Push button with room temperature controller for MATCH 55 series

KNX TP Push Button 420.1 *secure*

Operation and installation manual

(Art. # 5492 Push button with mounting kit without rockers)

WEINZIERL ENGINEERING GmbH
Achatz 3-4
84508 Burgkirchen an der Alz
GERMANY

Tel.: +49 8677 / 916 36 – 0
E-Mail: info@weinzierl.de
Web: www.weinzierl.de

© 2024 Weinzierl Engineering GmbH

Content

1 Application 4

2 Installation and connection 4

2.1 KNX programming mode 5

2.2 Status display 5

3 Reset to factory default settings 5

4 Wiring scheme 6

4.1 Pluggable connections 6

5 Mounting and delivery 7

5.1 Mounting 7

5.2 Delivery 8

5.3 Design frames and rockers 8

6 Temperature measurement 9

7 Room temperature controller 9

7.1 Operating concept 9

7.2 General functions 9

7.3 Operation modes 10

7.4 Frost protection 10

7.5 Heating/Cooling 11

7.6 Temperature setting 11

7.7 Manual ventilation control 13

7.8 Diagnostic 14

7.9 Configuration example - Heating without ventilation 15

8 ETS database 17

8.1 KNX Security 17

8.2 Description 21

8.3 General settings 22

8.4 LED Function: Enabled 25

8.5 LED Function: Via group object 25

8.6 LED Function: Input/Button A0/A1/B0/B1 state 31

8.7 LED Function: Brightness adjustment 32

8.8 Button A0: General 34

8.9 Configuration example „Rocker“ 35

8.10 Button function “Switching” 36

8.11 Button function “Dimming” 39

8.12 Button function “Shutter” 41

8.13 Button function “Send value” 46

8.14 Button function “Color” 48

8.15 Button function “Scene” 52

8.16 Button function “Generic” 56

8.17 Alarm tone 59

8.18 Temperature sensor 61

8.19 Room temperature controller – General 63

© 2024 Weinzierl Engineering GmbH

8.20 Room temperature controller – System 72
8.21 Room temperature controller – Diagnostic 80
8.22 Sequence controller 81
8.23 Logic / Timer 84
8.24 Function 1 – 10: Timer 85
8.25 Function 1 – 10: Logic 87

© 2024 Weinzierl Engineering GmbH

1 Application

The KNX TP Push Button 420.1 *secure* is a push button with integrated bus coupling unit and room temperature controller.

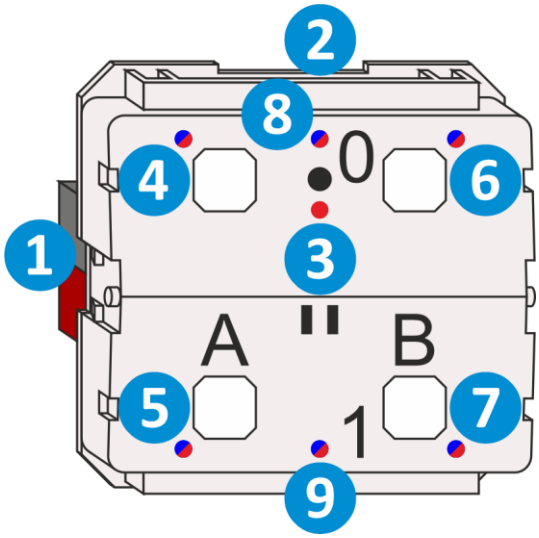
The device is part of the MATCH 55 push button series. It can be combined with one or two rockers and offers four independent button functions. Two or four multicolor LEDs (red, blue and magenta) enable to display different states. A multitone sound generator allows the output of acoustic messages.

The application offers extensive functions for switching, dimming, shutter, valuator, scene and color control as well as a sequence controller. A room temperature controller enables the control of heating and air conditioning systems, including fan stages.

In addition, the device contains 10 independent logic or time functions. The device supports KNX Data Security.

2 Installation and connection

The KNX TP Push Button 420.1 *secure* is suitable for numerous switch ranges available on the market with 55 mm internal dimensions. The push button has the following operating elements and displays:



1. KNX bus connector
2. Pluggable connections
3. Button/LED (red) for programming mode
4. Button/LED (multicolor) A0
5. Button/LED (multicolor) A1
6. Button/LED (multicolor) B0
7. Button/LED (multicolor) B1
8. LED Top [0] (multicolor)
9. LED Bottom [1] (multicolor)

If the bus voltage is missing, the device is without function.

© 2024 Weinzierl Engineering GmbH

2.1 KNX programming mode

The KNX programming mode is activated/deactivated either by pressing the recessed KNX programming button ❸ or by simultaneously pressing the buttons ❹ and ❻ for approx. 6 seconds.

When the programming mode is active, the programming LED ❸ lights up red.

The operation of the programming mode via the buttons ❹ and ❻ can be activated/deactivated in the ETS® on page general settings.

2.2 Status display

Summary of the states of programming LED ❸:

LED Status	Meaning
LED lights red	Programming mode is active.
LED flashes red	Programming mode is not active. The device is not properly loaded e.g. after an interrupted download.

Summary of the states of LED Top [0] ❽:

LED Status	Meaning
LED flashes blue	The ETS download is currently in progress.

3 Reset to factory default settings

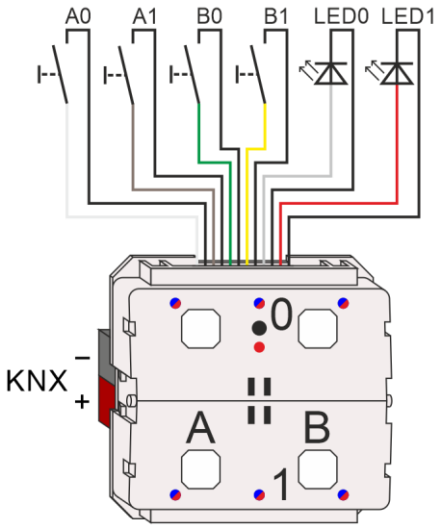
It is possible to reset the device to its factory default settings.

- Disconnect the KNX bus connector ❶ from the device.
- Press the KNX programming button ❸ and keep it pressed down.
- Reconnect the KNX bus connector ❶ to the device.
- Keep the KNX programming button ❸ pressed for at least another 6 seconds.
- A short flashing of all LEDs (❸❹❺❻❼❽❾) visualizes the successful reset of the device to factory default settings.

In the factory default settings, the device has the physical address 15.15.255 and no group addresses are connected. Also, KNX Data Security is disabled and the initial key (FDSK) must be used for secure commissioning.

© 2024 Weinzierl Engineering GmbH

4 Wiring scheme



4.1 Pluggable connections

A connection cable is available for operating the device as push button interface,
the assignment is as follows:

Connection pair	Color of the connection cable	Function
A0	White	Button A0
	Black	Common ground
A1	Brown	Button A1
	Black	Common ground
B0	Green	Button B0
	Black	Common ground
B1	Yellow	Button B1
	Black	Common ground

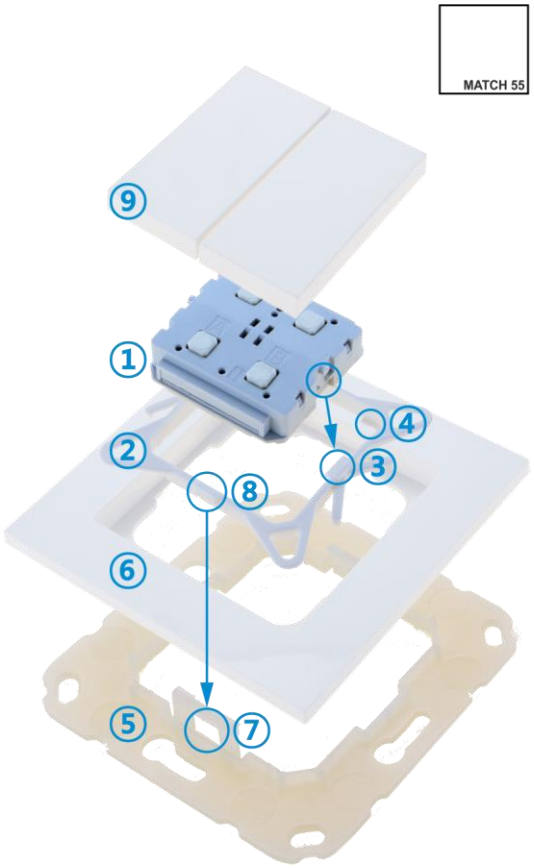
Additionally, 2 LEDs with low current consumtion can be controlled externally
(internal series resistors: 2 kOhm, internal voltage 3,3 V):

Connection pair	Color of the connection cable	Function
LED0	Gray	LED Top [0] (blue)
	Black	Common ground
LED1	Red	LED Bottom [1] (blue)
	Black	Common ground

All black connecting cables are internally connected to ground in the device.
The KNX connection is located on the underside of the device.

© 2024 Weinzierl Engineering GmbH

5 Mounting and delivery



5.1 Mounting

Mounting of the KNX TP Push Button 420.1 *secure* ①:

- Insert the device ① from above into the holding frame ②. The device snaps into the retaining lugs ③ of the holding frame on the left and right and sits flush on the four retaining lugs ④.
- Fasten the wall mounting frame ⑤ in the desired installation position (with screws or adhesive pad) – make sure that the retaining straps ⑦ point up and down.
- Place the design frame ⑥ on the wall mounting frame ⑤ and then place the device ① locked into the holding frame ② from above. The wall mounting frame ⑤ snaps into the retaining lugs ⑧ of the holding frame ② with the retaining straps ⑦.
- Finally, place the rockers ⑨ on the KNX TP Push Button 420.1 *secure* ① and clip it in.

For dismantling, proceed in reverse order.

When connecting to the KNX bus, ensure correct polarity or orientation of the bus connector (see imprint on the underside of the device).

© 2024 Weinzierl Engineering GmbH

5.2 Delivery

The following is included in the delivery of the KNX TP Push Button 420.1 *secure* (Art. # 5492):

- Push button ①
- Holding frame ②
- Wall mounting frame ⑤

The device is delivered without rockers ⑨ or design frames ⑥.

5.3 Design frames and rockers

Design frames and rockers must be ordered separately.

An overview of the available design frames and rockers, which can be ordered from us, can be found on our homepage (www.weinzierl.de/en/products/match-55).

Furthermore, many other design frames from other manufacturers can also be used. You can also find a compatibility list at the link above.

© 2024 Weinzierl Engineering GmbH

6 Temperature measurement

The temperature is measured using an internal sensor. This compensates for self-heating (depending on the installation situation, e.g. brick wall or drywall). This can be individually adjusted using the parameter **Temperature offset [K] | [°C]**.

The device has to be at operating temperature to display the correct temperature value. This state is reached after approx. 30 min.

7 Room temperature controller

7.1 Operating concept

The push button contains a complete room temperature controller. For this purpose, the use of a visualization is recommended, as the push button does not have the required display options.

During operation, it is possible to switch between the two operating modes “Comfort” and “Economy”. “Comfort” is the standard operating mode. “Economy” can be used for night setback, for example. When changing the operating modes, the respective temperature is set as the setpoint value.

The setpoint temperature can also be set manually using the following objects:

Group object	Type KNX	Size	Direction
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 97 Room temperature controller – Temperature – Setpoint – Increase/Decrease	9.001	2 Byte	From KNX

When changing the operating modes, the setpoint temperature is reset by “Temperature – Comfort”, or “Temperature – Economy”.

7.2 General functions

7.2.1 Additional level

The additional level is activated when a configured temperature difference between the set temperature and the current temperature is reached. This can be used, for example, with heaters that offer an additional heating level.

7.2.2 Demand request

The demand request is set when the control value [%] for the valve is > 0 %. This makes it possible, for example, to switch on the pump of the water circuit for the underfloor heating only when the valve is open.

© 2024 Weinzierl Engineering GmbH

7.2.3 Window contacts

The room temperature controller can be combined with window contacts. When the window is open, the room temperature controller is switched off.

7.2.4 Temperature sensor

In addition to the internal temperature sensor, an external sensor via KNX can also be used for temperature measurement. Furthermore, it is possible to use the average value from the internal and external sensor. If no temperature is received externally, only the internal value is used.

7.2.5 Temperature offset

The measured temperature can be adapted from -5 … 5 °C. The adaption is applied to the internal and external temperature sensor.

7.3 Operation modes

The room temperature controller has 2 operation modes while active.

- Comfort
- Economy

7.3.1 Operation mode – Comfort

This is the standard operation mode of the controller.

It should be active when the room to be controlled is in use, e.g. in offices during opening hours.

7.3.2 Operation mode – Economy

This is the alternative operation mode of the controller.

It should be active when the room to be controlled is not used, e.g. for office rooms during weekends or as night setback.

7.3.3 Control of operation modes

Depending on the configuration of the parameter **Operation mode control**, there are either two trigger objects with which one or the other operating mode can be switched to active or a presence object.

7.4 Frost protection

The frost protection is always active, even when the window is open.

If the measured temperature drops below 5 °C, the frost protection takes effect and the valve opens to 25 %. The valve closes again when 6 °C (hysteresis 1 K) is reached.

© 2024 Weinzierl Engineering GmbH

7.5 Heating/Cooling

If a **controller mode** with heating and cooling is selected, objects for heating/cooling control are displayed. This means that you can either switch directly between heating and cooling manually or activate or deactivate heating and cooling individually with automatic switchover.

Examples of automatic switching can be found in the section “ETS database – Room temperature controller – General”.

7.6 Temperature setting

There are 3 important temperature types in the controller:

- Temperature – Setpoint
  This is the temperature to which the regulation is performed.

Group object	Type KNX	Size	Direction
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 97 Room temperature controller – Temperature – Setpoint – Increase/Decrease	9.001	2 Byte	From KNX
GO 101 Room temperature controller – Temperature – Setpoint – State	9.001	2 Byte	To KNX

- Temperature – Comfort
  This temperature is set as a control value, or “Temperature – Setpoint” when changing to “Operation mode – Comfort”.

Group object	Type KNX	Size	Direction
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 102 Room temperature controller – Temperature – Comfort – State	9.001	2 Byte	To KNX

- Temperature – Economy
  This temperature is set as a regulation value, or “Temperature – Setpoint” when changing to “Operating mode – Economy”.

Group object	Type KNX	Size	Direction
GO 99 Room temperature controller – Temperature – Economy	9.001	2 Byte	From KNX
GO 103 Room temperature controller – Temperature – Economy – State	9.001	2 Byte	To KNX

When changing the operation modes, “Temperature – Setpoint” is reset by “Temperature – Comfort”, or “Temperature – Economy”.

© 2024 Weinzierl Engineering GmbH

7.6.1 Temporary setpoint adaption

When changing the operation mode, the temperature of the corresponding operation mode is set as the setpoint. During a change, the setpoint can be temporarily adapted via GO 96 or GO 97 Temperature – Setpoint.

7.6.2 Static setpoint adaption

To change the setpoint permanently, it has to be written to GO 98 Temperature – Comfort or to GO 99 Temperature – Economy.

© 2024 Weinzierl Engineering GmbH

7.7 Manual ventilation control

When ventilation is configured (ventilation speed levels > 0), the following objects are displayed for ventilation control:

Group object	Type KNX	Size	Direction
GO 126 Room temperature controller – Ventilation control – Manual	1.003	1 Bit	From KNX
GO 127 Room temperature controller – Ventilation control – Percent value	5.001	1 Byte	From KNX
GO 128 Room temperature controller – Ventilation control – Fan level	5.100	1 Byte	From KNX
GO 129 Room temperature controller – Ventilation control – Fan level – Increase/Decrease	1.007	1 Bit	From KNX

The objects act for the active operation mode (comfort, economy), or for the active system (heating/cooling for 2 systems).

Ventilation control – Manual

This object can be used to switch between manual ventilation control and automatic ventilation. To activate manual ventilation control, a 1 must be received at the object, for automatic ventilation a 0.

When activating the manual ventilation control, the currently active ventilation level or control value remains.

Ventilation control – Percent value

This object can be used to manually set the ventilation to a percent value.

The ventilation automatic is deactivated when a value is received.

Ventilation control – Fan level

This object can be used to manually set the ventilation to a fan level.

The ventilation automatic is deactivated when a value is received.

