EAE MONA SWITCH

Product Manual Mona Switch

Contents

Product Order Codes

MN-B-S01	MONA 1 BUTTON SW. BLACK
MN-W-S01	MONA 1 BUTTON SW. WHITE
MN-B-S02	MONA 2 BUTTON SW. BLACK
MN-W-S02	MONA 2 BUTTON SW. WHITE
MN-B-S03	MONA 3 BUTTON SW. BLACK
MN-W-S03	MONA 3 BUTTON SW. WHITE
MN-B-S04	MONA 4 BUTTON SW. BLACK
MN-W-S04	MONA 4 BUTTON SW. WHITE
MN-B-S05	MONA 5 BUTTON SW. BLACK
MN-W-S05	MONA 5 BUTTON SW. WHITE
MN-B-S06	MONA 6 BUTTON SW. BLACK
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MN-W-S12	MONA 12 BUTTON SW. WHITE

1. General

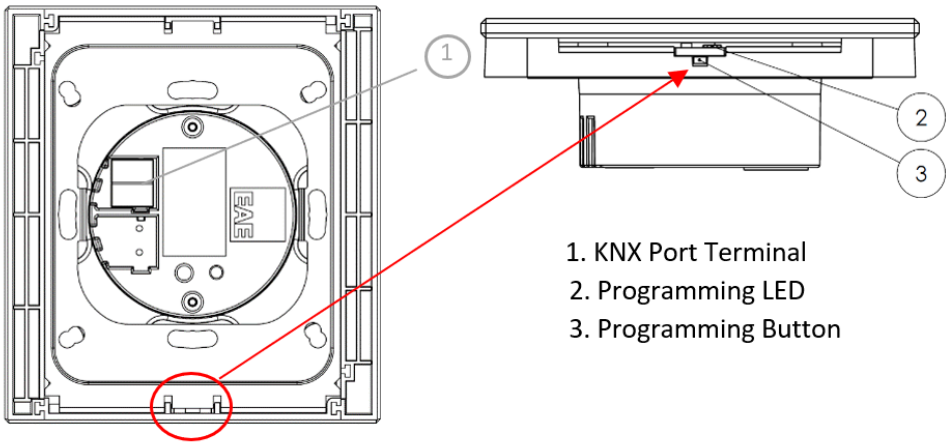
Mona KNX switches offer a wide range of functional flexibility up to 12 programmable buttons. Mona switches can be programmed for control lighting, shutter/blind drivers, speakers, make scene calls and mimic panic buttons. Each button can be programmed independently for a different function.

2. Device Technology

2.1. Button Definitions

Programmable Buttons (up to 12 push buttons)

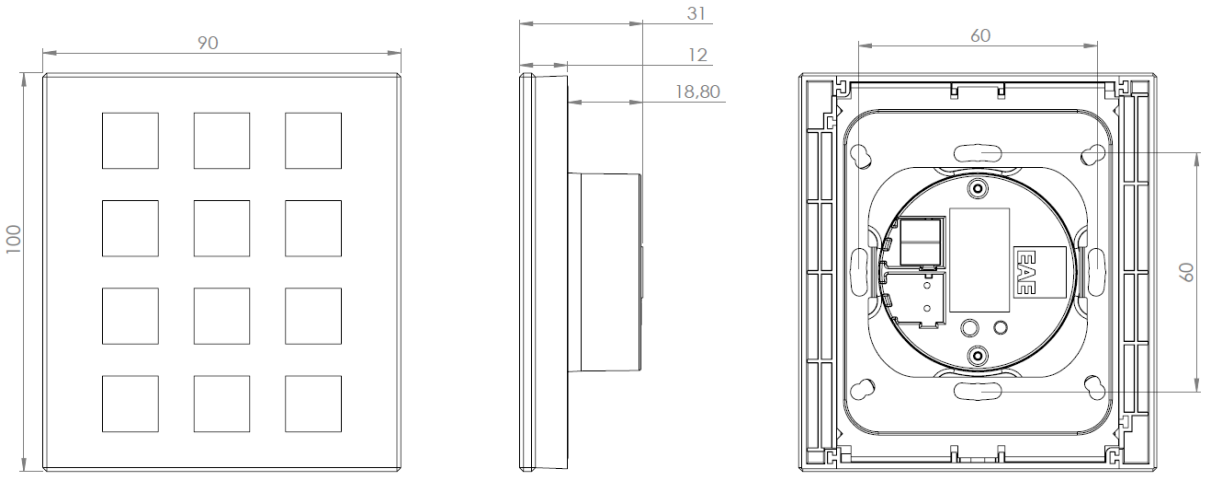
2.2. Connection Diagram



2.3. Technical Data

Protection Grade	IP 20	EN 60529
Safety Class	II	EN 61140
Operating Voltage	Voltage	21V… 30V DC, via the KNX bus
	Current drawn from bus	<10mA
Connections	KNX	Bus Connection
Operating Temperature	Ambient	-5° C + 45° C
	Storage	-25° C + 55° C
Humidity	Max. Air humidity condensation	95% no moisture
Dimensions	Front Side	90 x 100 mm
	Side- Surface mounted part	12 mm
	Side- Flush mounted part	18.8 mm
Weight	73 g	
Box Material	Metal or Glass, polycarbonate	
CE	In accordance with the EMC guideline and low voltage	

