

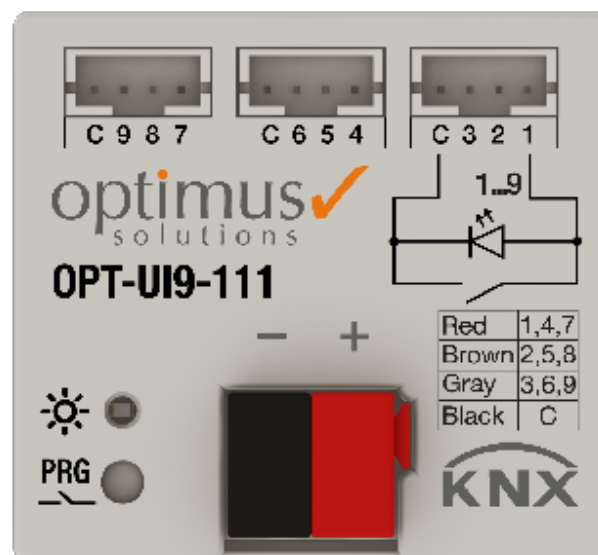
# Product Manual

## Universal Interface

OPT-UI3-111

OPT-UI6-111

OPT-UI9-111



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## About this document

This manual provides detailed technical information on the function, installation and programming of the OPT-UIX-111 device.

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## Disposal of old device

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optimus ✓

# 1 Product Description

OPT-UIx-xxx is a 3,6 or 9 channel, behind the switch interface device. It allows the functions of external physical contact devices to be transferred to the KNX line or use LED indicators for status monitoring. They are made to fit standard key cases in size, and the connecting cables come out of the box.

## 1.1 Product Models

OPT-UI3-111

OPT-UI6-111

OPT-UI9-111

Regardless of the product model, all channels include the following features.

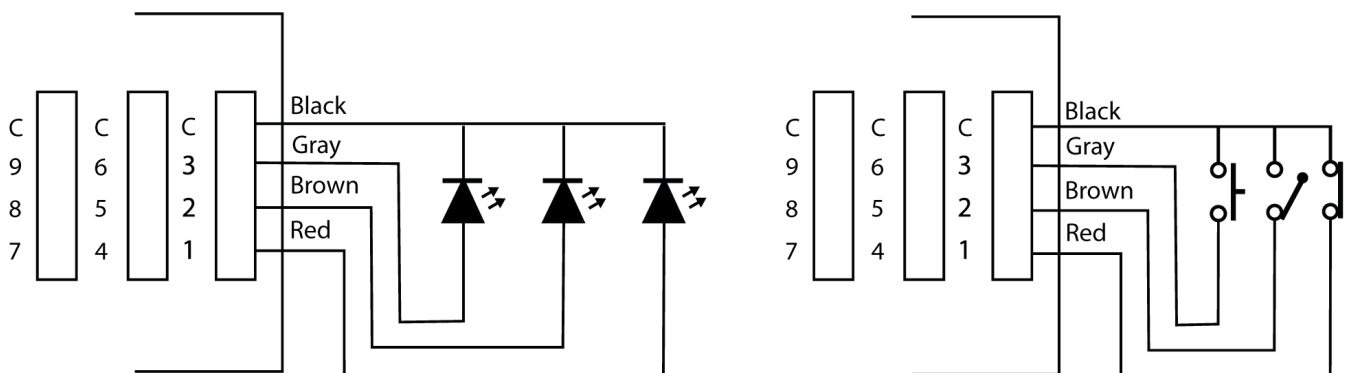
## 1.2 Usage Areas and Functions

The device is designed to fit into the space left behind the switch in order to transfer the requests of classic or push button to the KNX bus or to monitor the status information via the LED indicator.

## 1.3 Input Functions

The device comes with ready-made socket cables with 4 wires of different colors. The black color is the common end for all inputs and outputs. Red:1 (or 4,7), Brown:2 (or 5,8), Gray:3 (or 6,9) symbolize the numbered entries.

The sample connection diagram is as follows:



The device can be programmed with ETS5 or higher version software. The Optimus Universal Interface device is added to the project and started to be activated from the library file downloaded from the online catalog or via the website.



## 2 Device Parameters

OPT-Ulx-111 sensor comes with all parameters default. All the parameters are configured by ETS 5.x.

The explanations for each object according to its parameters is as below.