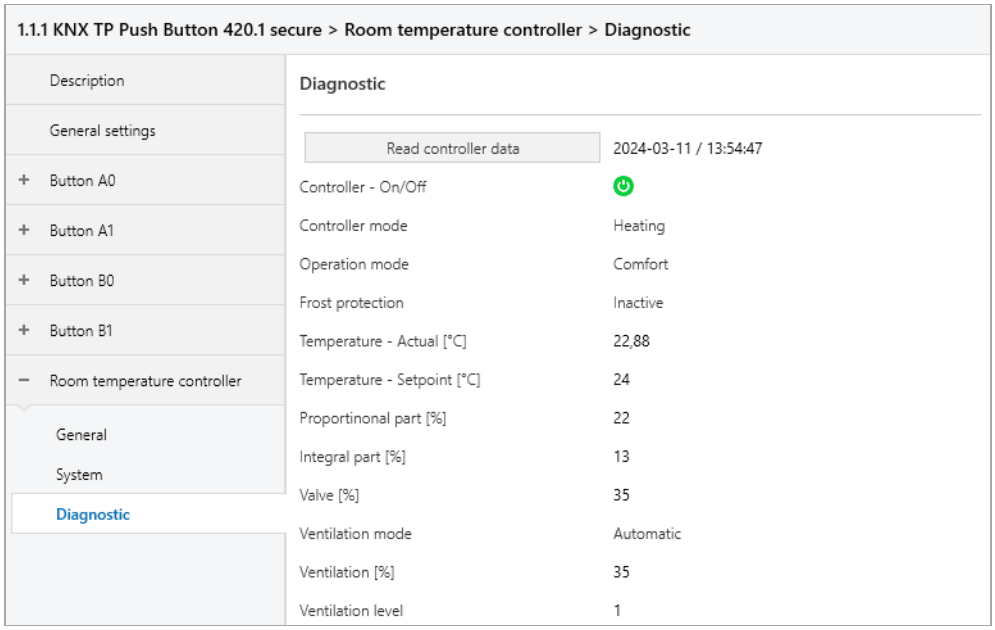
Ventilation control – Fan level – Increase/Decrease

This object can be used to manually increase/decrease the ventilation by one fan level. When a 1 is received, it is increased, when a 0 is received, it is decreased. It is increased/decreased relative to the currently active fan level.

The ventilation automatic is deactivated when a value is received.

© 2024 Weinzierl Engineering GmbH

7.8 Diagnostic



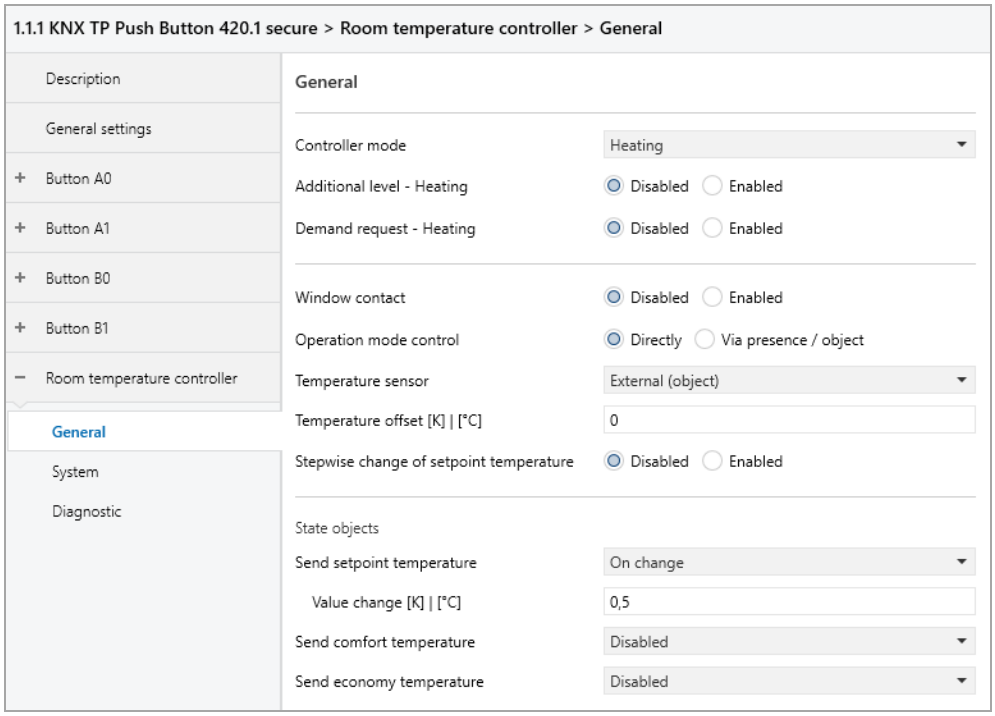
For diagnostic purposes, the controller data can be read during runtime using the "Read controller data" button. Here for example, it is possible to see which parts (proportional and integral) result in the valve control value.

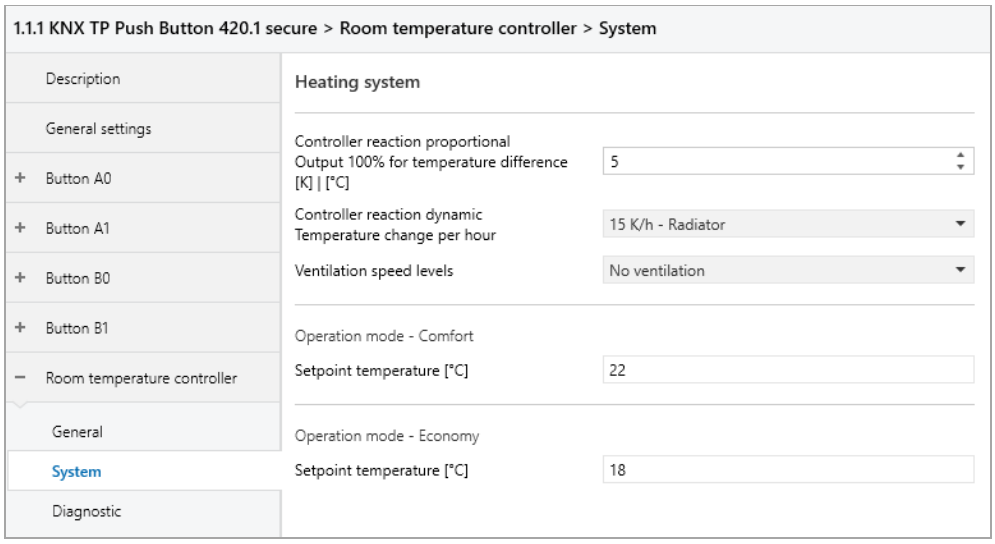
Proportional part = 22 %
Integral part = 13 %
result
Valve = 35 %

© 2024 Weinzierl Engineering GmbH

7.9 Configuration example - Heating without ventilation

7.9.1 Parameter settings





7.9.2 Description of the regulation

In this example, the internal temperature sensor is used.

The regulation is implemented with a PI controller. This is configured with the parameters **Controller reaction proportional Output 100% at temperature difference [K] | [°C]** and **Controller reaction dynamic Temperature change per hour**.

A description of these parameters can be found in the section “ETS database – Room temperature controller – System”.

© 2024 Weinzierl Engineering GmbH

7.9.3 Group objects

Group object	Type KNX	Size	Direction
GO 81 Room temperature controller – On/Off – Switch	1.001	1 Bit	From KNX
GO 82 Room temperature controller – On/Off – State	1.001	1 Bit	To KNX
GO 92 Room temperature controller – Comfort – Trigger	1.007	1 Bit	From KNX
GO 93 Room temperature controller – Economy – Trigger	1.007	1 Bit	From KNX
GO 94 Room temperature controller – Comfort – State	1.001	1 Bit	To KNX
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature - Economy	9.001	2 Byte	From KNX
GO 101 Room temperature controller – Temperature - Setpoint – State	9.001	2 Byte	To KNX
GO 108 Room temperature controller – Valve	5.001	1 Byte	To KNX

7.9.4 Description of the group objects

The room temperature controller can be switched on or off with GO 81.
GO 82 returns the corresponding status.

Switching between the operation modes is implemented with GO 92 or GO 93.
For example, to deactivate “Operation mode – Comfort” (GO 92), “Operation mode – Economy” (GO 93) must be triggered and vice versa. GO 94 returns the corresponding state.

GO 96 can be used to set the current setpoint temperature [°C], i.e. the temperature to which the regulation is performed. This is reset when the operation modes are switched back and forth (see GO 98 and GO 99).

GO 98 is used to set the setpoint temperature [°C] for “Operation mode – Comfort”, i.e. the temperature which is used as the control value when switching to “Operation mode – Comfort”. This overwrites the parameter “Operation mode – Comfort → **Setpoint temperature [°C]**”.

GO 99 is used to set the setpoint temperature [°C] for “Operation mode – Economy”. The behavior is analog to “Operation mode – Comfort” (see GO 98).

GO 101 provides the state of the current setpoint temperature [°C] to which the regulation is being performed.

The result of the temperature regulation (the current control value [%] of the heating valve) is sent on GO 108.

© 2024 Weinzierl Engineering GmbH

8 ETS database

The ETS5 database (for ETS 5.7 or newer) can be downloaded from the product website of the KNX TP Push Button 420.1 *secure* (www.weinzierl.de) or from the ETS online catalogue.

The KNX TP Push Button 420.1 *secure* supports KNX Data Security to protect the device against unauthorized access from the KNX bus. If the device is programmed via the KNX bus, this is done with encrypted telegrams.

8.1 KNX Security

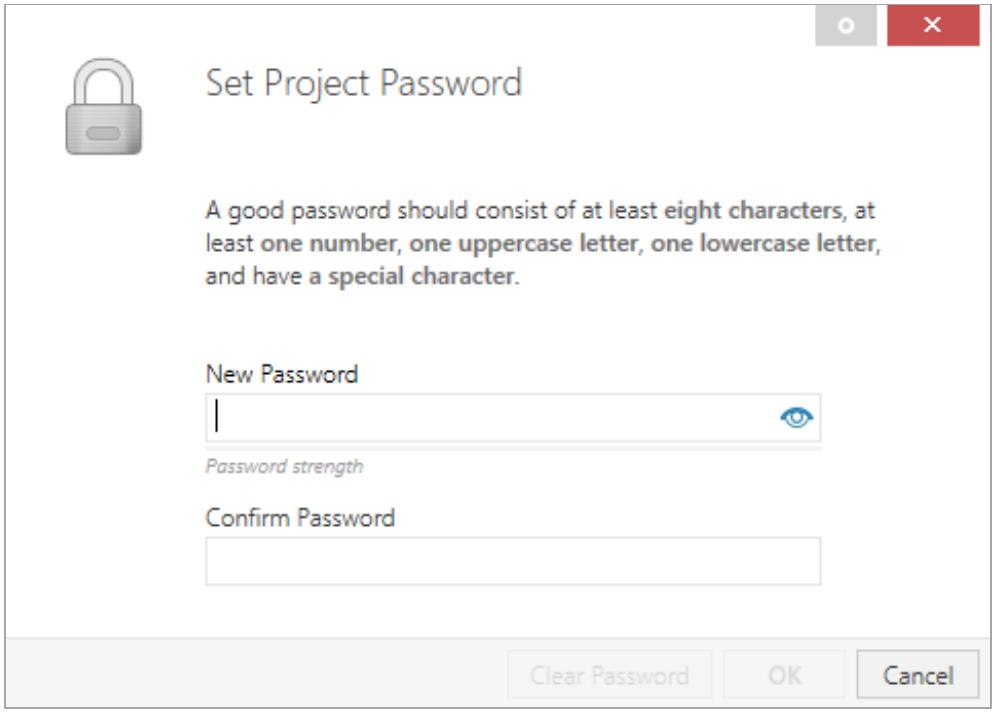
The KNX standard was extended by KNX Security to protect KNX installations from unauthorized access. KNX Security reliably prevents the monitoring of communication as well as the manipulation of the system.

The specification for KNX Security distinguishes between KNX IP Security and KNX Data Security. KNX Data Security describes the encryption on telegram level. This means that the telegrams on the twisted pair bus or via RF (radio frequency) are also encrypted.

Encrypted telegrams are longer than the previously used unencrypted ones. For secure programming via the bus, it is therefore necessary that the interface used (e.g. USB) and any intermediate line couplers support the so called KNX long frames.

8.1.1 Secure commissioning

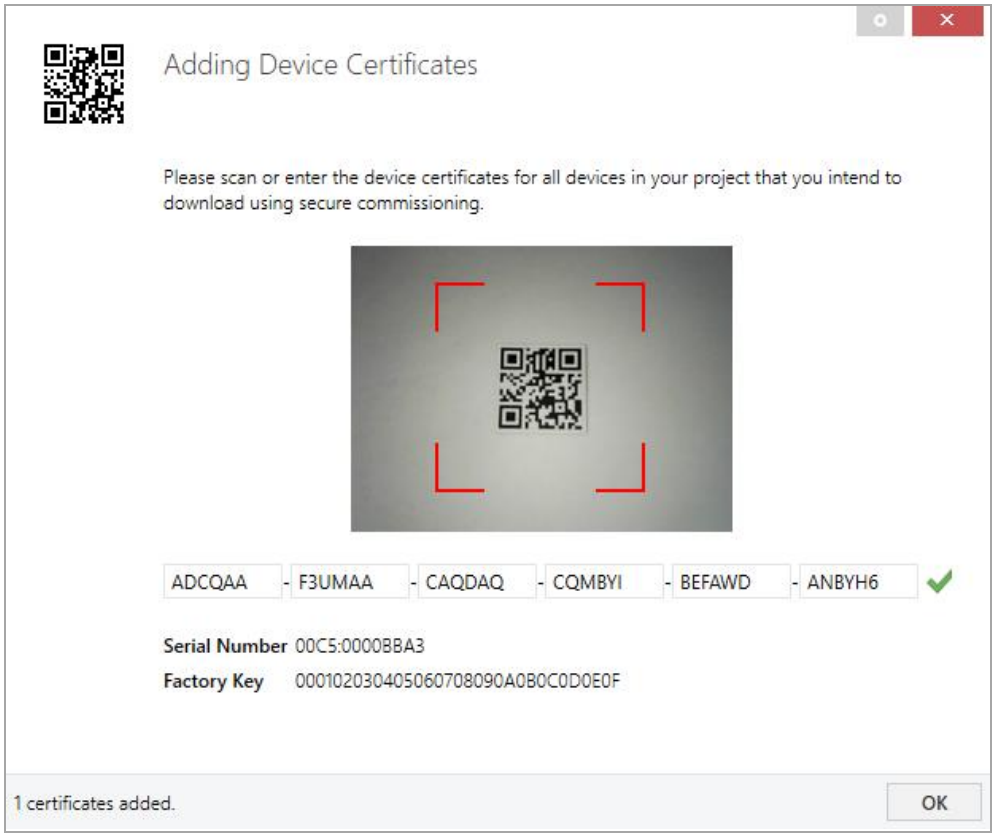
If the first product is inserted into a project with KNX Security, the ETS prompts you to enter a project password.



© 2024 Weinzierl Engineering GmbH

This password protects the ETS project from unauthorized access. This password is not a key that is used for KNX communication. The entry of the password can be bypassed with “Cancel”, but this is not recommended for security reasons.

ETS requires a device certificate for each device with KNX Security that is created in the ETS. This certificate contains the serial number of the device as well as an initial key (FDSK = Factory Default Setup Key).



The certificate is printed as text on the device. It can also be scanned from the printed QR code via a webcam.

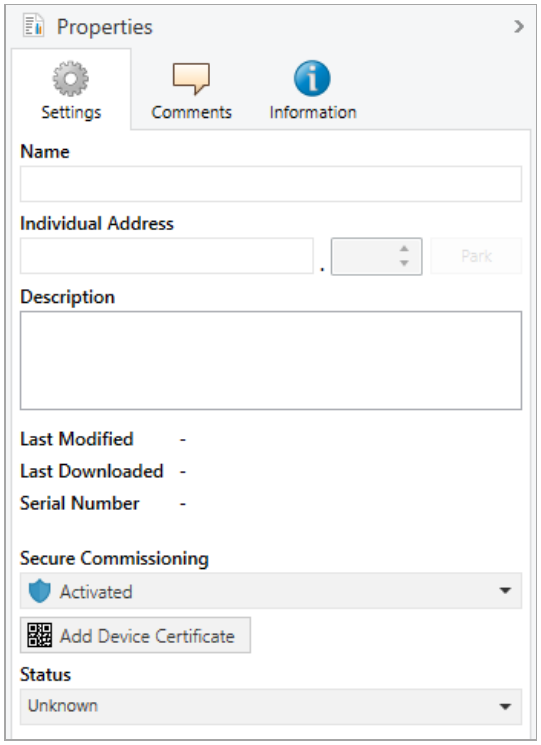
The list of all device certificates can be managed in the ETS panel Reports – Project Security.