2.4. Dimensions



3. Communication Object Table

No	Object Name	Function	Data Point Type	Flags
0	In operation	[0, 1]	1 bit DPT 1.017	CT
1, 7, 13, 19, 25, 31, 37, 43, 49, 55, 61, 67	Button 1…12	Telegr.switch	1 bit DPT 1.001	CT
	Button 1…12	Telegr.switch and Status	1 bit DPT 1.001	CWT
	Button 1…12	Telegr.shutter UP/DOWN	1 bit DPT 1.008	CWT
	Button 1…12 [Short Press 1]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Double Press 1]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12[Long Press 1]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
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		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT

No.	Object Name	Function	Data Point Type	Flags
2, 8, 14, 20, 26, 32, 38, 44, 50, 56, 62, 68	Button 1…12	Telegr.dimming	4 bit DPT 3.007	CT
	Button 1…12	Telegr.STOP	1 bit DPT 1.017	CWT
	Button 1…12	Telegr.STOP / Lamella Adj.	1 bit DPT 1.007	CWT
	Button 1…12 [Short Press 2]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Double Press 2]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Long Press 2]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT

No.	Object Name	Function	Data Point Type	Flags
3, 9, 15, 21, 27, 33, 39, 45, 51, 57, 63, 69	Button 1…12	Switch Status	1 Bit DPT 1.001	CW
	Button 1…12	Top Position	1 bit DPT 1.002	CW
	Button 1…12 [Short Press 3]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Double Press 3]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Long Press 3]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT

No.	Object Name	Function	Data Point Type	Flags
4, 10, 16, 22, 28, 34, 40, 46, 52, 58, 64, 70	Button 1…12	Bottom Position	1 bit DPT 1.002	CW
	Button 1…12 [Short Press 4]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Double Press 4]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
	Button 1…12 [Long Press 4]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
		Telegr.value[0…255]	1 Byte DPT 5.010	CT
		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT

No.	Object Name	Function	Data Point Type	Flags
5, 11, 17, 23, 29, 35, 41, 47, 53, 59, 65, 71	Button 1…12 [LED Status]	[0, 1]	1 bit DPT 1.001	CW
6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72	Button 1…12 Lock	0=Unlock; 1=Lock	1 bit DPT 1.001	CW
	Button 1…12 Lock and Status	0=Unlock; 1=Lock	1 bit DPT 1.001	CRWT
74	Day/Night	0=Day; 1=Night	1 bit DPT 1.001	CW
		0=Night; 1=Day	1 bit DPT 1.006	
75	Proximity	0=Absence; 1=Presence	1 bit DPT 1.011	CW
		BIT6: 0=Presence; 1=Absence	1 Byte DPT 26.001	CW
		BIT6: 0=Presence; 1=Absence	1 Byte DPT 26.001	CWT
*76	Ambient Temperature	°C	2 Byte DPT 9.001	CT
		°F	2 Byte DPT 9.027	CT
77…92	IN1, IN2/OUT15, IN3/OUT14, … IN15/OUT2, OUT1 (Logic Block 1)	Input/Output	1 bit DPT 1.002 1 Byte DPT 5.010	CRW(Input) CRT(Output)
93…108	IN1, IN2/OUT15, IN3/OUT14, … IN15/OUT2, OUT1 (Logic Block 2)	Input/Output	1 bit DPT 1.002 1 Byte DPT 5.010	CRW(Input) CRT(Output)

*NOTE= If Mona Switch has temperature sensor, these object will be used to read ambient temperature.

4. Parameters and Communication Objects

4.1. General

General parameters include;

- In Operation (Device Alive) Function
- Telegram Limit Function
- Telegram Transmission Delay
- Built-in Sensors
- Logic Blocks
- Diagnostics

4.1.1. Parameters

Parameter	Settings	Description
GENERAL		
In Operation Telegram	checked/**unchecked**	In operation can be used to ensure that device is alive and connected to KNX line.
In Operation Value	0/**1**	Visible when "In Operation Telegram" checked. Selected value will be sent as device alive operation.
In Operation Sending Interval	10…**300**…65535 s	Visible when "In Operation Telegram" checked. Cyclic time period for sending in operation value.
Telegram Limiter	checked/**unchecked**	Limits the number of telegrams to send in certain time period.
Telegram Limit Period Duration	**50ms**, 100ms, …, 30s, 1min	Visible when "Telegram Limiter" checked. Determine the period for sending telegram.
Maximum Telegram Count in Period	**1**…255	Visible when "Telegram Limiter" checked. Maximum number of telegrams to send in telegram limit period duration.
Telegram Transmission Delay	**1**…255	This parameter is used to set delay for sending the first telegram when device powered on.
SWITCH		
Switch Configuration	1 Button 2 Button (Left – Right) 2 Button (Up – Down) 3 Button 4 Button 5 Button 6 Button (3 Left – 3 Right) 6 Button (3 Up – 3 Down) 7 Button 8 Button 9 Button 10 Button 11 Button 12 Button	Button count of device.