	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
<b>Value Sender</b>	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Press Output (for switch button) Output (for push button)	1 bit / Switch 1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 1 byte / Scene Number 1 byte / HVAC Mod 2 byte unsigned / Pulses 2 byte signed / Pulses Difference 2 byte float / Temperature °C	C	-	W	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Release Output (for switch button) Output (Long Press) (for push button)	1 bit / Switch 1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 1 byte / Scene Number 1 byte / HVAC Mode 2 byte unsigned / Pulses 2 byte signed / Pulses Difference 2 byte float / Temperature °C	C	-	W	T

Dimmer	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Dimmer Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Dimmer Switch	1 bit / Switch	C	-	W	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Dimmer Dimming	4 bit / Dimming control	C	-	-	T

Shutter	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Move	1 bit / Up / Down	C	-	-	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Stop	1 bit / Step	C	-	-	T



Counter	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Enable	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Counter Value	1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 2 byte unsigned / Pulse	C	-	-	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Counter Reset	1 bit / Reset	C	-	W	-

	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
	<b>Output</b>	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Led Input	1 bit / Switch 1 byte / Counter Pulse(0,...255)	C	-	W
2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9		Output Status	1 bit / Switch	C	-	-	T

## 2.1 General Settings

The device added to the ETS project is entered in the "General Settings" tab in the Parameters section. The settings made here determine all the channels and the general process of the device.

### 2.1.1 Debounce Time

Used to select the minimum contact time that the device will be based on for contact detection from the drop-down list. The options are: 20ms, 30ms, 50ms and 150ms. The default value is 50ms. Contacts that last less than this time are perceived as interference and are not processed. It is common to all Push Button channels.

### 2.1.2 Time for Long Operation

It is the option that is placed for the device to generate an additional function (for example, shutter, dimmer switches) for contacts that remain pressed until the threshold time to be selected. It is common to all Push Button channels. Dec values between 0.25s and 60s, the appropriate one can be selected from the list. The default value is 0.50s.

## 2.2 Start Up Delay

The device does not perform operations until the time selected here from the moment of its energization. An appropriate value is selected to regulate the incoming traffic on the bus. The default value is 5s.

## 3 Channel Functions

According to the model of the device, it has 3.6 or 9 channels. These channels are set according to their function. Channels come in passively at the initial settings. From the Settings page of the corresponding channel, "Digital Input" is selected for switch functions, and "LED/Logic Output" is selected for LED indicator functions.

The image displays two screenshots of the channel settings interface. The top screenshot shows the 'General Parameters' section for 'Ch 1' with 'Main Function' set to 'Digital Input'. A dropdown menu is open, showing 'Value Sender' as the selected option, with other options including 'Dimmer', 'Shutter', and 'Counter'. The bottom screenshot shows the 'General Parameters' section for 'Ch 1' with 'Main Function' set to 'Output'. A dropdown menu is open, showing 'Digital Output' as the selected option.

At this point, the selection is made in accordance with the intended use of this input. From the window opened in the Digital Input Function, the appropriate one among the "Send Value", "Dimmer", "Shutter", "Counter" options is selected.

### 3.1 Contact Type

It is selected to determine the form of the contact structure of the connected key when it is not pressed. "Normally Open" or "Normally Closed" contact options are selected. The default is "Normally Open".

### 3.2 Enable With

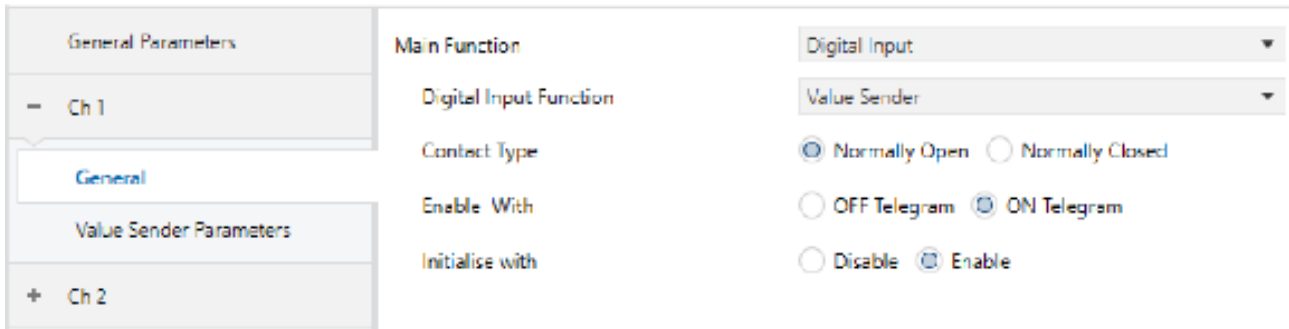
The "Enable With" object of the relevant channel is added by default. It is used to determine the method of using this object. If "OFF Telegram" is selected, the channel becomes active when the value "0" is sent to the event object (Enable) of the relevant channel; If "ON Telegram" is selected, the channel is activated by sending "1" value to the same object.