This initial key is required to safely put a device into operation from the start. Even if the ETS download is recorded by a third party, the third party has no access to the secured devices afterwards. During the first secure download, the initial key is replaced by the ETS with a new key that is generated individually for each device. This prevents persons or devices who may know the initial key from accessing the device. The initial key is reactivated after a reset to factory default settings.

The serial number in the certificate enables the ETS to assign the correct key to a device during a download.

© 2024 Weinzierl Engineering GmbH

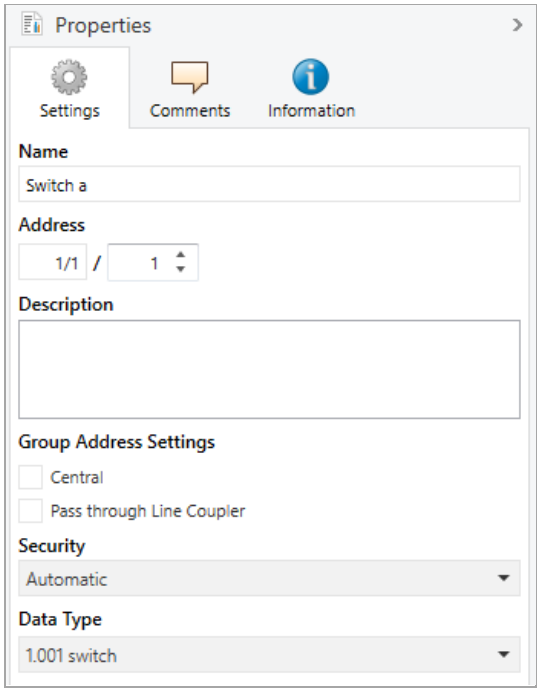
In the ETS project in the properties of the device, secure commissioning can be activated and the device certificate can be added:



© 2024 Weinzierl Engineering GmbH

8.1.2 Secure group communication

Each object of the device can communicate either encrypted or unencrypted. The encryption is set under “Security” in the properties of the used group address:



The setting “Automatic” activates encryption if both objects to be connected can communicate encrypted. Otherwise encrypted communication between the objects is not possible.

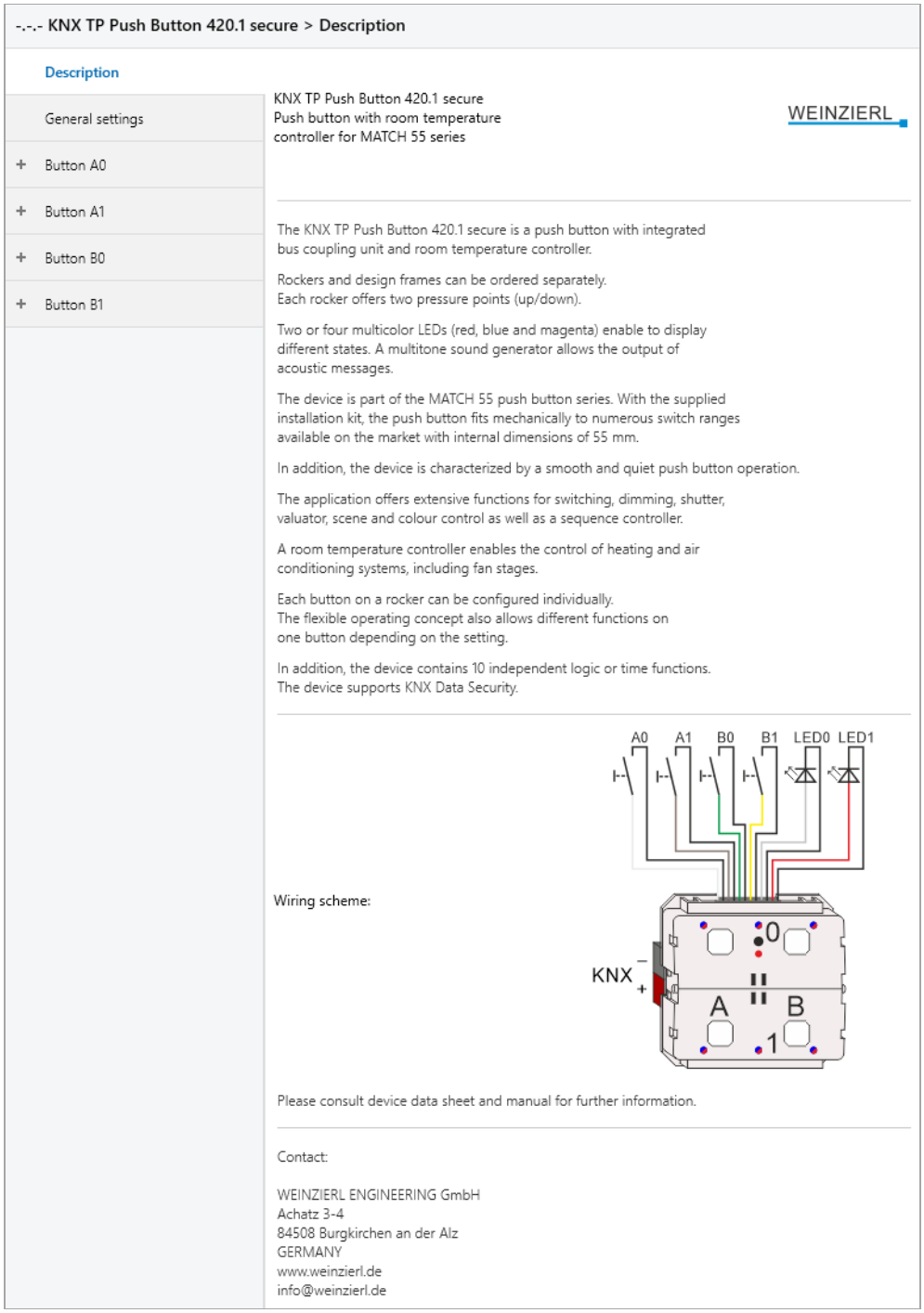
In the overview of communication objects in the ETS project, secured objects can be recognized by a shield symbol:

	Security	Number	Name	Object Function	Description	Group Address
	🛡	11	Button A0: Object a	Switch	Switch a	1/1/1
		12	Button A0: Object b	Switch	Switch b	1/1/2
	🛡	21	Button A1: Object a	Switch	Switch a	1/1/1
		22	Button A1: Object b	Switch	Switch b	1/1/2

A separate key is automatically generated by the ETS for each secured group address. These keys can also be checked in the ETS panel Reports – Project Security. To enable all devices to communicate with a secure group address, the keys must be known to all. Therefore a download must be made into all devices that use this group address when a key is created or changed. A key is changed by the ETS e.g. when the encryption of a group address is switched off and on again.

© 2024 Weinzierl Engineering GmbH

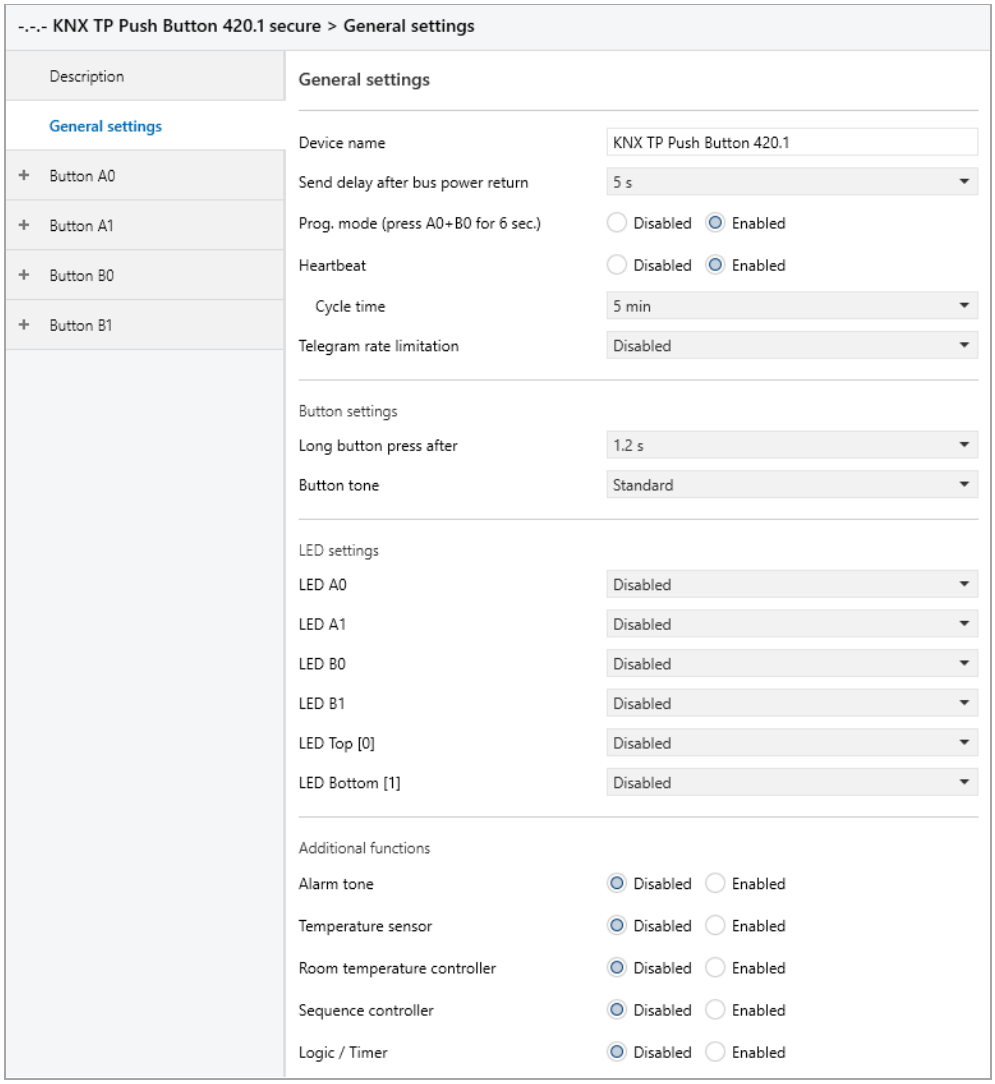
8.2 Description



This page shows the device description and the associated wiring scheme.

© 2024 Weinzierl Engineering GmbH

8.3 General settings



Device name *(30 characters)*

An arbitrary name can be assigned for the KNX TP Push Button 420.1 *secure*. The device name should be meaningful, e.g. “Living Room”. This helps the clarity of the ETS project.

Send delay after bus power return

A send delay of telegrams after the return of the bus voltage can be set via this parameter. In this case, telegrams from the device are sent to the KNX bus in a delayed manner by the set time. This results in a reduction of the bus load at a bus power return. Other functions such as receiving telegrams or query of the inputs are not affected by this parameter

Prog. mode (press A0+B0 for 6 sec.)

In addition to the normal programming button 3 the device allows activating the programming mode on the device front without removing the rocker. The programming mode can be activated and deactivated via pressing simultaneously both buttons 4 and 6 for 6 seconds.

© 2024 Weinzierl Engineering GmbH

This feature can be enabled and disabled via the parameter “Prog. mode (press A0+B0 for 6 sec.)”. The recessed programming button ❸ is always enabled and not influenced by this parameter.

The prog. mode (A0+B0) should be deactivated if push button functions are configured for actuations of more than 6 seconds (e.g. moving shutter via Deadman switch)

Heartbeat

Sends cyclically the value 1 to the KNX bus to indicate that the device is currently ready for operation. The cycle time can be selected between 1 minute and 24 hours.

Group object	Type KNX	Size	Direction
GO 1 Heartbeat – Trigger	1.001	1 Bit	To KNX

Long button press after

Here you can set the time for detecting a long actuation, this time is valid for all inputs/buttons.

Button tone

Here the button tone can be set. This is triggered, for example, when a key is pressed.
The following options are available:

- Disabled
- Short
- Standard
- Long

LED A0
LED A1
LED B0
LED B1
LED Top [0]
LED Bottom [1]

Here the operating mode of the LEDs in normal operation can be set.
The following options are available:

- Disabled
  LED is disabled always.
- Enabled
  LED is enabled always.
- Via group object
  LED is operated only via group object.
- Input/Button A0/A1/B0/B1 state
  LED is operated only via input/button.

© 2024 Weinzierl Engineering GmbH

Alarm tone

The function block for the alarm tone can be activated or deactivated here.
See section "ETS database – Alarm tone".

Temperature sensor

The function block for the alarm tone can be activated or deactivated here.
See section "ETS database – Temperature sensor".

Temperatur controller

The function block for the alarm tone can be activated or deactivated here.
See section "ETS database – Temperature controller".

Sequence controller

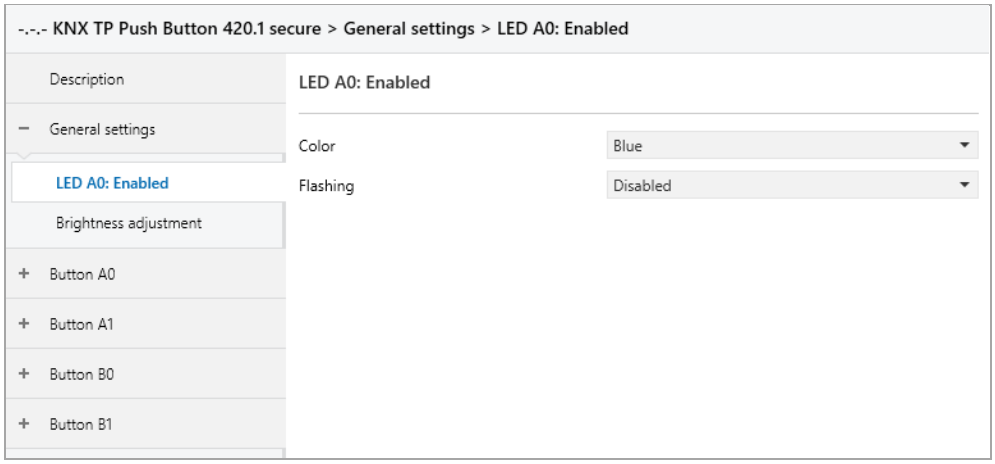
The function block for the alarm tone can be activated or deactivated here.
See section "ETS database – Sequence controller".

Logic / Timer

The function block for the alarm tone can be activated or deactivated here.
See section "ETS database – Logic / Timer".

© 2024 Weinzierl Engineering GmbH

8.4 LED Function: Enabled



Color

Here the color of the activated LED can be set.
The following options are available:

- Blue
- Red
- Magenta

Flashing

A flashing pattern for the LED can be defined here.
The following options are available:

- Disabled
- Slow
- Fast

8.5 LED Function: Via group object

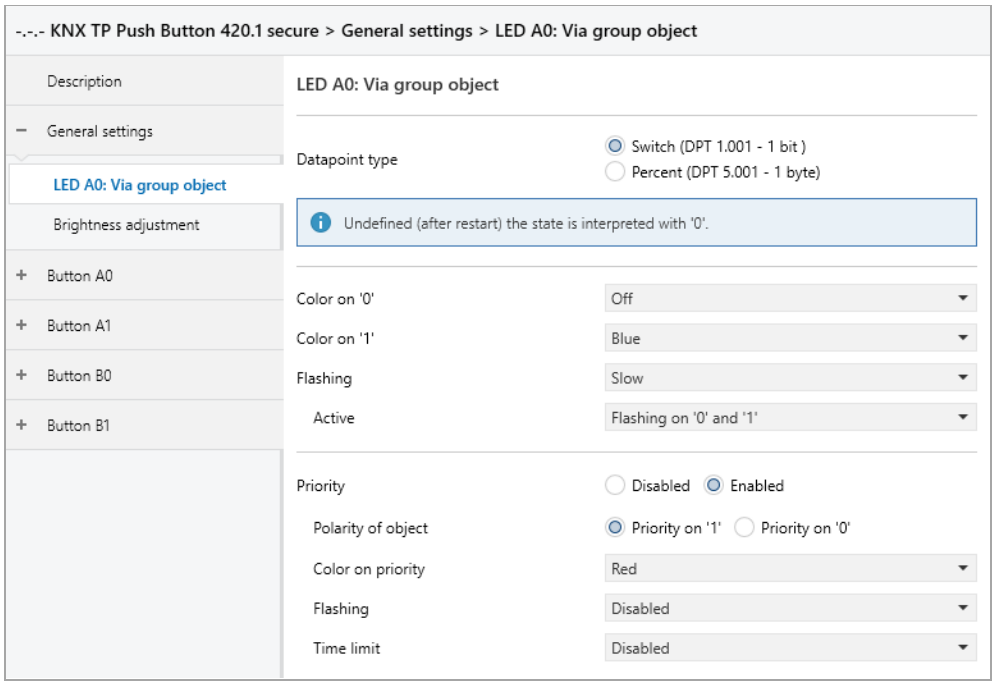
Datapoint type

The following types are configurable:

- Switch (DPT 1.001 – 1 bit)
- Percent (DPT 5.001 – 1 byte)

© 2024 Weinzierl Engineering GmbH

8.5.1 Datapoint type – Switch (DPT 1.001 – 1 bit)



Color on ‘0‘

Here the color of the LED for the status ‘0’ can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

Color on ‘1‘

Here the color of the LED for the status ‘1’ can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

Flashing

A flashing pattern for the LED can be set here.
The following options are available:

- Disabled
- Slow
- Fast

© 2024 Weinzierl Engineering GmbH

Active

Here it is possible to set the status 0 or 1 at which the LED should flash.
The following options are available:

- Flashing on ‘0’
- Flashing on ‘1’
- Flashing on ‘0’ and ‘1’

Priority

An object for the priority can be activated or deactivated.