Status LED “Operation Indication” Duration	0.3, **0.75**, 1.5, 2.25, 3 s	This parameter is used to select the LEDs ON duration when status LEDs used as operation indication with buttons.
BUILT-IN SENSORS		
Ambient Light Sensor	checked/**unchecked**	This parameter can be selected if the relevant sensors are exist in device.
Proximity Sensor	checked/**unchecked**	
Temperature Sensor	checked/**unchecked**	
LOGIC BLOCKS		
Logic Blocks	**None**, 1, 2	Logic Blocks Menu will be shown.
DIAGNOSTICS		
Firmware Version	**Read Firmware Version**	Device Firmware version will be shown.
Uptime	**Read Uptime**	Device up time since the device energized.
Ambient Light Sensor	**Check Built-in Sensors**	If the sensor exist, answer will be YES
Proximity Sensor		If the sensor exist, answer will be YES
Temperature Sensor		If the sensor exist, answer will be YES

4.1.2. Communication Objects

No	Object Name	Function	Data Point Type	Flags
0	General – In operation	Active	1 Bit DPT 1.002	CT
In operation value (0,1) selected through “In operation bit” parameter will be sent via the group address which is linked to this communication object				
77…92	IN1, IN2/OUT15, IN3/OUT14, … IN15/OUT2, OUT1 (Logic Block 1)	Active	DPT 1.002 DPT 5.010	CRW (Input) CRT (Output)
93…108	IN1, IN2/OUT15, IN3/OUT14, … IN15/OUT2, OUT1 (Logic Block 2)	Active	DPT 1.002 DPT 5.010	CRW (Input) CRT (Output)
These objects are able to control logic processes.				

4.2. LED Brightness

This function is used to dim the buttons according to Bright (ON) and Dark (OFF) dim levels. Additionally, the buttons can be dimmed with another methods such as Ambient Light or Proximity dim.

4.2.1. Parameters

Parameter	Setting	Description
BRIGHTNESS LEVELS		
Bright Level	0 = OFF, 1, 2, 3, 4, 5, 6, **7**	The bright dim level can be set.
Dark Level	0 = OFF, **1**, 2, 3, 4, 5, 6, 7	The dark dim level can be set.
STATUS LEDS AUTO-DIM (Bright -> Dark)		
Ambient Light Dim	**unchecked** / checked / *Detection Disabled	Auto dim switch status leds to darker according to Day/Night state.
Proximity Dim	**unchecked** / checked / *Detection Disabled	Auto dim switch status leds to darker according to touch to the buttons.
*: If the Proximity or Ambient Light function is not selected in Sensors page, that message will be appeared.		

4.2.2. Communication Objects

No	Object Name	Function	Data Point Type	Flags
74	Day/Night	0=Day; 1=Night	1 bit DPT 1.001	CW
		0=Night; 1=Day	1 bit DPT 1.006	
Day or Night mode can be selected via object.				

4.3. Sensors

These parameters are used to select Ambient Light dimming or Proximity dim.

4.3.1. Ambient Light - Parameters

Parameter	Setting	Description
AMBIENT LIGHT (Day/Night)		
Ambient Light Detection	**unchecked** / checked	This parameter activates auto-dim according to Day and Night states.
Day/Night Source	Object (External)	Day/Night states are changing via a group object.
DPT Day/Night Object	**0 = Day; 1 = Night** 0 = Night; 1 = Day	This parameter determines the object value for Day and Night.
Day/Night State after KNX Bus Recovery		This parameter is used select the Ambient Light state after KNX bus recovery.

4.3.2. Proximity - Parameters

Parameter	Setting	Description
PROXIMITY (Presence/Absence)		
Proximity Detection	**unchecked** / checked	This parameter activates auto-dim according to proximity state.
Proximity Source	**Button Press**, Object, Button Press and Object	This parameter is used select the proximity type.
Presence Timeout	1…**10**…255 s	This parameter defines the timeout for Presence. When it is reached, the device will be in Absent mode and dimming will be applied.
Send Proximity Status	**unchecked** / checked	This parameter is used to send Proximity status via group object.
Proximity Object	**Single Generator**, Multi Generator	This parameter is used to select the sending/receiving type of proximity
Presence Transmit Repeat Interval	**0**…255 s	This parameter is used to determine the repeat interval for proximity status.
Proximity Generator ID	**1**, 2, 3	This parameter is used for Multi Generator. Sends 1-byte object.
Object Monitoring Timeout	**0**…255	This parameter is used to determine the timeout for proximity object receiving. Device will be in Absence mode end of the time, if there is no presence.