### 3.3 Initialise with

It is the option where the active or passive selection is made when the device starts to work. By default, "Enabled" is selected.

### 3.4 Value Sender Parameters

This is the section opened on the left tab when Digital Input Selection is selected as “Send Value”. In this section, the details of the connection are set.



	ComObject Number:	Object Function	Length / Data Type	C	R	W	T
	Channel Number						
<b>Value Sender</b>	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Press Output (for switch button) Output (for push button)	1 bit / Switch 1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 1 byte / Scene Number 1 byte / HVAC Mod 2 byte unsigned / Pulses 2 byte signed / Pulses Difference 2 byte float / Temperature °C	C	-	W	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Release Output (for switch button) Output (Long Press) (for push button)	1 bit / Switch 1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 1 byte / Scene Number 1 byte / HVAC Mode 2 byte unsigned / Pulses 2 byte signed / Pulses Difference 2 byte float / Temperature °C	C	-	W	T

### 3.4.1 Button Type

Depending on the type of switches connected, the "Switch Button" type is selected for those that remain in the pressed position, and "Push Button" is selected for Push Button switches that return to their initial position.

### 3.4.2 Read Input and Send Status After Start

For "Switch Button", it is used to send the current position of the switch to the bus when the device is energized. For "Push Button", this option is hidden.

### 3.4.3 Switch Button

For "Switch Button", it is the place where the action to be taken when the switchs position changes from the contact position (Normally Open or Normally Closed) specified on the first page to another. It is selected as "Passive" in its initial setting. It is entered into the settings by making it "Active". First, the data type of the command to be sent, and then the value to be sent is selected. It defaults to a 1-bit value. Depending on the selected data type, the value to be sent is written in the "Send value" section or selected from the list.

General Parameters	Button Type	<input checked="" type="radio"/> Switch Button <input type="radio"/> Push Button
- Ch 1	Read Input and Send Status After Start	<input type="checkbox"/>
General	When Pressed	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Value Sender Parameters	Press Output Type	1-bit
+ Ch 2	Send Value	<input type="radio"/> OFF Telegram <input checked="" type="radio"/> ON Telegram Default Value: 1-bit
+ Ch 3	When Released	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
+ Ch 4	Release Output Type	1-bit
+ Ch 5	Send Value	<input checked="" type="radio"/> OFF Telegram <input type="radio"/> ON Telegram

#### 3.4.3.1 When Pressed

For "Switch Button", it is the place where the action to be taken when the switchs position changes from the contact position (Normally Open or Normally Closed) specified on the first page to another. It is selected as "Passive" in its initial setting. It is entered into the settings by making it "Active". First, the data type of the command to be sent, and then the value to be sent is selected. It defaults to a 1-bit value. Depending on the selected data type, the value to be sent is written in the "Send value" section or selected from the list.

### 3.4.3.2 When Released

For "Switch Button", it is the place where the action to be taken when the position of the switch returns to the contact position specified on the first page is determined. It is selected as "Passive" in its initial setting. It is entered into the settings by making it "Active". First, the data type of the command to be sent, and then the value to be sent is selected. It defaults to a 1-bit value. Depending on the selected data type, the value to be sent is written in the "Send value" section or selected from the list.

Press and release functions of channels are divided into two separate communication objects to provide programming flexibility. If desired, normal commissioning can be performed by assigning the same group address to both objects (provided that the data types are selected the same).

