	7	
Block	8	
Forced positioning	9	
Front button keys (with test function)	10	
Actuator behaviour at bus voltage recovery	11	
Block status at bus voltage recovery	12	
Forced positioning status on BUS voltage recovery	13	
Status on 230V voltage drop (stop/no action)	14	
Status on BUS voltage drop (stop/no action)	15	high

When the BUS voltage is reset, channel x behaves as described in the following flow diagram:


Read FORCED POSITIONING status
Forced positioning active
YES
NO
Relay status follows priority command received
deactivation
Forced positioning
Read BLOCK status
Block active?
YES
NO
Action with active block
deactivation block
Read BLOCK status
Block active?
YES
NO
Read ALARM status
Alarm active?
NO
YES
Channel status at BUS voltage reset
Action with active alarm
Read ALARM status
Alarm active?
YES
NO
Action with active alarm
Behaviour on block deactivation
Read ALARM status
Alarm active?
YES
NO
Action with active alarm
Behaviour on forced positioning deactivation

27 Signalling of ETS download in progress / application deleted

During the download of the ETS application, the red physical address programming LED blinks cyclically approx. every 1.5 seconds. The LED is deactivated at the end of the download.

Following the “delete application” by ETS, the device switches to the “no configuration” status; also in this case, the red physical address programming LED blinks cyclically approx. every 1.5 seconds. The signalling is deactivated only after the ETS application is downloaded again.

28 Communication objects

The communication objects are sub-divided according to the function implemented by the associated channels.

28.1 Communication objects for “Switching” operation

The communication objects implemented in the device and associated with "switching" operation are shown in the following table:

Output objects:

Ch												Object name	Object function	Description	Datapoint type
1	2	3	4	5	6	7	8	9	10	11	12				
0	21	42	63	84	105	126	147	168	189	210	231	Ch.x - Status	On/Off status	Sends the status of the load connected to the output	1.001 DPT_Switch
14	35	56	77	98	119	140	161	182	203	224	245	Ch.x - Logical operation outcome	Logic	Logic function output	1.002 DPT_Bool
15	36	57	78	99	120	141	162	183	204	225	246	Ch.x - Safety	Monitoring	Used to monitor a sensor for the safety function	1.001 DPT_Switch
16	37	58	79	100	121	142	163	184	205	226	247	Ch.x - Priority command	On/Off forcing positioning	Forces the load to an on/off value	2.001 DPT_Switch_Control
17	38	59	80	101	122	143	164	185	206	227	248	Ch.x - Block	Switching On/Off	Blocks the status of a load in a condition that can be parametrised	1.003 DPT_Enable
18	39	60	81	102	123	144	165	186	207	228	249	Ch.x - Operating time counter	Value 0 .. 2147483647 [s]	Sends the counter value (expressed in seconds)	13.100 DPT_LongDeltaTimeSec

18	39	60	81	102	123	144	165	186	207	228	249	Ch.x - Operating time counter	Value 0 .. 65535 [min]	Sends the counter value (expressed in minutes)	7.006 DPT_TimePeriodMin
18	39	60	81	102	123	144	165	186	207	228	249	Ch.x - Operating time counter	Value 0 .. 65535 [h]	Sends the counter value (expressed in hours)	7.007 DPT_TimePeriodHrs
18	39	60	81	102	123	144	165	186	207	228	249	Ch.x - Switching operation counter	Value 0 .. 65535	Sends the counter value	7.001 DPT_Value_2_Ucount
18	39	60	81	102	123	144	165	186	207	228	249	Ch.x - Switching operation counter	Value 0 .. 4294967295	Sends the counter value	12.001 DPT_Value_4_Ucount
19	40	61	82	103	124	145	166	187	208	229	250	Ch.x - Operating time counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
19	40	61	82	103	124	145	166	187	208	229	250	Ch.x - Switching operation counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
253												230V voltage failure alarm	Alarm/No alarm	Signals 230V absence	1.005 DPT_Alarm

Input objects:

Ch.												Object name	Object function	Description	Datapoint type
1	2	3	4	5	6	7	8	9	10	11	12				
1	22	43	64	85	106	127	148	169	190	211	232	Ch.x - Switch	On/Off	Receives the load activation/deactivation commands	1.001 DPT_Switch
2	23	44	65	86	107	128	149	170	191	212	233	Ch.x - Delayed switch	On/Off	Receives the commands for load activation/deactivation with delay	1.001 DPT_Switch
3	24	45	66	87	108	129	150	171	192	213	234	Ch.x - Delay on activation	Set value	Activation delay value	7.005 DPT_TimePeriodSec
4	25	46	67	88	109	130	151	172	193	214	235	Ch.x - Delay on deactivation	Set value	Deactivation delay value	7.005 DPT_TimePeriodSec

5	26	47	68	89	110	131	152	173	194	215	236	Ch.x - Timed switch	Start/Stop	Receives the timed activation start/stop commands	1.010 DPT_Start
6	27	48	69	90	111	132	153	174	195	216	237	Ch.x - Stairs light activation time	Set value	Stair raiser light timing value	7.005 DPT_TimePeriodSec
7	28	49	70	91	112	133	154	175	196	217	238	Ch.x - Blinking	Switching on/off	Receives the activation/deactivation commands for load blinking mode	1.001 DPT_Switch
8	29	50	71	92	113	134	155	176	197	218	239	Ch.x - Scene	Execute/Store	Used to store/execute scenes	18.001 DPT_SceneControl
9	30	51	72	93	114	135	156	177	198	219	240	Ch.x - Scene storing enable	Enable/Disable	Enables/disables scene learning	1.003 DPT_Enable
10	31	52	73	94	115	136	157	178	199	220	241	Ch.x - Logic input 1	Logic function input	Logic function input	1.002 DPT_Bool
11	32	53	74	95	116	137	158	179	200	221	242	Ch.x - Logic input 2	Logic function input	Logic function input	1.002 DPT_Bool
12	33	54	75	96	117	138	159	180	201	222	243	Ch.x - Logic input 3	Logic function input	Logic function input	1.002 DPT_Bool
13	34	55	76	97	118	139	160	181	202	223	244	Ch.x - Logic input 4	Logic function input	Logic function input	1.002 DPT_Bool
15	36	57	78	99	120	141	162	183	204	225	246	Ch.x - Safety	Monitoring	Used to monitor a sensor for the safety function	1.001 DPT_Switch
16	37	58	79	100	121	142	163	184	205	226	247	Ch.x - Priority command	On/Off forced positioning	Forces the load to an on/off value	2.001 DPT_Switch_Control
17	38	59	80	101	122	143	164	185	206	227	248	Ch.x - Block	Switching on/off	Blocks the status of a load in a condition that can be parametrised	1.003 DPT_Enable

20	41	62	83	104	125	146	167	188	209	230	251	Ch.x - Operating time counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger
20	41	62	83	104	125	146	167	188	209	230	251	Ch.x - Switching operation counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger
252												All channels switching	On/Off	Receives the activation/deactivation commands for all the channels configured for on/off switching	1.001 DPT_Switch

28.2 Communication objects for “Roller shutter/Venetian blind” operation

The communication objects implemented in the device and associated with "roller shutter/Venetian blind" operation are shown in the following table:

Outputs:

Ch.						**Object name**	**Object function**	**Description**	**Datapoint type**
1/2	**3/4**	**5/6**	**7/8**	**9/10**	**11/12**				
4	46	88	130	172	214	Ch.y/z - Block	Switching on/off	Blocks the status of a load in a condition that can be parametrised	1.003 DPT_Enable
5	47	89	131	173	215	Ch.y/z - Priority command	Forced up/down positioning	Forces the load to an up/down value	2.008 Direction1DPT_Switch_Control
7	49	91	133	175	217	Ch.y/z - Wind alarm 1	Alarm input	Receives a wind alarm signal	1.005 DPT_Alarm
8	50	92	134	176	218	Ch.y/z - Wind alarm 2	Alarm input	Receives a wind alarm signal	1.005 DPT_Alarm
9	51	93	135	177	219	Ch.y/z - Wind alarm 3	Alarm input	Receives a wind alarm signal	1.005 DPT_Alarm
10	52	94	136	178	220	Ch.y/z - Rain alarm	Alarm input	Receives a rain alarm signal	1.005 DPT_Alarm
11	53	95	137	179	221	Ch.y/z - Ice alarm	Alarm input	Receives an ice alarm signal	1.005 DPT_Alarm
19	61	103	145	187	229	Ch.y/z - Movement direction feedback	Upward/Downward	Signals the current movement direction of the load	1.008 DPT_UpDown
20	62	104	146	188	230	Ch.y/z - Movement in progress feedback	Moving/Stopped	Signals the load movement status	1.010 DPT_Start
21	63	105	147	189	231	Ch.y/z - Position feedback	% value	Signals the current percentage position of the load	5.001 DPT_Scaling
22	64	106	148	190	232	Ch.y/z - Louvre position feedback	% value	Signals the current percentage position of the load slats	5.001 DPT_Scaling
29	71	113	155	197	239	Ch.y/z - Upward movements period counter	Value 0 .. 2147483647 [s]	Sends the upward time counter value (expressed in seconds)	13.100 DPT_LongDeltaTimeSec
29	71	113	155	197	239	Ch.y/z - Upward movements period counter	Value 0 .. 65535 [min]	Sends the upward time counter value (expressed in minutes)	7.006 DPT_TimePeriodMin
29	71	113	155	197	239	Ch.y/z - Upward movements period counter	Value 0 .. 65535 [h]	Sends the upward time counter value (expressed	7.007 DPT_TimePeriodH

								in hours)	rs
30	72	114	156	198	240	Ch.y/z - Upward movements period counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
32	74	116	158	200	242	Ch.y/z - Downward movements period counter	Value 0 .. 2147483647 [s]	Sends the upward time counter value (expressed in seconds)	13.100 DPT_LongDeltaTimeSec
32	74	116	158	200	242	Ch.y/z - Downward movements period counter	Value 0 .. 65535 [min]	Sends the downward time counter value (expressed in minutes)	7.006 DPT_TimePeriodMin
32	74	116	158	200	242	Ch.y/z - Downward movements period counter	Value 0 .. 65535 [h]	Sends the downward time counter value (expressed in hours)	7.007 DPT_TimePeriodHrs
33	75	117	159	201	243	Ch.y/z - Downward movements period counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
35	77	119	161	203	245	Ch.y/z - Relay y switching operation counter	Value 0 .. 65535	Sends the value of the relay switching operation counter	7.001 DPT_Value_2_Ucount
35	77	119	161	203	245	Ch.y/z - Relay y switching operation counter	Value 0 .. 4294967295	Sends the value of the relay switching operation counter	12.001 DPT_Value_4_Ucount
36	78	120	162	204	246	Ch.y/z - Relay y switching operation counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
38	80	122	164	206	248	Ch.y/z - Relay z switching operation counter	Value 0 .. 65535	Sends the value of the relay switching operation counter	7.001 DPT_Value_2_Ucount
38	80	122	164	206	248	Ch.y/z - Relay z switching operation counter	Value 0 .. 4294967295	Sends the value of the relay switching operation counter	12.001 DPT_Value_4_Ucount
39	81	123	165	207	249	Ch.y/z - Relay z switching operation counter overflow	Overflow status	Sends the counter overflow signal	1.002 DPT_Bool
253						230V voltage failure alarm	Alarm/No alarm	Signals 230V absence	1.005 DPT_Alarm

Inputs:

Ch.						Object name	Object function	Description	Datapoint type
1/2	**3/4**	**5/6**	**7/8**	**9/10**	**11/12**				
0	42	84	126	168	210	Ch.y/z - Movement	Up/Down	Receives load up/down movement commands	1.008 DPT_UpDown
1	43	85	127	169	211	Ch.y/z - Stop	Stop	Receives load movement stop commands	1.017 DPT_Trigger
1	43	85	127	169	211	Ch.y/z - Shutter stop/Louvres control	Stop/Step	Receives load movement stop commands / load slat regulation commands	1.007 DPT_Step
2	44	86	128	170	212	Ch.y/z - Position command	% value	Receives commands for setting the percentage position of the load	5.001 DPT_Scaling
3	45	87	129	171	213	Ch.y/z - Shutter control command	% value	Receives commands for setting the percentage position of the load slats	5.001 DPT_Scaling
4	46	88	130	172	214	Ch.y/z - Block	Switching on/off	Blocks the status of a load in a condition that can be parametrised	1.003 DPT_Enable
5	47	89	131	173	215	Ch.y/z - Priority command	Forced up/down positioning	Forces the load to an up/down value	2.008 Direction1DPT_Switch_Control
6	48	90	132	174	216	Ch.y/z - Scene	Execute/Store	Used to store/execute scenes	18.001 DPT_SceneControl
7	49	91	133	175	217	Ch.y/z - Wind alarm 1	Alarm input	Receives a wind alarm signal	1.005 DPT_Alarm
8	50	92	134	176	218	Ch.y/z - Wind alarm 2	Alarm input	Receives a wind alarm	1.005 DPT_Alarm

								signal	
9	51	93	135	177	219	Ch.y/z - Wind alarm 3	Alarm input	Receives a wind alarm signal	1.005 DPT_Alarm
10	52	94	136	178	220	Ch.y/z - Rain alarm	Alarm input	Receives a rain alarm signal	1.005 DPT_Alarm
11	53	95	137	179	221	Ch.y/z - Ice alarm	Alarm input	Receives an ice alarm signal	1.005 DPT_Alarm
12	54	96	138	180	222	Ch.y/z - Automatic mode enabling	Enable/Disable	Enables automatic actuator operation	1.003 DPT_Enable
13	55	97	139	181	223	Ch.y/z - Automatic mode function selection	Sun protection/Thermoreg.	Enables sun protection or temperature adjustment	1.003 DPT_Enable
14	56	98	140	182	224	Ch.y/z - Thermoregulation operating type	Heating/Air conditioning	Automatic temperature adjustment operating type	1.100 DPT_Heat/Cool
15	57	99	141	183	225	Ch.y/z - Sun presence	True/False	Receives the "sun presence/absence" signal	1.002 DPT_Bool
16	58	100	142	184	226	Ch.y/z - Automatic mode position command	% value	Modifies and memorises the % position with automatic operation active	5.001 DPT_Scaling
17	59	101	143	185	227	Ch.y/z - Automatic mode louvres control command	% value	Modifies and memorises the % slat position with automatic operation active	5.001 DPT_Scaling
18	60	102	144	186	228	Ch.y/z - Automatic calibration trigger	Calibration request	Activates automatic device calibration	1.017 DPT_Trigger
23	65	107	149	191	233	Ch.y/z - Travel limits enabling	Enable/Disable	Enables/disables load travel limitation	1.003 DPT_Enable
24	66	108	150	192	234	Ch.y/z - Upper travel limit	% value	Sets the % position of the upper travel limit	5.001 DPT_Scaling
25	67	109	151	193	235	Ch.y/z - Lower travel limit	% value	Sets the % position of the lower travel limit	5.001 DPT_Scaling
26	68	110	152	194	236	Ch.y/z - Scene storing enabling	Enable/Disable	Enables/disables scene learning	1.003 DPT_Enable
27	69	111	153	195	237	Ch.y/z - Upward movement time	Value 1 .. 3000 [s]	Receives the up time value (expressed in seconds)	7.005 DPT_TimePeriodSec
28	70	112	154	196	238	Ch.y/z - Downward movement time	Value 1 .. 3000 [s]	Receives the down time value (expressed in seconds)	7.005 DPT_TimePeriodSec
31	73	115	157	199	241	Ch.y/z - Upward movements period counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger
34	76	118	160	202	244	Ch.y/z - Downward movements period counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger
37	79	121	163	205	247	Ch.y/z - Relay y switching operation counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger
40	82	124	166	208	250	Ch.y/z - Relay z switching operation counter reset	Reset value	Receives the counter value reset command	1.017 DPT_Trigger

Ai sensi delle Decisioni e delle Direttive Europee applicabili, si informa che il responsabile dell'immissione del prodotto sul mercato Comunitario è:
According to the applicable Decisions and European Directives, the responsible for placing the apparatus on the Community market is:
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