4.3.3. Temperature – Parameters*

Parameter	Function	Description
Temperature Unit	**Celsius(°C)** / Fahrenheit(°F)	Select temperature unit. After selection all temperature related parameters and communication objects should be enter as selected unit.
Offset	-128…**0**…127 (x0.1K)	Offset value entered here will be added to measured temperature. It can be used to compensate for temperature difference caused by thermostat placement. Entered value will be multiplied with 0.1
Send Temperature	**Cyclic** / Cyclic and Change	Selects whether temperature will be sent periodically or periodically and in case of a change in temperature. Minimum change value defined in “Minimum Difference” parameter.
Cyclic Sending Interval	10…**30**…65535 s	Cyclic time period to send temperature from “Current Temperature” communication object.
Minimum Change	**1**…255 (0.1K)	Only visible if “Send Temperature” selected as “Cyclic and Change”. Selects minimum change in temperature that will trigger transmission of temperature.

***NOTE=** Mona Switch must have temperature sensor and relevant options must be enabled in General Parameter settings page.

4.4. Switch

Select the desired operation from the “Button N” (N: Button number) parameter in General Tab in ETS Configuration.

Push buttons have 4 functions;

- switch
- switch and dim
- shutter
- value operation

Push buttons are numbered and can be shown in General Tab. Every function enables different parameters and communication objects that will be explained in the following chapters.

Parameter	Setting	Description
Push Button Function	**No Function**	Disables the push button
	Switch	Push buttons can be used to send on/off telegrams. (For more information Chapter 4.4.1)
	Switch and Dim	Push buttons can send on/off and dimming telegrams. (For more information Chapter 4.4.2)
	Shutter	Push button can control shutter, venetian blind, blind, roller and awning. (For more information Chapter 4.4.3)
	Value Operation	Push button can send predefined values from different Data Point Types. (Refer Section 4.4.4)

Push buttons also have status LEDs which can be configured to indicate state of the operation that is configured.

Parameter	Setting	Description
COMMON		
Name		You can assing a name to show in ETS Parameter Tabs.
LED STATUS ON		
Brightness	**Bright** / Dark / OFF	LED Feedback brightness level when button is at ON state.
Color	White, Red, Green, **Blue**, Yellow, Magenta, Cyan, OFF	LED Feedback color when button is at ON state.
LED STATUS OFF		
Brightness	Bright / Dark / **OFF**	LED Feedback brightness level when button is at OFF state.
Color	White, **Red**, Green, Blue, Yellow, Magenta, Cyan, OFF	LED Feedback color when button is at OFF state.
BUTTON LOCK		
Button Lock Object DPT	**0 = Unlock; 1 = Lock** 0 = Lock; 1 = Unlock	Selects object type for lock object.
LED Function when Locked	**Active** / Disable	Enable or disable LED feedback from the button.
Lock State after KNX Bus Recovery	Reset / **Keep**	Button lock state after Bus failure.

4.4.1. Switch

Selecting “Switch” as “Push Button Function“ enables to send 1 bit On(1)/Off(0) telegrams to the group address that is linked to respective communication object. Touching and releasing buttons can be assigned to different commands (On, Off, Toggle and No Command). Status LEDs can be configured to notify the current status of operation directly with buttons or using communication objects for confirmation to show current status.

4.4.1.1.Parameters

Parameter	Setting	Description
COMMON		
Command on Press	On / Off / **Toggle** / No command	Selects button function when button touched.
Command on Release	On / Off / Toggle / **No command**	Selects button function when button released.
Separate Switch Status Object	checked / **unchecked**	This parameter defines the additional obtect to write switch status.
Function of LED	LED Status ON LED Status OFF Operation Indication **Status Indication** Inverted Status Indication	This parameter is used to select status LED function of button.

4.4.1.2.Communication Objects

No	Object Name	Function	Data Point Type	Flags
1	Button 1…12	Telegr.switch (and Status)	1 bit DPT 1.001	C(W)T
On/Off telegrams will be sent to group address that is linked to this communication object.				
2	Button 1…12	Switch Status	1 bit DPT 1.002	CW
Confirmation for On/Off switch telegrams will be received from this communication object. If these communications object visible, it must link to an appropriate group address. Otherwise status LEDs will not function correctly.				
3	Button 1…12 Lock	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CW
Push button can be locked/unlocked via this object.				
4	Button 1…12 Lock and Status	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CRWT
Push button can be locked/unlocked via this object. Additionally, Switch Lock status can be taken via same object.				