Polarity of object

The polarity of object parameter is used to set, how the priority is to be activated, either by receiving a 1 or a 0. The opposite telegram deactivates the priority again.

Color on priority

Here the color for activated priority can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

Flashing

Here the flashing pattern for activated priority can be set.
The following options are available:

- Disabled
- Slow
- Fast

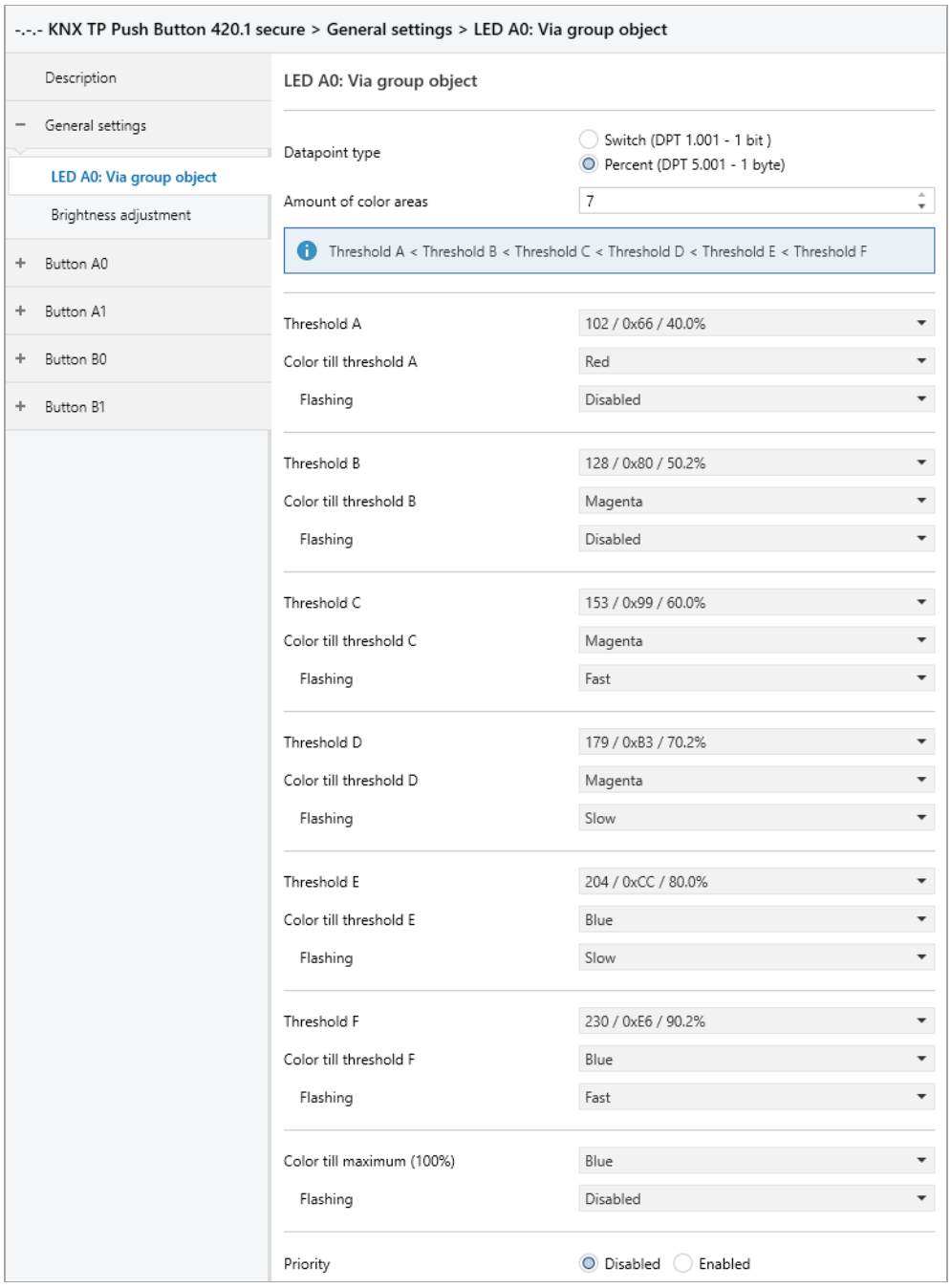
Time limit

Here the time limit for activated priority can be set.
The following options are available:

- Disabled
- 5 min
- 15 min
- 30 min
- 1 h
- 2 h
- 5 h
- 10 h
- 12 h

© 2024 Weinzierl Engineering GmbH

8.5.2 Datapoint type – Percent (DPT 5.001 – 1 byte)



Amount of color areas

Here the number of the individual color ranges can be set to which the value range 0 – 100 % is divided. There are 2 … 7 color ranges available.

Threshold A – F

The threshold value of this color range can be set here. The corresponding color range is active up to this threshold.

© 2024 Weinzierl Engineering GmbH

Color till threshold A – F

Here the color for this color area can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

Color till maximum (100%)

Here the color for this color area can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

Flashing

Here the flashing pattern for this color area can be set.
The following options are available:

- Disabled
- Slow
- Fast

Priority

An object for the priority can be activated or deactivated.

Polarity of object

The polarity of object parameter is used to set, how the priority is to be activated, either by receiving a 1 or a 0. The opposite telegram deactivates the priority again.

Color on priority

Here the color for activated priority can be set.
The following options are available:

- Off
- Blue
- Red
- Magenta

© 2024 Weinzierl Engineering GmbH

Flashing

Here the flashing pattern for activated priority can be set.
The following options are available:

- Disabled
- Slow
- Fast

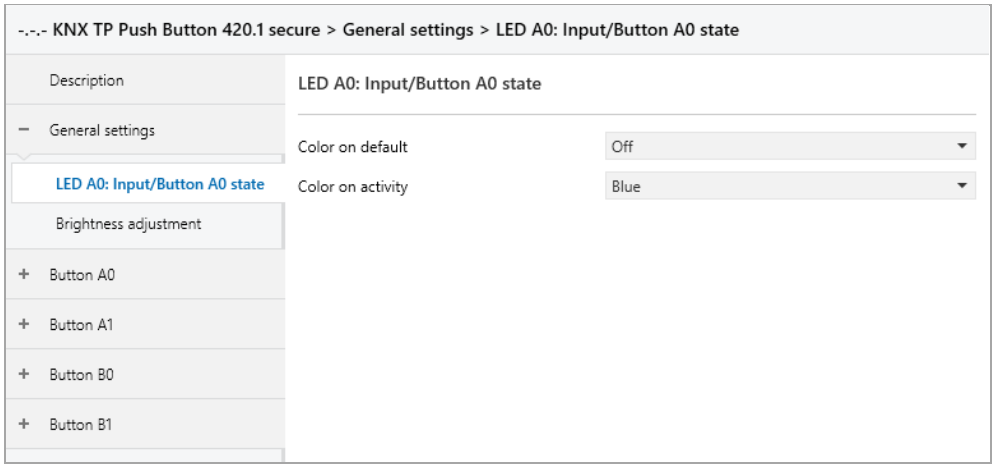
Time limit

Here the time limit for activated priority can be set.
The following options are available:

- Disabled
- 5 min
- 15 min
- 30 min
- 1 h
- 2 h
- 5 h
- 10 h
- 12 h

© 2024 Weinzierl Engineering GmbH

8.6 LED Function: Input/Button A0/A1/B0/B1 state



The state indication is mainly used for connected push buttons.

Color on default

Here the color for the default state of the corresponding button (e.g. LED A0 → button A0) can be set, i.e. the LED color when the button is not pressed.
The following options are available:

- Off
- Blue
- Red
- Magenta

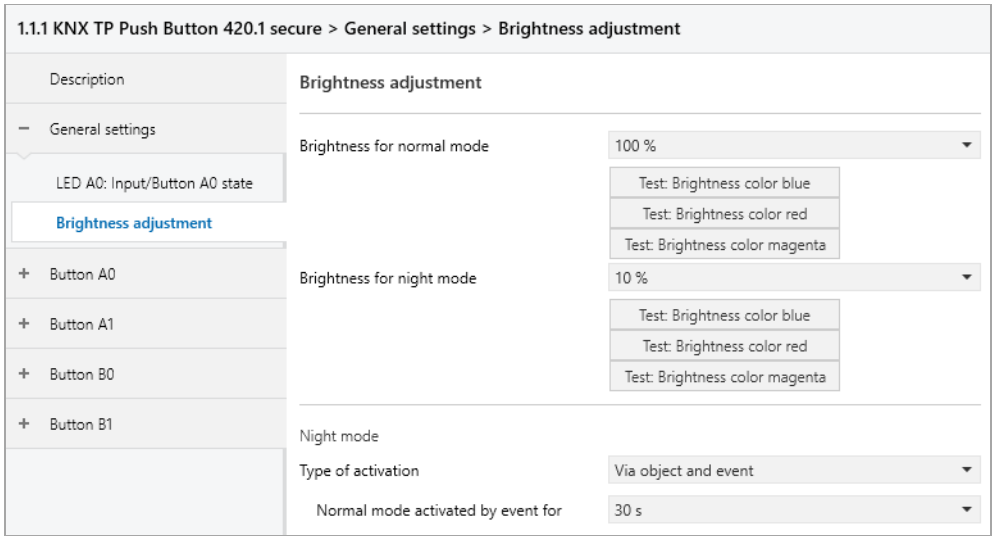
Color on activity

Here the color for the active state of the corresponding button (e.g. LED A0 → button A0) can be set, i.e. the LED color when the button is pressed.
The following options are available:

- Off
- Blue
- Red
- Magenta

© 2024 Weinzierl Engineering GmbH

8.7 LED Function: Brightness adjustment



Brightness for normal mode

The brightness level (0 % ... 100 %) of the LEDs in normal mode can be set here.

Brightness for night mode

The brightness level of the LEDs in night mode can be set here.
The following options are available:

- Deactivated
- 0 % ... 100 %

Type of activation

(only if brightness for night mode is set)

Here you can set how night mode is activated.
The following options are available:

- Via object
  The object can be used to switch between normal and night mode.

- Via event
  Normal mode is activated by pressing a button, an alarm or an LED status change for a set time. Otherwise, night mode is active.

- Via object and event
  If night mode is activated via the object, the above events are used to switch to normal mode for the set time.

When activated via object, the following object is available:

Group object	Type KNX	Size	Direction
GO 14 Night mode – Switch – Day/Night	1.024	1 Bit	From KNX

© 2024 Weinzierl Engineering GmbH

Normal mode activated by event for
(only if brightness for night mode is set and when activated via event)

Here you can set how long normal mode remains activated by an event.
The following options are available:

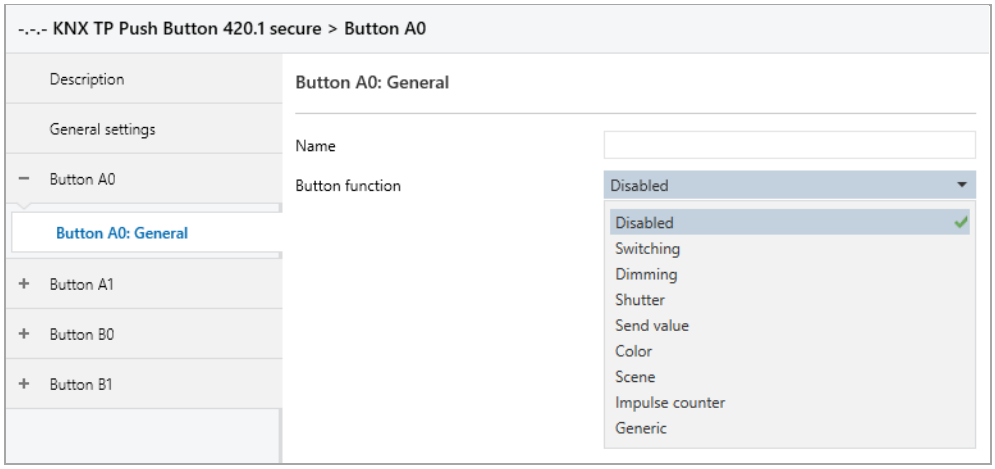
- 10 s … 4 h

Test: Brightness color blue/red/magenta

This button can be used to test the selected **brightness** for the specific color without an ETS download (application program). Only the individual address must be programmed. The current **brightness** parameter setting is used for the test. The color is visible for 30 seconds. It can be switched off by clicking the button again.

© 2024 Weinzierl Engineering GmbH

8.8 Button A0: General



The 1st input/button will be described below, the functioning of the other 3 inputs/buttons is according to the 1st.

Name *(30 characters)*

An arbitrary name can be assigned for the input/button. However, this should be clear and meaningful, this makes it easier to work with the associated group objects, because the given name is displayed there as a label. If no name is assigned, the group objects are named “Button …” with the button number engraved on the housing, which is also used in this manual.

Button function

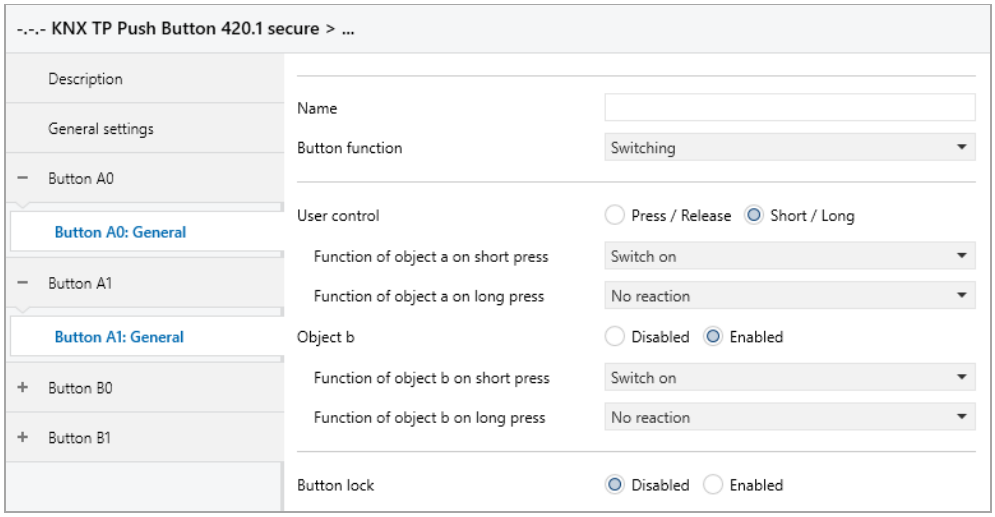
The following functions are selectable:

- Switching
- Dimming
- Shutter
- Send value
- Color
- Scene
- Generic

© 2024 Weinzierl Engineering GmbH

8.9 Configuration example „Rocker“

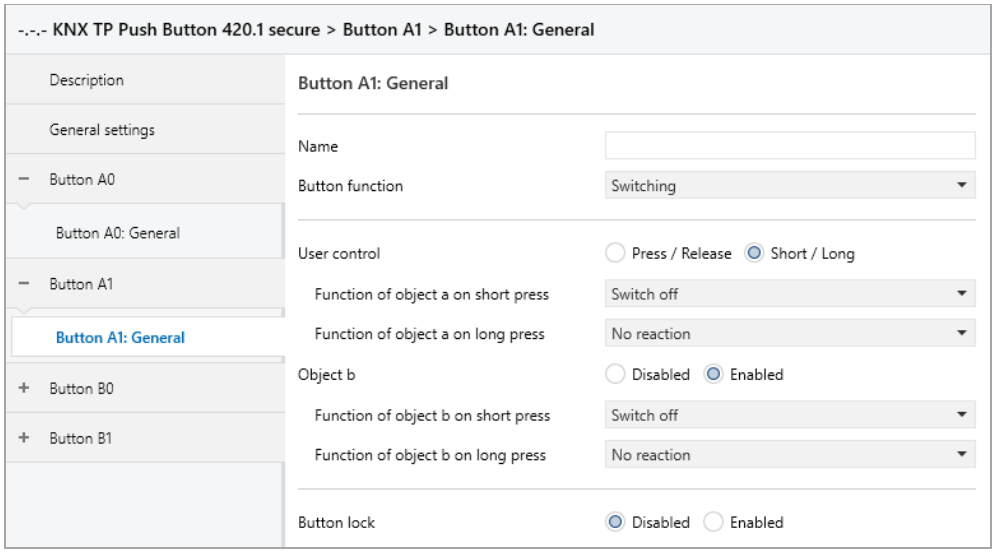
In the ETS, there is the possibility to edit two or more parameter pages at the same time. This works e.g. by selecting (resp. clicking) the individual pages while holding the ctrl key.