	Numb	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
↕	0	Ch-1	Enable			1 bit	C	-	W	-	-	boolean	Low
↕	1	Ch-1	Press Output			1 bit	C	-	W	T	-	switch	Low
↕	2	Ch-1	Release Output			1 byte	C	-	W	T	-	scene number	Low

#### Data Types of When Pressed/When Released

Data Types	Possible Values
1 bit	Off (0), On (1)
1-byte unsigned integer	0...255
1-byte signed integer	-128...127
Scene Call	Scene 1...64
HVAC Mode	Auto, Comfort, Standby, Economy, Protection
2-byte unsigned integer	0-65535
2-byte signed integer	-32768...32767
2-byte float	-670760...670760

### 3.4.4 Push Button

"Push Buttons", events occur as soon as the key is pressed and/or when it is pressed for a certain period of time. The first option is for a short press event when the key is pressed or if long press detection is enabled.

General Parameters		Button Type	<input type="radio"/> Switch Button <input checked="" type="radio"/> Push Button
- Ch 1		When Pushed	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
General		Push Output Type	1-bit
Value Sender Parameters		Send Value	ON Telegram
+ Ch 2		Long Press Detection	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
+ Ch 3		Press Output Type	1-bit
+ Ch 4		Send Value	OFF Telegram

#### 3.4.4.1 When Pushed

For "Push Button" type switches, it is the place where the action to be taken when the switch's position changes from the contact position (Normally Open or Normally Closed) specified on the first page to another. It is selected as "Passive" in its initial setting. It is entered into the settings by making it "Active". First, the data type of the command to be sent, and then the value to be sent is selected. It defaults to a 1-bit value. Depending on the selected data type, the value to be sent is written in the "Send value" section or selected from the list.

#### 3.4.4.2 Long Press Detection

Used to activate long press on "Push Buttons. In this case, the device performs its operation according to the key press time. The long press time is adjusted from the general parameters of the device. Settings are made in the same way.

The data types to be sent are the same for any key. However, Push Button have On and Off commands for 1-bit as well as the "Other" command. In this option, the inverse of the value of the last sent or updated object from the data line (1 when 0, 1 when 0 is sent).



### 3.5 Dimmer

It is used to perform dimmer operation (dimming, increasing, on-off) by sending different types of data according to the pressing time, working with "Push Buttons" or "Switch Buttons". It is mostly used in the control of adjustable light level (dimmer) lighting. It has two parameters:

The screenshot shows a configuration interface for a dimmer. On the left, a tree view shows 'General Parameters' expanded to 'Ch 1', with 'General' selected. The main configuration area includes:

- Main Function:** Digital Input Function
- Contact Type:** Digital Input
- Enable With:**  Normally Open,  Normally Closed
- Initialise with:**  OFF Telegram,  ON Telegram
- Buttons:**  Disable,  Enable

	ComObject Number:	Object Function	Length / Data Type	C	R	W	T
	Channel Number						
<b>Dimmer</b>	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Dimmer Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Dimmer Switch	1 bit / Switch	C	-	W	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Dimmer Dimming	4 bit / Dimming control	C	-	-	T

### 3.5.1 Short Press Action

It is the action that will take place if the key is pressed for a short time. Options:

**No Reaction Functions:** In this case, the command is not sent when the "Switch Button or Push Button" is pressed briefly.

**ON Function:** When pressed the buttons for a short time, 1-bit "ON" command is sent over the "Dimmer Switch" object.

**OFF Function:** When pressed the buttons for a short time, a 1-bit "OFF" command is sent over the "Dimmer Switch" object.

**Toggle ON/OFF:** With each short press of the buttons, the next ON or OFF command is sent. Note: This object can be updated by connecting to the status object of the dimmer device and real reverse command is sent.

**Long Press Action:** When the button is pressed for a long time, the action to be taken is dimmer (dim or increase). Options:

**Dimmer toggle:** With each long press of the buttons, the next "Decrease" or "Increase" operation takes place.

**Brighter :** When the buttons is pressed for a long time, a command is sent from the "Dimmer Dimming" object in the direction of increasing.

**Darker :** When the buttons is pressed for a long time, a command is sent from the "Dimmer Dimming" object in the direction of dimming.

General Parameters	Short Press Action	Toggle ON/OFF ▼
- Ch 1	Long Press Action	Dimming Toggle ▼
General		
Dimmer Parameters		
+ Ch 2		

### 3.6 Shutter

It is used in the control of two-way curtain/blind motors. It can be adjusted according to the switch type and button model. Movement commands (up or down) are sent from the “Ch-x Move” object, and “Stop/Step” commands are sent from the “Ch-x Stop” object.