4.4.2. Switch and Dim

When push button function selected as “Switch and Dim” push button can be configured in three different ways to control brightness value.

	Short Touch	Long touch
Darker(Short Touch Off)	Off (%0)	Decrease, (%XX)
Brighter(Short Touch On)	On(%100)	Increase,(%XX)
Darker/Brighter(Short Touch Toggle)	Toggle between Darker/Brighter	Decrease, (%XX) / Increase,(%XX)

%XX values can have different values relative to the “Dimming Type” parameter. “Dimming Type” parameter allows two different types of dimming functionality “Start Stop” and “Step Wise”.

Dimming - Start Stop Type

When push button touched (and not released) and touched duration exceeds “Long Touch Duration” time “Increase, %100” (When button in Brighter mode) or “Decrease, %100” (When button in Darker mode) dimming level will be send using respective communication object. When button released “Increase, Break” or “Decrease, Break” value will be sent.

Dimming - Step Wise Type

When push button touched (and not released) and touched duration exceeds “Long Touch Duration” time, a step value level configured in “Step Value” parameter will be send using respective communication object. If button mode is “Darker”, “Decrease, % [Step Value]”, else button mode is “Brighter”, “Increase, % [Step Value]” values will be sent. Until button is released same step value will be send periodically with a time interval defined in “Step Send Interval”.

4.4.2.1. Parameters

Parameter	Setting	Description
Dim Operation	Darker (Short Touch Off) Brighter (Short Touch On) **Darker/Brighter (Short Touch Toggle)**	Select push button dim operation. (For more information Chapter 4.4.2.2)
Long Press Duration	100ms … **500ms** … 10s	Long Press time to start dimming.
Dimming Type	**Start Stop** / Step Wise	Select dimming type. (For more information Chapter 4.4.2.2)
Step Value	%100 / %50 / %25 / **%12.5** / %6.25 / %3.13 / % 1.56	Visible when dimming type is Step Wise. Selects the dimming resolution that will be sending at every “Step Send Interval”.
Step Send Interval	100ms … **1s** … 10s	Visible when dimming type is Step Wise. Selects the time interval to send dimming increase/decrease values.
Separate Switch Status Object	checked / **unchecked**	This parameter defines the additional obtect to write switch status.
Function of LED	LED Status ON LED Status OFF Operation Indication **Status Indication** Inverted Status Indication	This parameter is used to select status LED function of button.

4.4.2.2. Communication Objects

No	Object Name	Function	Data Point Type	Flags
1	Button 1…12	Telegr.switch	1 bit DPT 1.001	C(W)T
On/Off telegrams will be sent to group address that is linked to this communication object.				
2	Button 1…12	Telegr.dimming	4 bit DPT 3.007	CT
Dimming values will be send to group address that is linked to this communication object.				
3	Button 1…12	Switch Status	1 bit DPT 1.002	CWT
Confirmation for On/Off switch telegrams will be received from this communication object. If these communications object visible, it must link to an appropriate group address. Otherwise status LEDs will not function correctly. If status confirmation not to be used the communication object should be disabled by “Separate Comm Object” parameter.				
4	Button 1…12 Lock	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CW
Push button can be locked/unlocked via this object.				
5	Button 1…12 Lock and Status	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CRWT
Push button can be locked/unlocked via this object. Additionally, Switch Lock status can be taken via same object.				

4.4.3. Shutter

Selecting “Shutter” for “Push Button Function” enables shutter operation for push buttons. Shutter functions can be configured to control two different shutter operations “Shutter/Venetian Blind” function or “Blind/Roller/Awning” function. In both functions push button can be configured as 3 different button function; Up, Down and Toggle. When push button selected as up or down, that button can only move the blind and lamella to the configured direction. For example, if configured as up button, push button can be used to move the blind up and adjust the lamella down. If push button configured as toggle button, single button can be used to move the blind up – down and adjust lamella up – down.

Shutter/Venetian Blind Function

When “Controller Type” configured as “Shutter/Venetian Blind”, lamella operations of blind control will be enabled as “short press” function of the push button. Also, “Button Function” parameter enables the use of push button 3 different ways;

Up: “Long Press” moves the blind upwards; “Short Press” operates two different ways, short pressed while the blind is moving, stops the blind, short pressed while the blind is not moving adjust the lamella position down.

Down: “Long Press” moves the blind downwards; “Short Press” operates two different ways, short pressed while the blind is moving, stops the blind, short pressed while the blind is not moving adjust the lamella position up.

Toggle: “Long Press” moves the blind upwards or downwards toggling the last “Long Press” action. For example, if last state was up, when push button long pressed, it will send “Down” telegram.

Every time push button long pressed it will toggle its last state. If push button short pressed while the blind is moving upward or downward “Short Press” will stop the blind, if the blind is not moving “Short Press” will adjust the lamella. Lamella adjustment will operate respective to the last state, for example if the last “Long Press” action was up, then lamella will be adjusted down when push button short pressed and if the last “Long Press” action was down, then lamella will be adjusted up when push button short pressed.