Thus, button A0 and button A1 are now configured identically:

Button function = Switching
User control = Short / Long
Function of object a on short press = Switch on
Function of object b on short press = Switch on

Now the parameter page of button A1 must be selected and the function of object a and b must be adjusted accordingly.

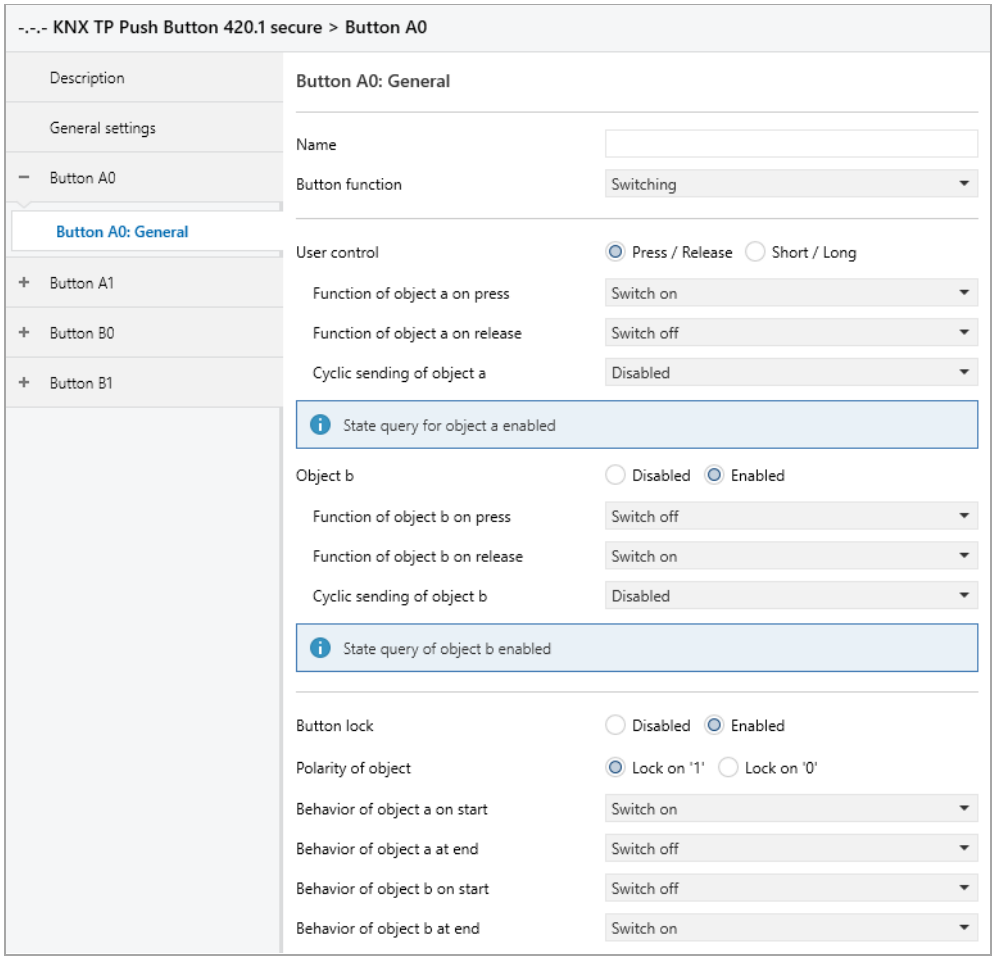


Thus, button A1 is now configured opposite to button A0:

Button function = Switching
User control = Short / Long
Function of object a on short press = Switch off
Function of object b on short press = Switch off

© 2024 Weinzierl Engineering GmbH

8.10 Button function “Switching”



If the switching function is selected, up to 2 binary switching telegrams can be sent via the following objects:

Group object	Type KNX	Size	Direction
GO 21 Button A0: Object a – Switch	1.001	1 Bit	To KNX
GO 22 Button A0: Object b – Switch	1.001	1 Bit	To KNX

Object b is only visible when activated by parameter.

The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

User control

The parameter “User control” determines whether telegrams are sent when the input is changed (e.g. key switches) or when the button is operated short/long (e.g. button for switching/dimming).

© 2024 Weinzierl Engineering GmbH

Function of object a/b on press
Function of object a/b on short press
Function of object a/b on release
Function of object a/b on long press

It is selectable for each object a and b, which telegram is sent on press and release or on short/long button press.

The following options are available:

- No reaction
- Switch on
- Switch off
- Toggle
  On toggle the last value received from the bus is evaluated if the write flag is activated on the object.

Object b

Here object b can be enabled and configured.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the input/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior of object a/b on start *(only for button lock)*

The telegram can be configured here, which is sent on the according object when the lock is activated.

Behavior of object a/b at end *(only for button lock)*

The telegram can be configured here, which is sent on the according object when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.10.1 State query

The Status query function is used, for example, to monitor window contacts.

The status query mode is automatically recognized by the firmware if the following parameter settings are present:

User control: Press / Release
Function (…) on press: Switch on
Function (…) on release: Switch off

or inverted:

User control: Press / Release
Function (…) on press: Switch off
Function (…) on release: Switch on

With configured status query, the value on the object is kept up to date. The value corresponds to the current state that is read. If the lock is active, the object value corresponds to the last status before the lock or the configured value when the lock is activated.

Cyclic sending of object a/b *(only for state query)*

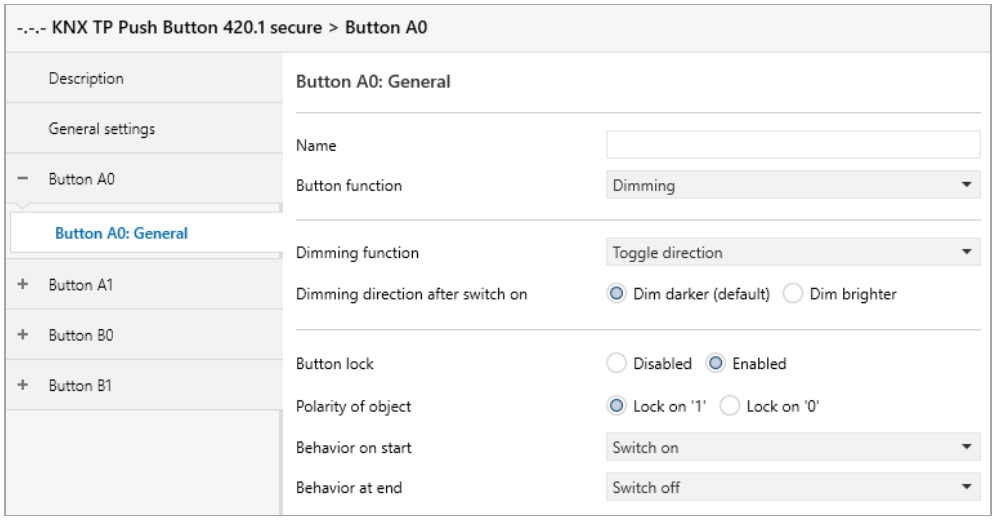
When the status query is active, cyclic sending can be configured independently for object a and b. The following options are available:

- 1 min
- 2 min
- 5 min
- 10 min
- 20 min
- 30 min
- 1 h
- 6 h
- 12 h
- 24 h

When the lock is active, cyclic sending is disabled.

© 2024 Weinzierl Engineering GmbH

8.11 Button function “Dimming”



On selection of button function dimming following objects are visible:

Group object	Type KNX	Size	Direction
GO 21 Button A0: Dimming on/off – Switch	1.001	1 Bit	To KNX
GO 22 Button A0: Dimming relative – Brighter/Darker	3.007	4 Bit	To KNX

The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

Dimming function

The parameter “Dimming function” determines whether only one switching/dimming direction or 1-button control is to be used.

- On / Dim brighter
- Off / Dim darker
- Toggle direction
  On toggle direction, the last value received from the bus is evaluated if the write flag is activated on the object. This applies to object 21 and object 22.
  In addition, object 23 is visible. If one of the limit values is received here as the status (e.g. 0 % or 100 %), the dimming direction is adjusted accordingly.

Group object	Type KNX	Size	Direction
GO 23 Button A0: Dimming absolute – State	5.001	1 Byte	From KNX

If the input/button detects a short button press, a switching telegram is sent via object 21. On long button press, a relative dimming is sent over the entire dimming range to object 22. When releasing after long button press, a dimming-stop telegram is sent via object 22.

© 2024 Weinzierl Engineering GmbH

Dimming direction after switch on *(only for toggle direction)*

This parameter is only visible on toggle direction and determines the dimming direction of the next dimming command following an ON telegram.

This is useful in the bathroom, for example, when the light is switched on at low brightness at night and then should be dimmed brighter.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the input/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior of object a/b on start *(only for button lock)*

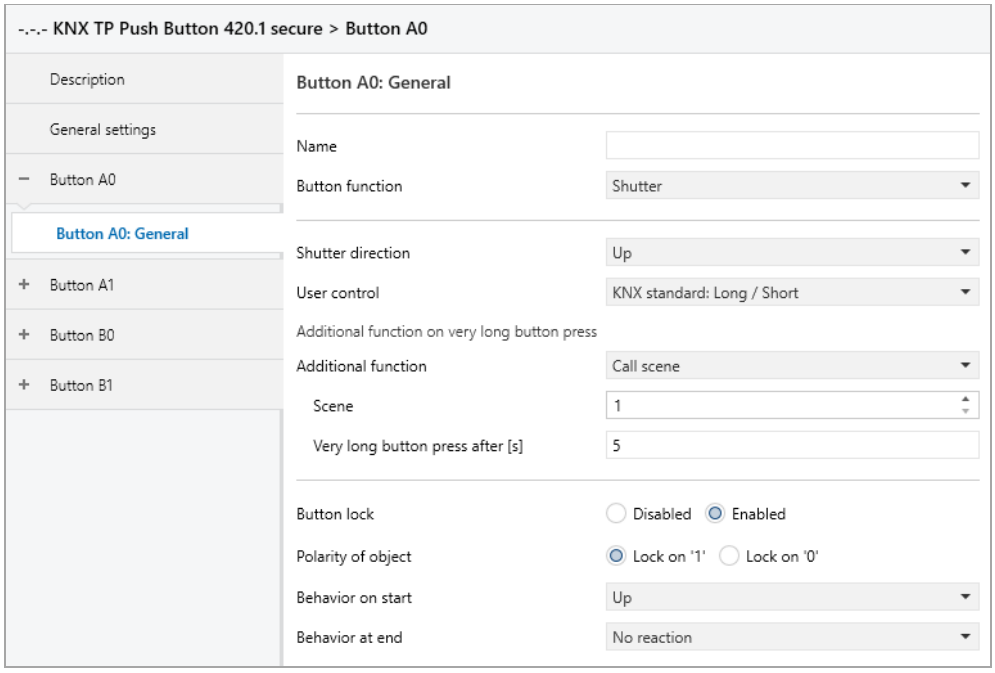
The telegram can be configured here, which is sent on the according object when the lock is activated.

Behavior of object a/b at end *(only for button lock)*

The telegram can be configured here, which is sent on the according object when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.12 Button function “Shutter”



On selection of button function shutter following objects are visible:

Group object	Type KNX	Size	Direction
GO 21 Button A0: Drive start – Up/Down	1.008	1 Bit	To KNX
GO 22 Button A0: Drive stop – Step/Stop	1.007	1 Bit	To KNX

The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

Shutter direction

The parameter “Shutter direction” determines whether only one shutter direction or 1-button control is to be used.

- Up
- Down
- Toggle
  If the write flags are set, the shutter objects evaluate the last value received from the bus. This keeps the direction and state of the shutter in the button up to date. This applies to object 21 and object 22. In addition, object 23 is visible. If one of the limit values is received here as the status (e.g. 0 % or 100 %), the driving direction is adjusted accordingly.

Group object	Type KNX	Size	Direction
GO 23 Button A0: Blind position – State	5.001	1 Byte	From KNX

© 2024 Weinzierl Engineering GmbH

User control

The parameter “User control” determines the sending of telegrams on short and long button press:

- KNX standard: Long / Short
  This is the standard configuration for controlling a shutter.
  Long actuation: Drive command via object 21
  Short actuation: Stop/Step command via object 22
  Very long actuation: Additional function

- KNX standard with turning time
  This is the standard configuration for controlling a shutter with the extension that a stop is triggered when the shutter is released within the turning time. Thus, you can turn the slats with dead man.
  Long actuation: Drive command via object 21
  Release after long actuation within turning time: Stop/Step command via object 22
  Release after long actuation after turning time: No reaction
  Short actuation: Stop/Step command via object 22
  Very long actuation: Additional function

- KNX Inverted: Short / Long
  This is the inverted standard configuration for controlling a shutter. This should be used when the main usage is on move commands.
  Short actuation: Drive command via object 21
  Long actuation: Stop/Step command via object 22
  Actuation during drive: Stop/Step command via object 22
  Very long actuation: Additional function

- Short / Short
  This is an optimized variant for controlling a shutter, which uses only short button presses. The step command in the actuator should be disabled.
  Short actuation: Drive command via object 21
  Actuation during drive: Stop/Step command via object 22
  Long actuation: Additional function

- Short / Short plus Long with turning time
  This is an optimized variant for controlling a shutter, which mainly uses short button presses. A long button press can additionally be used to turn the slats.
  The step command in the actuator should be disabled.
  Short actuation: Drive command via object 21
  Long actuation: Drive command via object 21
  Release after long actuation within turning time: Stop/Step command via object 22
  Release after long actuation after turning time: No reaction
  Actuation during drive: Stop/Step command via object 22
  Very long actuation: Additional function

© 2024 Weinzierl Engineering GmbH

- Hold (Deadman switch)
  The dead man operation mode can be used for applications with short moving time, for example for skylights. The step command in the actuator should be disabled.
  On actuation: Drive command via object 21
  On release: Stop/Step command via object 22

- Hold with turning time
  This operating mode is suitable for applications with mainly short moving times, with the addition that long moving times, by holding beyond the turning time, can also be easily realized. The step command in the actuator should be disabled.
  On actuation: Drive command via object 21
  On release within turning time: Stop/Step command via object 22
  On release after turning time: No reaction

- Hold, delayed with turning time
  This is analog to the operating mode "Hold with turning time", with the difference that the movement is on the long button press. The step command in the actuator should be disabled.
  Long actuation: Drive command via object 21
  Release after long actuation within turning time: Stop/Step command via object 22
  Release after long actuation after turning time: No reaction
  Short actuation: Additional function
  Actuation during drive: Stop/Step command via object 22

Drive time (Time window for stop) [s]

Only displayed for the user controls with “Actuation during drive: Stop/Step command”. The time window for the actuation at which a stop/step command is sent is set here.

Turning time [s]

Only displayed for the user controls with turning time. In general, by releasing within the turning time, the shutter can be stopped while continuing to move after the turning time.

If the button tone is activated on the "General settings" page, the end of the turning time is indicated by a signal tone.

© 2024 Weinzierl Engineering GmbH

Additional function on short/long/very long button press

The following functions can be triggered by short/long/very long keystrokes:

- Switch on
- Switch off
- Toggle
  On toggle, the last value received from the bus is evaluated if the write flag is activated on the object.