The screenshot shows the configuration interface for the Shutter object. The sidebar on the left has 'General Parameters' selected, with 'Ch 1' expanded to show 'General' and 'Shutter Parameters'. The 'Main Function' is set to 'Digital Input', and the 'Digital Input Function' is set to 'Shutter'. The 'Contact Type' is 'Normally Open', 'Enable With' is 'OFF Telegram', and 'Initialise with' is 'Enable'.

	ComObject Number:	Object Function	Length / Data Type	C	R	W	T
	Channel Number						
<b>Shutter</b>	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Boolean	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Move	1 bit / Up / Down	C	-	-	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Stop	1 bit / Step	C	-	-	T

### 3.6.1 Operation With

It is the field where the control with how many button is selected, there are 1-button and 2-button options. When 1-button is selected, operations are performed sequentially or only in a certain direction. If 2-button is selected, a more comfortable application is provided.

### 3.6.2 Button Type

Depending on the type of switch connected, the "Switch" type is selected for those that remain in the pressed position, and "Push Button" is selected for "Push Button" switches that return to their initial position. Short or long press time is determined in General Settings, same for all keys.

#### Function :

#### 3.6.2.1 1 - Button /Switch

**Up/Stop/Down/Stop** : Every time the "Switch Button" changes position, the next command is sent (from the related objects).

**Up/Down (w/o Stop)** : Every time the "Switch Button" changes position, the command to go Up or Down is sent (via the "Ch-x Move" object).



#### 3.6.2.2 2 - Button/Switch

**Move Up** : When this button is pressed, the "1-bit up" command is sent over the "Ch-x Move" object. When the switch moves to the other position, a 1-bit step/stop command is sent over the "Ch-x Stop" object.

**Move Down** : When this button is pressed, a "1-bit down" command is sent over the "Ch-x Move" object. When the switch moves to the other position, a 1-bit step/stop command is sent over the "Ch-x Stop" object.

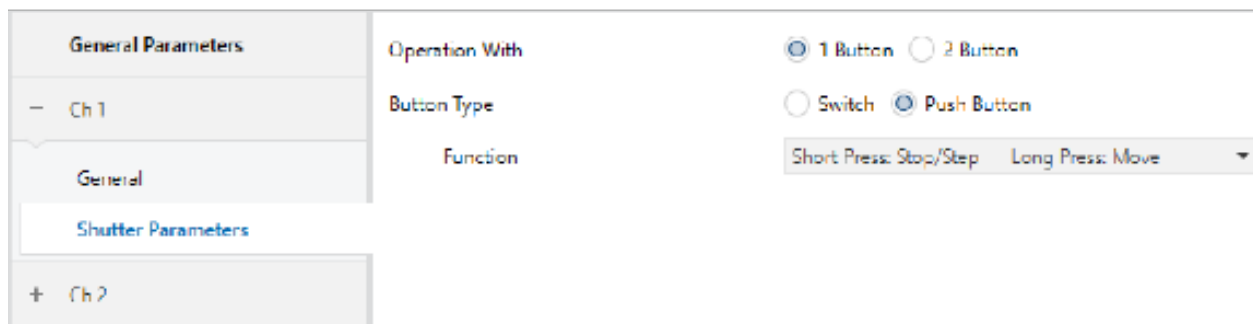
### 3.6.2.3 1 - Button/Push Button

The following appropriate one is selected from the list appearing in the Function section:

**"Short Press: Stop/Step, Long Press: Move"** : When the button is pressed for a short time, 1-bit step/stop command is sent via the "Ch-x Stop" object, when the button is pressed for a long time, the next "go up" or "go down" command is sent via the Ch-x Move" object.