Blind/Roller/Awning Function

When “Controller Type” configured as “Blind/Roller/Awning Function” lamella operations of blind control will be disabled and “short press” will only stop the movement of the blind. “Button Function” parameter enables the use of push button 3 different ways;

Up: “Short Press” moves the blind upwards; “Short Press” stops the blind.

Down: “Short Press” moves the blind downwards; “Short Press” stops the blind.

Toggle: “Short Press” action moves the blind downwards – stops – upwards – stops.
For example, if last state was up, when push button short pressed it will send “Stop” telegram.
Every time push button short pressed it will follow the steps below.

Down -> Stop -> Up -> Stop

Note: If Top or Bottom Position object gets a value “1” and short pressed, blind will be driven opposite way.

4.4.3.1. Parameters

Parameter	Setting	Description
Push Button Function	**Up** / Down / Toggle	Chapter 4.4.3
Control Type	**Shutter/Venetian Blind** Blind/Roller/Awning	Selects control type of blinds. Shutter/Venetian Blind function includes "Lamella Control" and "Blind/Roller/Awning" function does not include "Lamella Control".
Long Touch Duration	100ms … **300ms** … 10s	Wait time for long press action. This parameter will be shown if Control Type is selected as "Shutter/Venetian blind".
Function of LED	LED Status ON LED Status OFF Operation Indication **Status and Movement Indication** Inverted Status and Movement Indication Movement Indication	This parameter is used to select status LED function of button.

4.4.3.2. Communication Objects

No	Object Name	Function	Data Point Type	Flags
1	Button 1…12	Telegr.shutter UP/DOWN	1 bit DPT 1.008	CWT
Blind Up/Down telegrams will be sent via group address that is linked to this communication object.				
2	Button 1…12	Telegr.STOP/Lamella Adj.	1 bit DPT 1.007	CWT
This object will be shown If blind control type is selected as "Shutter Venetian Blind". Blind STOP and Lamella Adj. telegrams will be sent via group address that is linked to this communication object.				
3	Button 1…12	Telegr.STOP	1 bit DPT 1.007	CWT
This object will be shown If blind control type is selected as "Blind/Roller/Awning". Blind STOP telegrams will be sent via group address that is linked to this communication object.				
4	Button 1…12	Top Position	1 bit DPT 1.002	CW
Blind TOP Position object should be linked to this group object.				
5	Button 1…12	Bottom Position	1 bit DPT 1.002	CW
Blind BOTTOM Position object should be linked to this group object.				
6	Button 1…12 Lock	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CW
Push button can be locked/unlocked via this object.				
7	Button 1…12 Lock and Status	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CRWT
Push button can be locked/unlocked via this object. Additionally, Switch Lock status can be taken via same object.				

4.4.4. Value Operation

Push button can be configured to send predefined values from different Data Types. Additionally, long, short or double press actions can be selected for each Value transmitting individually. Up to 4 value can be sent via one button.

4.4.4.1. Parameters

Parameter	Setting		Description
FUNCTION			
Value 1	None / **Short Press** / Double Press / Long Press		Value transmitting methods can be selected.
Value 2	**None** / Short Press / Double Press / Long Press		
Value 3	**None** / Short Press / Double Press / Long Press		
Value 4	**None** / Short Press / Double Press / Long Press		
Data Type	1-bit 1-bit HVAC control mode 1-bit toggle 1-byte unsigned 1-byte signed 1-byte HVAC operating mode 1-byte percentage 1-byte counter	1-byte scene activate 1-byte scene learn 2-byte unsigned 2-byte signed 2-byte float 4-byte unsigned 4-byte signed 4-byte float	Data type can be selected individually for each Value field.
Value	**0**/1		Visible when “Data Type” selected as “1 bit value”.
	0…255		Visible when Data Type is selected as “1-byte unsigned”
	-128…**0**…127		Visible when Data Type is selected as “1-byte signed”
	Auto / Comfort / Standby / Economy / Building Protection		Visible when Data Type is selected as “1-byte HVAC operating mode”
	0…100 %		Visible when Data Type is selected as “1-byte percentage”
	0…65535		Visible when Data Type is selected as “2-byte unsigned”
	–32768…**0**…32767		Visible when Data Type is selected as “2-byte signed”
	–671088…**0**…670760		Visible when Data Type is selected as “2-byte float”
	0…4294967295		Visible when Data Type is selected as “4-byte unsigned”
	–2147483648…**0**…2147483647		Visible when Data Type is selected as “4-byte signed”
	–1E+38…**0**…1E+38		Visible when Data Type is selected as “4-byte float”
Begin	0/**1**		Visible when Data Type is selected as “1-bit toggle”
Begin	**0**…255		Visible when Data Type is selected as “1-byte counter”
End	0…**255**		
Step	0…**1**…255		
Step Direction	**Up** / Down		
Counting Sequence	**Cyclic** / Non-Cyclic		
Scene	**1**…64		Visible when Data Type is selected as “1-byte scene activate”
			Visible when Data Type is selected as “1-byte scene learn”