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Switch	1.001	1 Bit	To KNX

- Dim brighter
- Dim darker

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Dimming relative	3.007	4 Bit	To KNX

- Drive up
- Drive down

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Up/Down	1.008	1 Bit	To KNX

- Step up / Stop
- Step down / Stop

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Step/Stop	1.007	1 Bit	To KNX

- Send value
  With this function, a byte value can be sent. A parameter for selecting the value is displayed

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Send value	5.001	1 Byte	To KNX

- Call scene
  With this function, a scene can be sent. A parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Call scene	18.001	1 Byte	To KNX

- Save scene
  With this function, a scene can be saved. A parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO 24 Button A0: Additional function – Save scene	18.001	1 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

Very long button press after [s]

This parameter is visible only when using the very long actuation, it sets the time to detect a very long button press.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the input/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior on start *(only for button lock)*

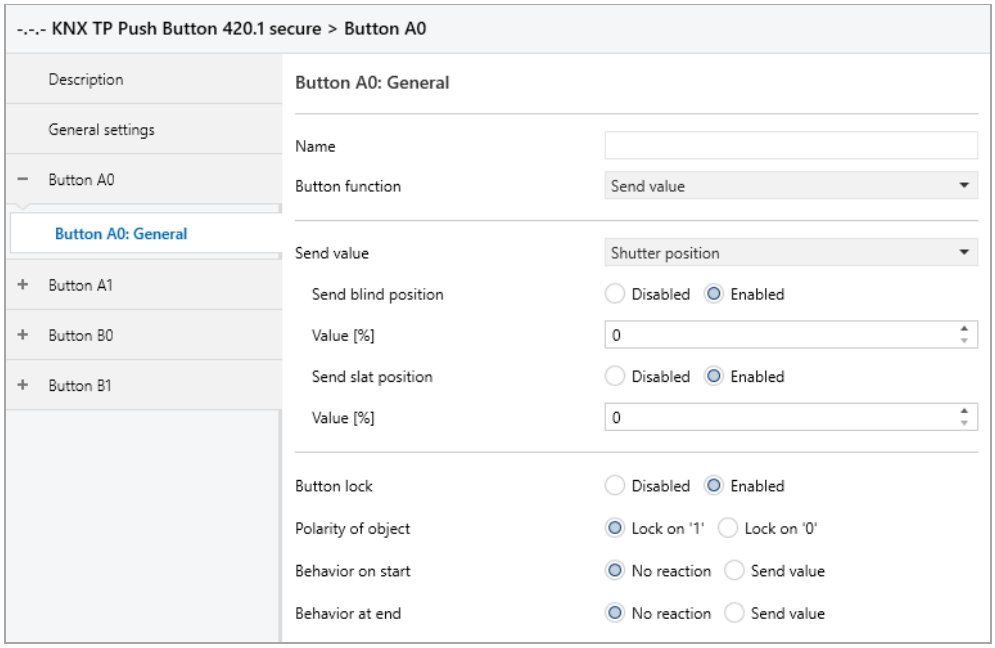
The telegram can be configured here, which is sent when the lock is activated.

Behavior at end *(only for button lock)*

The telegram can be configured here, which is sent when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.13 Button function “Send value”



If button function send value is selected, the following telegrams can be sent at button press:

- 1 Byte – Integer value / Percent

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send integer value (1 Byte) – Set value	5.001	1 Byte	To KNX

- 2 Byte – Integer value

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send integer value (2 Bytes) – Set value	7.001	2 Byte	To KNX

- 2 Byte – Float value

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send float value (2 Bytes) – Set value	9.001	2 Byte	To KNX

- 3 Byte – RGB value

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send RGB color value (3 Bytes) – Set value	232.600	3 Byte	To KNX

- 14 Byte – ASCII string

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send ASCII string (14 Bytes) – Set value	16.000	14 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

- Shutter position

Group object	Type KNX	Size	Direction
GO 21 Button A0: Send blind position – Set position	5.001	1 Byte	To KNX
GO 22 Button A0: Send slat position – Set position	5.001	1 Byte	To KNX

If the shutter is selected as the value to be sent, height is sent on button press, lamella is sent on releasing the button, if the respective value is used.

A field for entering the values to be sent is displayed, as well as the objects appropriate to the selected type.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the input/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior on start *(only for button lock)*

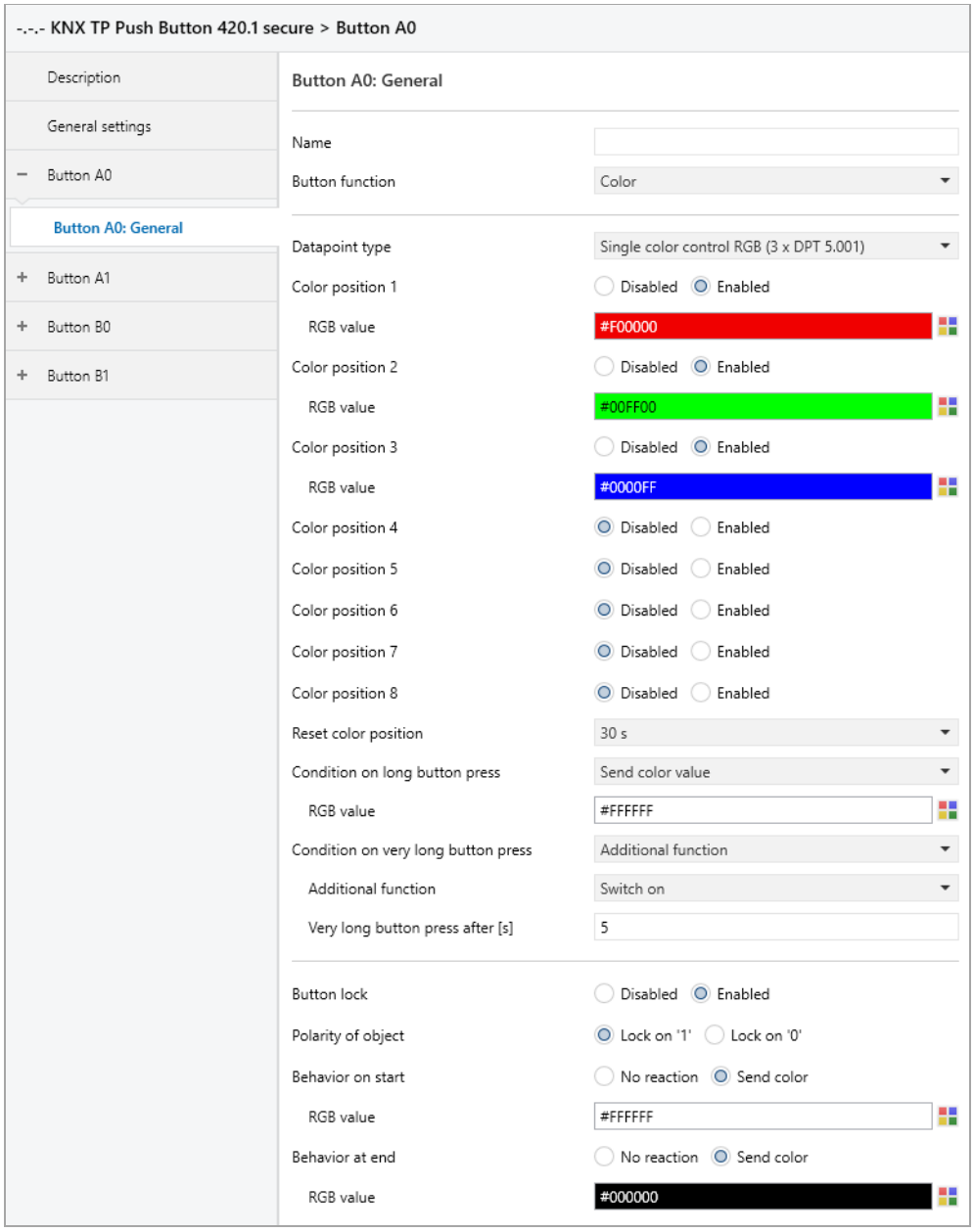
The telegram can be configured here, which is sent when the lock is activated.

Behavior at end *(only for button lock)*

The telegram can be configured here, which is sent when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.14 Button function “Color”



The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

Datapoint type

Depending on this parameter, the following objects are available for color control:

- Single color control RGB (3 x DPT 5.001)

Group object	Type KNX	Size	Direction
GO 21 Button A0: Value R – Set color	5.001	1 Byte	To KNX
GO 22 Button A0: Value G – Set color	5.001	1 Byte	To KNX
GO 23 Button A0: Value B – Set color	5.001	1 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

- Single color control RGBW (4 x DPT 5.001)

Group object	Type KNX	Size	Direction
GO 21 Button A0: Value R – Set color	5.001	1 Byte	To KNX
GO 22 Button A0: Value G – Set color	5.001	1 Byte	To KNX
GO 23 Button A0: Value B – Set color	5.001	1 Byte	To KNX
GO 24 Button A0: Value W – Set color	5.001	1 Byte	To KNX

- Color control RGB (DPT 232.600)

Group object	Type KNX	Size	Direction
GO 21 Button A0: RGB color value (3 Bytes) – Set color	232.600	3 Byte	To KNX

- Color control RGBW (DPT 251.600)

Group object	Type KNX	Size	Direction
GO 21 Button A0: RGBW color value (6 Bytes) – Set color	251.600	6 Byte	To KNX

Color position 1 – 8

For each position a color can be chosen.

If only one color position is activated, it is sent on short button press. If several color positions are used, the activated positions are switched through with each short button press.

The behavior for selecting and sending the color positions can be determined by the following parameter.

Reset color position

The following options are available:

- Never
  Starting with the first color position, the next position of the list is sent with each short button press. After the last color position has been sent, the list starts again from the beginning.

- After execution
  This selection enables the parameter **Time until execution**.
  Beginning with the first color position, each short button press switches the position by one position within the execution delay. At the end of the execution delay, the current color position is sent.

© 2024 Weinzierl Engineering GmbH

- 5 s – 10 min
  On each button press the configured delay time is started.
  Starting with the first color position, the next position of the list is sent with each short button press, after the last color position has been sent, the list starts again from the beginning.
  After the delay time has expired, the list starts again at the first color position on the next short button press.

When the button lock is used, the color position is always reset when unlocking.

Condition on long button press
Condition on very long button press

Here it is possible to select how a long and very long button press should be handled:

- No reaction
- Reset position
  This function is used to override the behavior as set in the parameter **Reset color position**.
- Color off
  The color value 0/0/0 for black is sent.
- Send color value
  The selected color value is sent.
- Additional function

Additional function

The following functions can be triggered by a long or very long button press:

- Switch on
- Switch off
- Toggle
  On toggle, the last value received from the bus is evaluated if the write flag is activated on the object.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Switch	1.001	1 Bit	To KNX

- Dim brighter
- Dim darker

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Dimming relative	3.007	4 Bit	To KNX

- Drive up
- Drive down

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Up/Down	1.008	1 Bit	To KNX

© 2024 Weinzierl Engineering GmbH

- Step up / Stop
- Step down / Stop

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Step/Stop	1.007	1 Bit	To KNX

- Send value
  With this function, a byte value can be sent. A parameter for selecting the value is displayed.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Send value	5.001	1 Byte	To KNX

- Call scene
  With this function, a scene can be sent. A parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Call scene	18.001	1 Byte	To KNX

- Save scene
  With this function, a scene can be saved. A parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Save scene	18.001	1 Byte	To KNX

Very long button press after [s]

This parameter is visible only when using the very long actuation, it sets the time to detect a very long button press.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the inputs/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior on start *(only for button lock)*

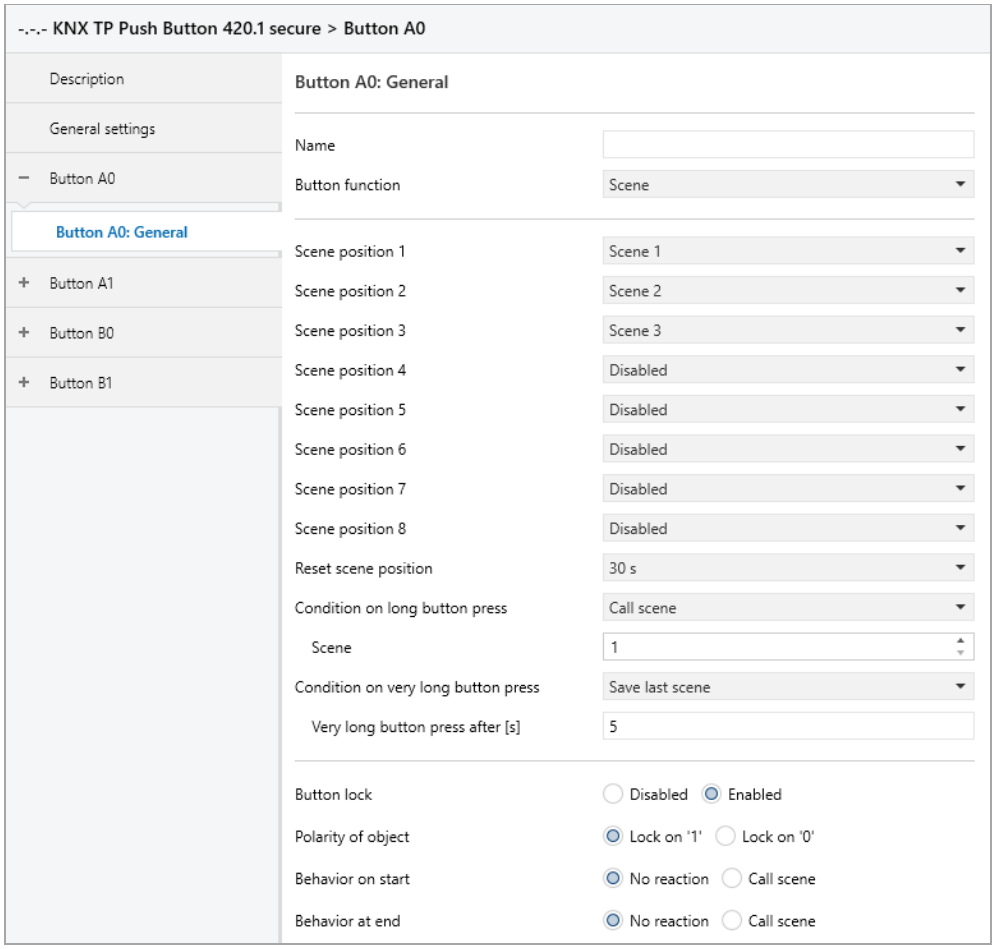
The telegram can be configured here, which is sent when the lock is activated.

Behavior on end *(only for button lock)*

The telegram can be configured here, which is sent when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.15 Button function “Scene”



On selection of scene function the following object is visible:

Group object	Type KNX	Size	Direction
GO 21 Button A0: Scene – Call/Save	18.001	1 Byte	To KNX

The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

Scene position 1 – 8

For each position, scene 1 – 64 can be activated.

If only one scene position is activated, it is sent on short button press. If several scene positions are used, the activated positions are switched through with each short button press.

The behavior for selecting and sending the scene positions can be determined by the following parameter.

© 2024 Weinzierl Engineering GmbH

Reset scene position

The following options are available:

- Never
  Starting with the first scene position, the next position of the list is sent with each short button press, after the last scene position has been sent, the list starts again from the beginning.

- After execution
  This selection enables the parameter **Time until execution**.
  Beginning with the first scene position, each short button press switches the position by one position within the execution delay, at the end of the execution delay, the current scene position is sent.

- 5 s – 10 min
  On each button press the configured delay time is started.
  Starting with the first scene position, the next position of the list is sent with each short button press, after the last scene position has been sent, the list starts again from the beginning.
  After the delay time has expired, the list starts again at the first scene position on the next short button press.

When the button lock is used, the scene position is always reset when unlocking.

Condition on long button press
Condition on very long button press

It is also possible to select how a long and very long button press should be handled:

- No reaction
- Reset position
  This function is used to override the behavior as set in the parameter **Reset scene position**.
- Call scene
  The scene configured in the appearing parameter is sent.
- Save last scene
  A telegram for “save scene” with the last sent scene is triggered.
- Additional function

© 2024 Weinzierl Engineering GmbH

Additional function

The following functions can be triggered by a long or very long button press:

- Switch on
- Switch off
- Toggle
  On toggle, the last value received from the bus is evaluated if the write flag is activated on the object.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Switch	1.001	1 Bit	To KNX

- Dim brighter
- Dim darker

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Dimming relative	3.007	4 Bit	To KNX

- Drive up
- Drive down

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Up/Down	1.008	1 Bit	To KNX

- Step up / Stop
- Step down /Stop

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Step/Stop	1.007	1 Bit	To KNX

- Send value
  With this function, a byte value can be sent. A parameter for selecting the value is displayed.