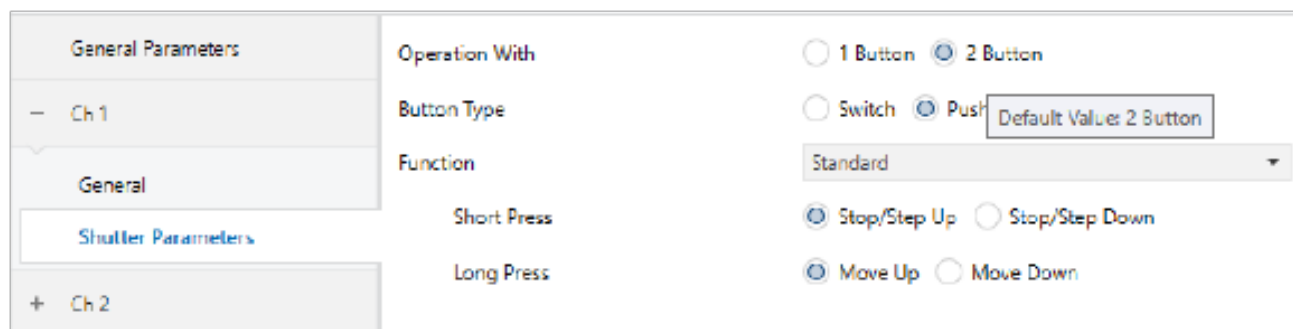
**"Short Press: Move , Long Press: Stop/Step"**: When the button is pressed for a short time, the next "go up" or "go down" command is sent via the Ch-x Move object. When the button is pressed for a long time, a 1-bit step/stop command is sent via the "Ch-x Stop" object.

**"Up/Stop/Down/Stop"** : Each time the "Push Button" is pressed, the next command is sent (from the related objects). There is no long press in this function.



### 3.6.2.4 2 - Button/Push Button

The following appropriate one is selected from the list appearing in the Function section:



**Standart:** Task distribution is made according to short and long presses.

**Short Press :** "Stop/Step Up" or "Stop/Step Down" is selected. The information is sent via the "Ch-x Stop" object.

**Long Press :** Select the desired one from the "Go Up" or "Go Down" options. The information is sent via the "Ch-x Move" object.

**Moving:** Buttons only send movement command regardless of pressing time (no command is sent from Ch-x Object).

**Stepping :** It is a blade adjustment technique that is mostly used in flap adjustable curtains or small moving motors.

**Press:** Select the desired one from the "Go Up" or "Go Down" options. The information is sent via the "Ch-x Move" object.

**Repetition Period (0=No Repeat):** This is the area where the expected time for the step operation to be repeated when the button is pressed is set. The entered value is multiplied by 100ms and processed.

### 3.7 Counter

It is a counting function made with a "Push Button" or "Switch Button". Each time the relevant key receives a trigger (while pressing or release the button), it changes its current value by the specified amount and transmits it from the "Ch-x Counter Value" object.

	ComObject Number:	Object Function	Length / Data Type	C	R	W	T
	Channel Number						
<b>Counter</b>	0 : Ch-1 3 : Ch-2 6 : Ch-3 9 : Ch-4 12 : Ch-5 15 : Ch-6 18 : Ch-7 21 : Ch-8 24 : Ch-9	Enable	1 bit / Enable	C	-	W	-
	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Counter Value	1 byte unsigned / Counter Pulse(0,...255) 1 byte signed / Counter Pulse(-128,...127) 2 byte unsigned / Pulse	C	-	-	T
	2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9	Counter Reset	1 bit / Reset	C	-	W	-

**Detection Edge:** The selection of the button pressed or released is made:

**Rising Edge:** It defines the moment of pressing the button (open circuit to close circuit transition). The process takes place at this time.

**Falling Edge:** It defines the moment of released the button (from short circuit to close circuit). The process takes place at this time.

**Data Type:** It shows the size and data type of the data to be counted. "Unsigned 1-byte" means 8-bit data from 0 to 255, "Signed 1-byte" refers to 8-bit data from -128 to +127, "Unsigned 2-byte" refers to a 16-bit number from 0 to 65535.

**Count Direction:** Counting can be done in increments or decrements.

**Initial Value:** It is the field where we specify the first number to start counting (according to the data type).

**Step Size:** It is the number that the counter will add (if the counting direction is increasing) or subtract from its current value (if the counting direction is decrementing) each time the counter is triggered. The step size can be selected between 1 and 255.

**Send Last Value at Start:** When the device is reset, it can send where the counting was left to the data line. For this, the relevant box is ticked (Enabled).

**Reset Data:** Counting can be returned to the initial value if desired. For this, the value specified here is expected from the "Ch-x Counter Reset" object. When "ON Telegram" is selected, 1-bit 1 value, when OFF Telegram is selected 1-bit 0 value, if "Any Value" is selected, the counter is reset when any of these commands comes.

**Count Limit:** A limit can be set to the counter if desired. Active or Passive can be selected. If Enabled is selected, this value is written in the "Limit (Included)" box that opens. This box is not displayed when Passive is selected. The box below is shown.