Double Press Timeout	**20**…200 x10 ms	Double press must be finished until timeout.
Long Press Duration	100ms…**1s**…10s	Select time period for long press operation
Long Press Repeat	checked / **unchecked**	
Long Press Repeat Interval	100ms…**200ms**…10s	
Function of LED	LED Status ON LED Status OFF Operation Indication **Status Indication** Inverted Status Indication	This parameter is used to select status LED function of button.

4.4.4.4. Communication Objects

No	Object Name	Function	Data Point Type	Flags
1	Button 1…12 [Short Press 1..4] Button 1…12 [Double Press 1…4] Button 1…12 [Long Press 1…4]	Telegr.value[0, 1]	1 bit DPT 1.001	CT
2		Telegr.value HVAC Control Mode	1 bit DPT 1.100	CT
2		Telegr.value[0…255]	1 Byte DPT 5.010	CT
2		Telegr.value[-127,128)	1 Byte DPT 6.010	CT
2		Telegr.value HVAC Mode	1 Byte DPT 20.102	CT
3		Telegr.value[0…100 %]	1 Byte DPT 5.001	CT
3		Telegr.value(1…64 scene)	1 Byte DPT 18.001	CT
3		Telegr.value[0…65535]	2 Byte DPT 7.001	CT
3		Telegr.value[-32768…32767]	2 Byte DPT 8.001	CT
4		Telegr.value(2-byte float)	2 Byte DPT 9.001	CT
5		Telegr.value(4-byte unsigned)	4 Byte DPT 12.001	CT
6		Telegr.value(4-byte signed)	4 Byte DPT 13.001	CT
7		Telegr.value(4-byte float)	4 Byte DPT 14.005	CT
8	Button 1…12 Lock	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CW
Push button can be locked/unlocked via this object.				
9	Button 1…12 Lock and Status	0=Unlock; 1=Lock 0=Lock; 1=Unlock	1 bit DPT 1.001 1 bit DPT 1.006	CRWT
Push button can be locked/unlocked via this object. Additionally, Switch Lock status can be taken via same object.				
10	Button 1…12 LED Status	[0,1]	1 bit DPT 1.001	CW
Confirmation for On/Off switch telegrams will be received from this communication object. If these communications object visible, it must link to an appropriate group address. Otherwise status LEDs will not function correctly.				

4.5. Logic Block 1…2

4.5.1. I/O Configuration

Logic Input and Output counts should be selected in this page.

Parameter	Setting	Description
I/O Config	1 Input / 15 Output 2 Input / 14 Output 3 Input / 13 Output 4 Input / 12 Output 5 Input / 11 Output 6 Input / 10 Output 7 Input / 9 Output 8 Input / 8 Output 9 Input / 7 Output 10 Input / 6 Output 11 Input / 5 Output 12 Input / 4 Output 13 Input / 3 Output 14 Input / 2 Output **15 Input / 1 Output**	Logic Input and Output configuration can be selected.

4.5.2. Inputs

4.5.2.1. IN1…15

Parameter	Setting	Description
Name	25 chracters are allowed. (Optional)	Any name can be defined for each Input. Name will be shown in ETS Parameters and Group Objects page.
Data Type	**1 bit** / 1 byte	Logic Input Data Type can be selected.
Preprocess (if Data Type : 1 bit)	**Passthrough**, NOT, always True, always False	Passthrough: Input will be proccessed as it is. NOT: Input will be reverted. always True: Process will always be True regardless to input value. always False: Process will always be False regardless to input value.
Preprocess (if Data Type : 1 byte)	**Passthrough**, NOT, always True, always False, equal, NOT equal, in range, NOT in range, matches any of two, NOT matches any of two, bits SET, NOT bits SET, bits CLEAR, NOT bits CLEAR, thresholds, NOT thresholds	Passthrough: Input will be proccessed as it is. 0 is OFF, 1…255 is ON NOT: Input will be reverted. 0 is ON, 1…255 is OFF always True: Process will always be True regardless to input value. always False: Process will always be False regardless to input value. equal: If the Input value is equal to ETS written value, the result will be “True”. NOT equal: If the Input value is NOT equal to ETS written value, the result will be “True”. in range: If the Input value is in range between written values on ETS, the result will be “True”. NOT in range: If the Input value is NOT in range between written values on ETS, the result will be “True”. matches any of two: If the Input value matches with the any of values on ETS, the result will be “True”. NOT matches any of two: If the Input value does NOT match with the any of values on ETS, the result will be “True”. bits SET: If all masked bits of the Input Value is set, the result will be “True”. NOT bits SET: If all masked bits of the input value is set, the result will be “False” bits CLEAR: If all masked bits of the Input Value is clear, the result will be “True”. NOT bits CLEAR: If all masked bits of the Input Value is clear, the result will be “False”.