Group object	Type KNX	Size	Direction
GO 25 Button A0: Additional function – Send value	5.001	1 Byte	To KNX

Very long button press after [s]

This parameter is visible only when using the very long actuation, he sets the time to detect a very long button press.

Button lock

With this parameter the button lock can be enabled. If the lock has been activated via the group object, no telegrams are triggered by state changes of the input/button.

Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

© 2024 Weinzierl Engineering GmbH

Polarity of object *(only for button lock)*

This parameter defines, if the lock should be activated by receiving a 1 or by receiving a 0. The respective opposite telegram deactivates the lock again.

Behavior on start *(only for button lock)*

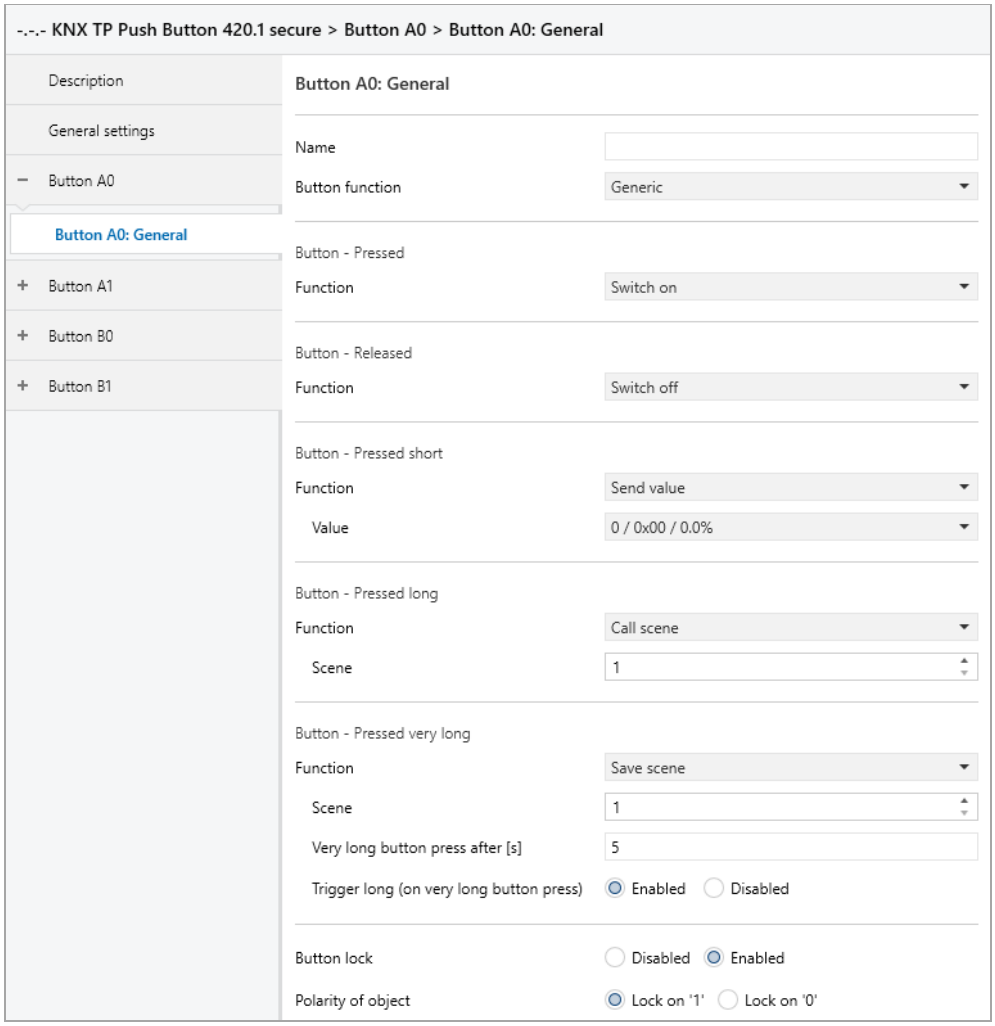
The telegram can be configured here, which is sent when the lock is activated.

Behavior at end *(only for button lock)*

The telegram can be configured here, which is sent when the lock is deactivated.

© 2024 Weinzierl Engineering GmbH

8.16 Button function “Generic”



With this button function, a separate object is available for each event at the input/pushbutton in order to set the function of the input/pushbutton individually.

These events at the input/button and their associated objects are:

- Button – Pressed

Group object	Type KNX	Size	Direction
GO 21 Button A0: Pressed – …	Depending on function		To KNX

- Button – Released

Group object	Type KNX	Size	Direction
GO 22 Button A0: Released – …	Depending on function		To KNX

- Button – Pressed short

Group object	Type KNX	Size	Direction
GO 23 Button A0: Pressed short – …	Depending on function		To KNX

© 2024 Weinzierl Engineering GmbH

- Button – Pressed long

Group object	Type KNX	Size	Direction
GO 24 Button A0: Pressed long – …	Depending on function		To KNX

- Button – Pressed very long

Group object	Type KNX	Size	Direction
GO 25 Button A0: Pressed very long – …	Depending on function		To KNX

Each event can be assigned the following functions:

- Switch on
- Switch off
- Toggle
  On toggle the last value received from the bus is evaluated if the write flag is activated on the object.

Group object	Type KNX	Size	Direction
GO … Button A0: … – Switch	1.001	1 Bit	To KNX

- Dim brighter (no Stop)
- Dim darker (no Stop)
- Dim Stop

Group object	Type KNX	Size	Direction
GO … Button A0: … – Dimming relative	3.007	4 Bit	To KNX

- Drive up
- Drive down

Group object	Type KNX	Size	Direction
GO … Button A0: … – Up/Down	1.008	1 Bit	To KNX

- Step up / Stop
- Step down / Stop

Group object	Type KNX	Size	Direction
GO … Button A0: … – Step/Stop	1.007	1 Bit	To KNX

- Send value
  With this function, a byte value can be sent. A parameter for selecting the value is displayed.

Group object	Type KNX	Size	Direction
GO … Button A0: … – Send value	5.001	1 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

- Call Scene
  With this function a scene can be sent, a parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO … Taster A0: … – Call scene	18.001	1 Byte	To KNX

- Save Scene
  With this function a scene can be saved, a parameter for selecting the scene is displayed.

Group object	Type KNX	Size	Direction
GO … Taster A0: … – Save scene	18.001	1 Byte	To KNX

The time for detection of a long button press can be set in the general parameters and is valid for all inputs/buttons.

Very long button press after [s]

This parameter is visible only when using the very long actuation, he sets the time to detect a very long button press.

Long triggering (with very long keystroke)

This parameter is only visible when the long and very long actuation is used simultaneously.

If this parameter is activated, both events are always triggered after a very long actuation; if it is deactivated, the duration of the activation is evaluated: if it lies between the time of long and very long actuation, only the function for long actuation is triggered. If the time for very long actuation is exceeded, only the function for very long actuation is triggered.

Button lock

With this parameter the key lock can be activated. If the lock was activated via the group object, no telegrams are triggered when the status of the input/button changes.

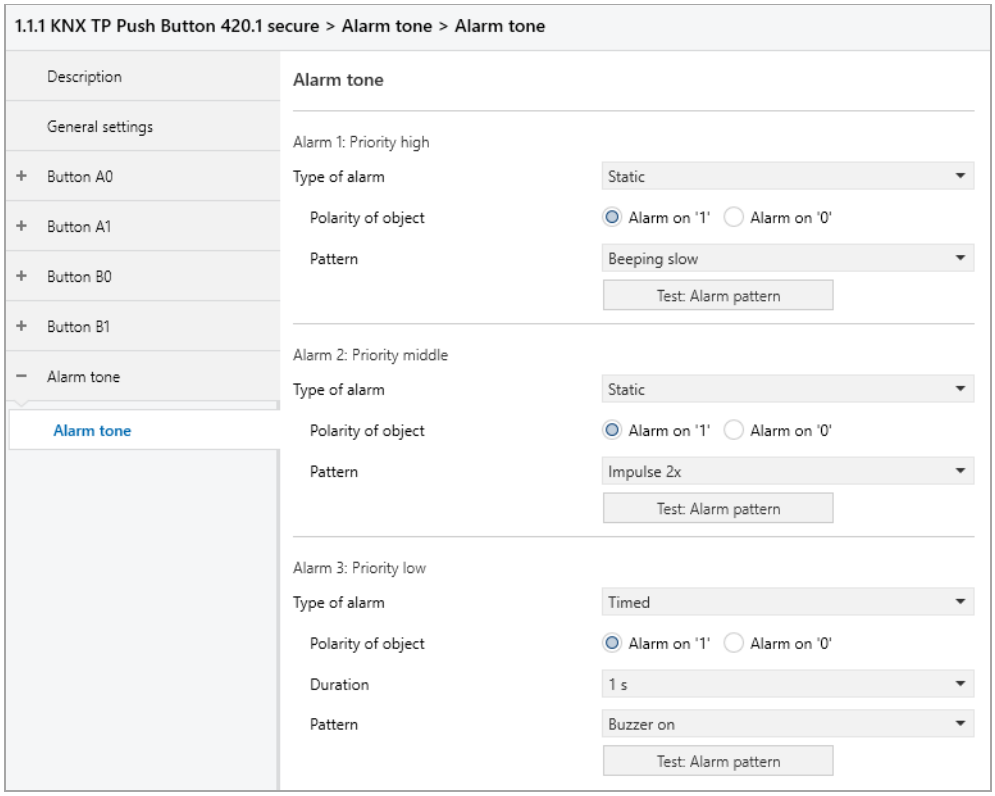
Group object	Type KNX	Size	Direction
GO 26 Button A0: Lock – Activate	1.001	1 Bit	From KNX

Polarity of object *(only for button lock)*

This parameter can be used to determine how the lock is to be activated, either by receiving a 1 or a 0. The corresponding telegram switches the lock off again.

© 2024 Weinzierl Engineering GmbH

8.17 Alarm tone



Up to 3 alarms can be configured. Each alarm has its object and priority. If several alarms are active at the same time, the one with the higher priority is audible.

Group object	Type KNX	Size	Direction
GO 61 Alarm 1: Priority high – Switch	1.001	1 Bit	From KNX
GO 62 Alarm 2: Priority middle – Switch	1.001	1 Bit	From KNX
GO 63 Alarm 3: Priority low – Switch	1.001	1 Bit	From KNX

Type of alarm

The type of alarm can be set here.
The following options are available:

- Disabled
- Static
  The alarm can be activated or deactivated via the object.
- Timed
  The alarm can be triggered via the object. It is active for the set **duration**.
  If the alarm is active, the timer can be restarted or ended before the time is up.

Polarity of object

This parameter can be used to set how the alarm is to be activated, either by receiving a 1 or a 0. The opposite telegram deactivates the alarm again.

© 2024 Weinzierl Engineering GmbH

Duration *(only for Timed)*

The duration of the timed alarm can be set here.
The following options are available:

- 1 s
- 2 s
- 5 s
- 10 s

Pattern

The alarm pattern for this alarm can be set here.
The following options are available:

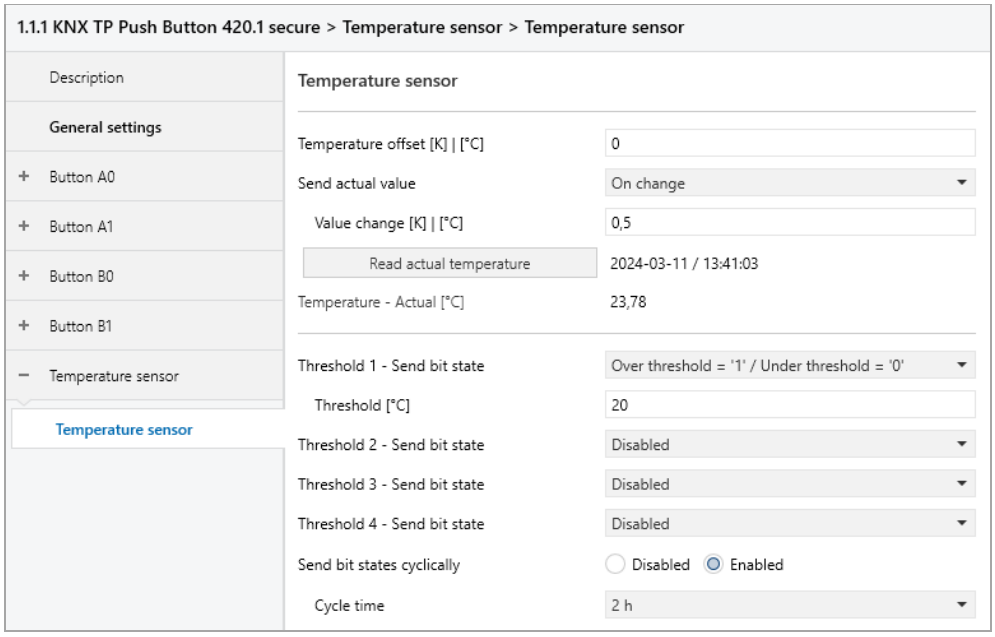
- Buzzer on
- Impulse 1x
- Impulse 2x
- Impulse 2x (increasing)
- Impulse 2x (decreasing)
- Impulse 3x
- Impulse 3x (increasing)
- Impulse 3x (decreasing)
- Beeping slow
- Beeping fast
- Alternating slow
- Alternating fast

Test: Alarm pattern

This button is used to test the parameterized **pattern** without having to perform an ETS download (application program). Only the individual address must be programmed. The **pattern** is audible for 30 seconds. It can be switched off by clicking the test button again.

© 2024 Weinzierl Engineering GmbH

8.18 Temperature sensor



Temperature offset [K] | [°C]

Here the measured temperature value can be adjusted by -5 … +5 K.

Send actual value

This parameter is used to define whether and how the actual temperature value is to be sent. The following options are available:

- Disabled
  The actual temperature value is not sent.

- Read only
  No independent sending of the temperature to the bus by the device. To read the temperature, the read flag of the group object must be set.

- On change
  An additional parameter **Value change [K] | [°C]** is displayed. This can be used to determine the delta from which the temperature is sent again in relation to the last value sent.

- Cyclic
  An additional parameter **Cycle time** is displayed. This can be used to determine the time after which the temperature is sent again.

- On change and cyclic
  Both send conditions are active.

© 2024 Weinzierl Engineering GmbH

The actual temperature value is sent via the following object:

Group object	Type KNX	Size	Direction
GO 71 Temperature sensor – Temperature – Actual	9.001	2 Byte	To KNX

Read actual temperature

This button can be used to read the actual temperature [°C]. The parameterized **Temperature offset [K] | [°C]** is included in the calculation.

Threshold 1…4 – Send bit state

Here it is possible to set which state is to be sent when the threshold value is overstepped or understepped. A hysteresis of 1 K is fixed.