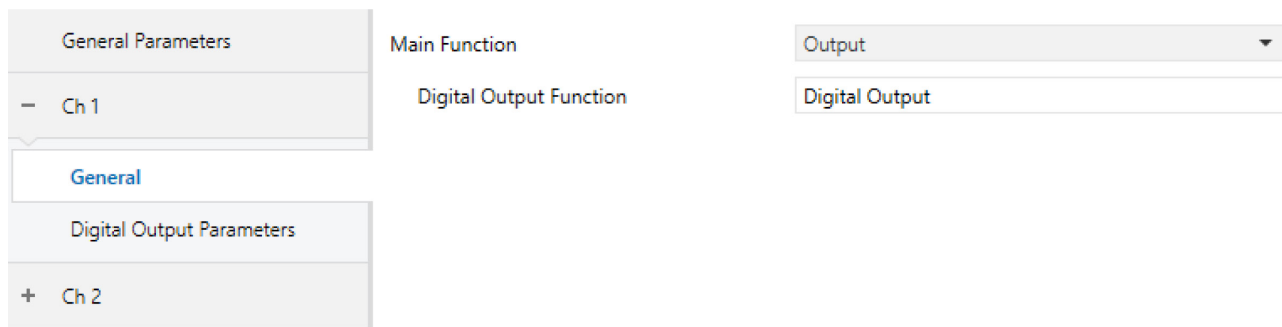
**Action When Final Value is Reached:** When the device reaches the last value as a data type (for example, when the counter reaches 255 in the "Unsigned 1-bit" data type in the incremental direction), it is the area where the counter's behavior in the next trigger is determined. "Stop Counting", "Continue with Next Value" or "Start Over" options are selected.

General Parameters	Detection Edge	<input checked="" type="radio"/> Rising <input type="radio"/> Falling
- Ch 1	Data Type	1-byte unsigned
General	Count Direction	<input checked="" type="radio"/> Increase <input type="radio"/> Decrease
Counter Parameters	Starting From	0
+ Ch 2	Step Size	1
+ Ch 3	Send Last Value On Power-On	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
+ Ch 4	Reset With	ON Telegram
+ Ch 5	Count Limit	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Action When Final Value is Reached	Continue w/next value



### 3.8 Output

In the channel selected as "Output" in the main function, the interface expands as follows:



With this option, the channel is used to light the LED lamps or trigger the logic gates. The LED lamp can be connected directly (No need for a series resistor).

	ComObject Number: Channel Number	Object Function	Length / Data Type	C	R	W	T
	<b>Output</b>	1 : Ch-1 4 : Ch-2 7 : Ch-3 10 : Ch-4 13 : Ch-3 16 : Ch-6 19 : Ch-7 22 : Ch-8 25 : Ch-9	Led Input	1 bit / Switch 1 byte / Counter Pulse(0,...255)	C	-	W
2 : Ch-1 5 : Ch-2 8 : Ch-3 11 : Ch-4 14 : Ch-5 17 : Ch-6 20 : Ch-7 23 : Ch-8 26 : Ch-9		Output Status	1 bit / Switch	C	-	-	T

**Data Type:** The channel can be activated according to 1-bit or 1-byte data. The appropriate option can choose here. By default, 1-bit is selected.

**Output On With (1 bit):** Output can be activated from data type 1-bit system with "ON Command" or "OFF Command". default value is "ON Command".

**Output On With (1 byte):** Detailed criteria can be set when the data type is 1-byte. When "Equal to Lower Value" is selected, the output is active if the incoming data is equal to the 1-byte value specified in the "Value" section. When "Greater Than Lower Value" is selected, if the incoming data is greater than the 1-byte value specified in the "Value" section, the output is active. When "Less than Lower Value" is selected, the output is active if the incoming data is less than the 1-byte value specified in the "Value" section. When "Between Two Values Below" is selected, two boxes that will specify the value are opened. If the incoming data is between the values written in these boxes, the output is active.

The screenshot shows a configuration interface for digital output parameters. On the left, a sidebar lists 'General Parameters' and 'Ch 1'. Under 'Ch 1', there are sub-sections for 'General' and 'Digital Output Parameters'. The main area displays the configuration for 'Ch 1' under 'Digital Output Parameters'. It includes a 'Data Type' section with two radio buttons: '1-bit' (selected) and '1-Byte'. Below this is an 'Output is On With' section with two radio buttons: 'OFF Telegram' and 'ON Telegram' (selected).



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