		thresholds: Input value must be; equal or greater than “True if > =” value for result “True”. equal or lower than “False < =” value fo result “False. NOT thresholds: Input value must be; equal or greater than “True if > =” value for result “False”. equal or lower than “False < =” value fo result “True”.
Initial State	**False** / True	This parameter is used to select initial value of related input when device energized(or reset).
State after KNX bus recovery	**Initial** / Last	This parameter is used to select the related input state after bus voltage recovery.

4.5.3. Outputs

4.5.3.1. OUT1…15

Parameter	Setting	Description
Name	25 chracters are allowed. (Optional)	Any name can be defined for each Output. Name will be shown in ETS Parameters and Group Objects page.
Register	checked/ **unchecked**	This function is used to set the chosen output as Input Operand. Result of relevant output can be used as input for another Output.
OPERANDS		
IN1…IN15	checked/ **unchecked**	This parameter is used to select Logic Input(s) which needs for reletad Output operation.
STATE	checked/ **unchecked**	This parameter defines the value of result. It can be used as operand in Output operation.
FUNCTION		
Description	80 chracters are allowed. (Optional)	Any name can be defined for description of function. Description will **not** shown anywhere.
Data Type	**1 bit** / 1 byte	Output operation data type can be selected individually.
Operation	**Passthrough (unary)** NOT (unary) AND NAND OR NOR XOR XNOR Sum is 1 NOT Sum is 1 Sum is 0 or 1 NOT Sum is 0 or 1 All 0's or All 1's NOT All 0's or All 1's	Passthrough: It should be used with single operand only. Result will be the same as related operand value. NOT: It should be used with single operand only. Result will be reverted according to related operand value. AND: Selected Inputs will be multiplied consecutively and result value will be sent after. NAND: Selected Inputs will be multiplied consecutively and result value will be sent as inverted after. OR: Selected Inputs will be summed consecutively and result value will be sent after. NOR: Selected Inputs will be summed consecutively and result value will be sent as inverted after. XOR: Selected inputs will be summed according to EX-OR gate and result value will be sent after. XNOR: Selected inputs will be summed according to EX-OR gate and result value will be sent as inverted after. Sum is 1: If the one of the Input is "True" and rest of all is "False" the result will be "True". If multiple inputs are "True" or all "False", then result will be "False". NOT Sum is 1: If the one of the Input is "True" and rest of all is "False" the result will be "False". If multiple inputs are "True" or all "False", then result will be "True". Sum is 1 or 0: If the one of the input is "True" and rest of all are "False" or all inputs are "False", the result will be "True". If 2 or more inputs are "True", the result will be "False". NOT Sum is 1 or 0: If the one of the input is "True" and rest of all are "False" or all inputs are "False", the result will be "False". If 2 or more inputs are "True", the result will be "True".

Parameter	Setting	Description
Operation (continues..)	continues…	All 0's or All 1's: If all inputs are "False" or "True", the result will be "True". NOT All 0's or All 1's: If all inputs are "False" or "True", the result will be "False".
Trigger	**operand update** operand update with blocking condition operand update with set/reset STATE input select	operand update: Output will be processed If any operand value changed. operand update with blocking condition: Output won't be processed regardless to operand change, if blocking operand is active. operand update with set/reset STATE: This function should be used with STATE operand. This function allows to change the output state according to selected Input or Registered Output(if exist) value. input select: Output will be processed if the selected Input or Registered Output(if exist) has trigger value.
Sending blocked when	**IN1** … 15 or REG OUT 1…15	This function is used to block the output sending If selected Input or Registered Output has its selected value.
Send pending telegram after unblocking	**unchecked**/checked	This function is used to send output state after unblocking.
Send value when expression is	False True **True or False**	This function is used to send the output result if the Output expression value is as selected.
False Value (1 bit) True Value (1 bit)	**0** / 1 0 / **1**	
False Value (1 Byte) True Value (1 Byte)	**0**…255 0…**1**…255	
Send only on change	**unchecked**/checked	This function is used select the type of output sending.
Send initial state after KNX bus recovery	**unchecked**/checked	This function is used to send initial state of related output after KNX bus recovery.
Initial state	**False** / True	This parameter is used to select initial value of related output when device energized(or reset).
State after KNX bus recovery	**Initial** / Last	This parameter is used to select the related output state after KNX bus recovery.
Timer	**none** delayed sending periodical sending state hold timeout	delayed sending: This parameter is used to determine delay for output sending. periodical sending: This parameter is used to send the output state cyclically. state hold timeout: This parameter allows to keep the output state in case of state changes.