The following options are available:

- Disabled
- Over threshold = ‘1‘ / Under threshold = ‘0‘
- Over threshold = ‘0‘ / Under threshold = ‘1‘

The bit state (…) is sent via the correspondig object:

Group object	Type KNX	Size	Direction
GO 72 Temperature sensor – Threshold 1 – Bit state	1.001	1 Bit	To KNX
GO 73 Temperature sensor – Threshold 2 – Bit state	1.001	1 Bit	To KNX
GO 74 Temperature sensor – Threshold 3 – Bit state	1.001	1 Bit	To KNX
GO 75 Temperature sensor – Threshold 4 – Bit state	1.001	1 Bit	To KNX

Threshold [°C] *(only for bit state)*

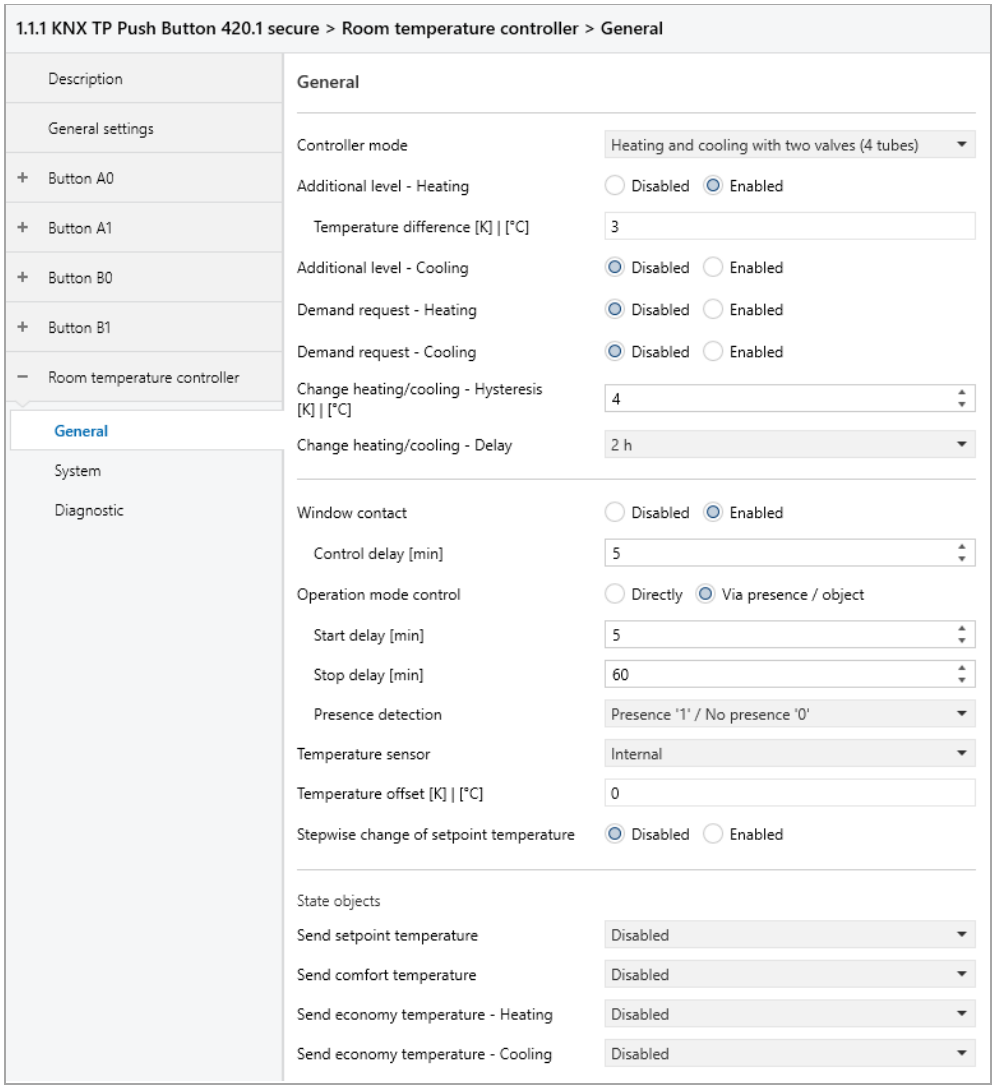
Here the threshold value for the **bit state** can be set.

Send bit states cyclically

Sends the **bit state** cyclically to the KNX bus.
The **cycle time** can be selected between 15 min and 24 h.

© 2024 Weinzierl Engineering GmbH

8.19 Room temperature controller – General



The following group objects are displayed for all controller types:

Group object	Type KNX	Size	Direction
GO 81 Room temperature controller – On/Off – Switching	1.001	1 Bit	From KNX
GO 82 Room temperature controller – On/Off – State	1.001	1 Bit	To KNX

© 2024 Weinzierl Engineering GmbH

Controller mode

The basic controller mode is set here.
The following options are available:

- Heating
  1 System for heating.

Group object	Type KNX	Size	Direction
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature – Economy	9.001	2 Byte	From KNX
GO 108 Room temperature controller – Valve	5.001	1 Byte	To KNX

- Cooling
  1 System for cooling.

Group object	Type KNX	Size	Direction
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature – Economy	9.001	2 Byte	From KNX
GO 108 Room temperature controller – Valve	5.001	1 Byte	To KNX

- Heating and cooling with one valve (2 tubes)
  1 System where it is possible to switch manually between heating and cooling.

Group object	Type KNX	Size	Direction
GO 83 Room temperature controller – Heating/Cooling – Switch	1.100	1 Bit	From KNX
GO 86 Room temperature controller – Heating/Cooling – State	1.100	1 Bit	To KNX
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature – Economy – Heating	9.001	2 Byte	From KNX
GO 100 Room temperature controller – Temperature – Economy – Cooling	9.001	2 Byte	From KNX
GO 108 Room temperature controller – Valve	5.001	1 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

- Heating and cooling with two valves (4 tubes)
  1 System that automatically switches between heating and cooling.
  Heating and cooling can be activated or deactivated individually.

Group object	Type KNX	Size	Direction
GO 84 Room temperature controller – Heating enable – Switch	1.001	1 Bit	From KNX
GO 85 Room temperature controller – Cooling enable – Switch	1.001	1 Bit	From KNX
GO 86 Room temperature controller – Heating/Cooling – State	1.100	1 Bit	To KNX
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature – Economy – Heating	9.001	2 Byte	From KNX
GO 100 Room temperature controller – Temperature – Economy – Cooling	9.001	2 Byte	From KNX
GO 108 Room temperature controller – Valve – Heating	5.001	1 Byte	To KNX
GO 109 Room temperature controller – Valve – Cooling	5.001	1 Byte	To KNX

- Heating and cooling with two systems
  2 systems with automatic switching between heating system and cooling system.
  Heating and cooling can be activated or deactivated individually.

Group object	Type KNX	Size	Direction
GO 84 Room temperature controller – Heating enable – Switch	1.001	1 Bit	From KNX
GO 85 Room temperature controller – Cooling enable – Switch	1.001	1 Bit	From KNX
GO 86 Room temperature controller – Heating/Cooling – State	1.100	1 Bit	To KNX
GO 96 Room temperature controller – Temperature – Setpoint	9.001	2 Byte	From KNX
GO 98 Room temperature controller – Temperature – Comfort	9.001	2 Byte	From KNX
GO 99 Room temperature controller – Temperature – Economy – Heating	9.001	2 Byte	From KNX
GO 100 Room temperature controller – Temperature – Economy – Cooling	9.001	2 Byte	From KNX
GO 108 Room temperature controller – Valve – Heating	5.001	1 Byte	To KNX
GO 109 Room temperature controller – Valve – Cooling	5.001	1 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

Additional level – Heating/Cooling

An additional level can be activated for heating and cooling. If the difference between the setpoint temperature and the current temperature is greater than the set temperature difference [K] | [°C], a 1 is sent on the object for the additional stage, otherwise a 0.

Group object	Type KNX	Size	Direction
GO 87 Room temperature controller – Additional level – Heating	1.001	1 Bit	To KNX
GO 88 Room temperature controller – Additional level – Cooling	1.001	1 Bit	To KNX

Temperature difference [K] [°C] *(only for additional level)*

The difference between the setpoint temperature and the actual temperature at which the additional level is to be triggered can be set here.

Demand request – Heating/Cooling

A demand request can be activated for heating and cooling. If the valve position for heating or cooling is not equal to 0 %, a 1 is sent on the corresponding object for the demand request, otherwise a 0.

Group object	Type KNX	Size	Direction
GO 89 Room temperature controller – Demand request – Heating	1.001	1 Bit	To KNX
GO 90 Room temperature controller – Demand request – Cooling	1.001	1 Bit	To KNX

Change heating/cooling – Hysteresis [K] | [°C]

(only for heating and cooling with two valves/systems)

The hysteresis for the change between heating and cooling can be set here.

Change heating/cooling – Delay

(only for heating and cooling with two valves/systems)

Here the delay for the change between heating and cooling can be set.

Example for Change heating/cooling with two valves/systems with Operation mode – Comfort

Change heating/cooling – Hysteresis [K] | [°C] = 4
Change heating/cooling – Delay = 2 h

If the actual temperature exceeds the setpoint temperature by 4 °C for 2 hours, the system switches from heating to cooling. The change from cooling to heating takes place in the opposite direction. If the current temperature falls below the setpoint temperature by 4 °C for 2 hours, the change from cooling to heating takes place.

© 2024 Weinzierl Engineering GmbH

Example for Change heating/cooling with two valves/systems with Operation mode – Economy

Change heating/cooling – Delay = 2 hr

If the current temperature exceeds the setpoint temperature by a delta* for 2 hours, the system switches from heating to cooling. The chagne from cooling to heating takes place in the opposite direction. If the current temperature falls below the setpoint temperature by a delta* for 2 hours, the change from cooling to heating takes place.

*In operation mode “Economy”, the delta 75 % corresponds to the difference between **Setpoint temperature – Heating [°C]** and **Setpoint temperature – Cooling [°C]**.

Window contact

Here the functionality for a window contact can be activated. If a 1 is received on the window object for the duration of the **Control delay [min]**, the room temperature controller is switched off.

Group object	Type KNX	Size	Direction
GO 91 Room temperature controller – Window	1.019	1 Bit	From KNX

Control delay [min] *(only for window contact)*

The control delay for the regulation when the window is open can be set here.

Operation mode control

The type of operation mode control can be defined here.
The following options can be selected:

- Direct
  It is possible to switch directly between the operation modes.

Group object	Type KNX	Size	Direction
GO 92 Room temperature controller – Comfort – Trigger	1.017	1 Bit	From KNX
GO 93 Room temperature controller – Economy – Trigger	1.017	1 Bit	From KNX
GO 94 Room temperature controller – Comfort – State	1.001	1 Bit	To KNX

- Via presence
  The change between the operation modes is controlled via a presence object.

Group object	Type KNX	Size	Direction
GO 92 Room temperature controller – Presence	1.001	1 Bit	From KNX
GO 94 Room temperature controller – Comfort – State	1.001	1 Bit	To KNX

Start delay [min] *(only for presence)*

Here you set how long a presence must be detected, to activate Operation mode – Comfort.

Stop delay [min] *(only for presence)*

Here you set how long no presence must be detected, to activate Operation mode – Economy.

© 2024 Weinzierl Engineering GmbH

Presence detection *(only for presence)*

Here you can set how the presence is detected.
The following options are available:

- Presence '1' / No presence '0'
  If presence is detected, a 1 is sent, otherwise a 0.
- Presence '0' / No presence '1'
  If there is a presence, a 0 is sent, otherwise a 1.
- Presence on '1' cyclically
  If presence is cyclic, a 1 is sent, otherwise nothing.
- Presence on '0' cyclically
  At presence a cyclic 0 is sent, otherwise nothing.

Cycle time [sec] *(only for presence with cyclic detection)*

The time window for cyclic detection can be set here. If no presence information is received within this time window, no presence is detected.

Example for operation mode control – Via presence / Object

Start delay [min] = 5
Stop delay [min] = 60
Presence detection = Presence '1' / No presence '0

If a 1 is received at the presence object for at least 5 min, Operation mode – Comfort is activated.

If a 0 is received at the presence object for at least 60 min, Operation mode – Economy is activated.

If the start delay and stop delay are both set to 0 for this presence detection, switching between the operation modes can be performed directly via the presence object.

Temperature sensor

The type of temperature sensor used can be set here.
The following options can be selected:

- Internal
  The internal temperature sensor is used.

- External (object)
  The temperature value received via the object is used.

- Internal and external (object) – Average value
  The average value of the internal temperature (temperature sensor) and the external temperature (object) is used. If no temperature is received via the object, only the internal temperature is used.

© 2024 Weinzierl Engineering GmbH

The following object is displayed for the external sensor:

Group object	Type KNX	Size	Direction
GO 95 Room temperature controller – External temperature sensor	9.001	2 Byte	From KNX

Temperature offset [K] | [°C]

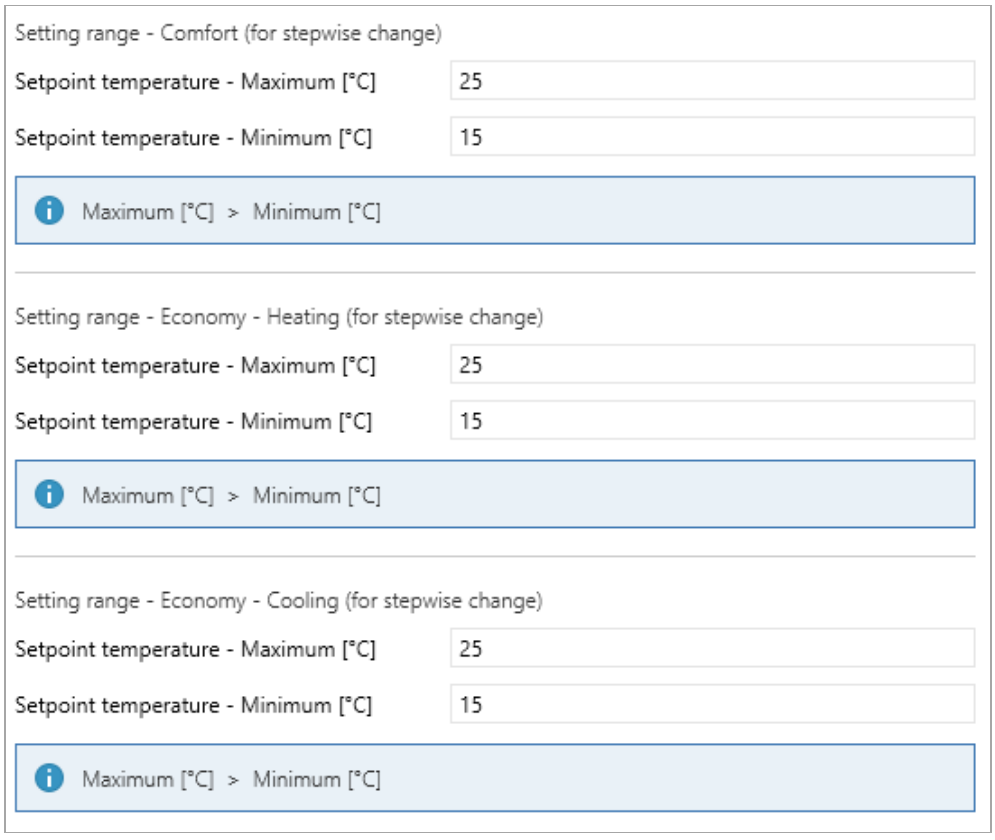
Here the measured temperature value can be adjusted by -5 … +5 K.
This adjustment refers to the internal and the external temperature value.

Stepwise change of the setpoint temperature

The following object is displayed for the stepwise change of the setpoint temperature:

Group object	Type KNX	Size	Direction
GO 97 Room temperature controller – Temperature – Setpoint – Increase/decrease	1.007	1 Bit	From KNX

In addition, further parameters appear with which the setting range of the stepwise change can be restricted.



© 2024 Weinzierl Engineering GmbH

Send setpoint temperature

This parameter is used to define whether and how the setpoint temperature is to be sent.
The following options are available:

- Disabled
  The setpoint temperature is not sent.

- Read only
  No independent sending of the temperature to the bus by the device.
  To read the temperature, the Read flag of the group object must be set.

- On change
  An additional parameter **Value change [K] | [°C]** is displayed. This can be used to determine the delta from which the temperature is sent again in relation to the last value sent.

- Cyclic
  An additional parameter **Cycle time** is displayed. This can be used to determine the time after which the temperature is sent again.

- On change and cyclic
  Both send conditions are active.

The setpoint temperature is sent via the following object:

Group object	Type KNX	Size	Direction
GO 101 Room temperature controller – Temperature – Setpoint – State	9.001	2 Byte	To KNX

Send comfort temperature

This parameter is used to define whether and how the temperature for Operation mode – Comfort is to be sent. The following options are available:

- Disabled
  The temperature is not sent.

- Read only
  No independent sending of the temperature to the bus by the device. To read the temperature, the Read flag of the group object must be set.

- On change
  An additional parameter Value change [K] | [°C] is displayed. This can be used to determine the delta from which the temperature is sent again in relation to the last value sent.

- Cyclic
  An additional parameter Cycle time is displayed. This can be used to determine the time after which the temperature is sent again.

© 2024 Weinzierl Engineering GmbH

- On change and cyclic
  Both transmission conditions are active.

The temperature for Operation mode – Comfort is sent via the following object:

Group object	Type KNX	Size	Direction
GO 102 Room temperature controller – Temperature – Comfort – State	9.001	2 Byte	To KNX

Send economy temperature – Heating/Cooling

These parameters are used to define whether and how the temperature for Operation mode - Economy for heating/cooling is to be sent. The following options are available:

- Disabled
  The temperature is not sent.

- Read only
  No independent sending of the temperature to the bus by the device. To read the temperature, the Read flag of the group object must be set.

- On change
  An additional parameter Value change [K] | [°C] is displayed. This can be used to determine the delta from which the temperature is sent again in relation to the last value sent.

- Cyclic
  An additional parameter Cycle time is displayed. This can be used to determine the time after which the temperature is sent again.

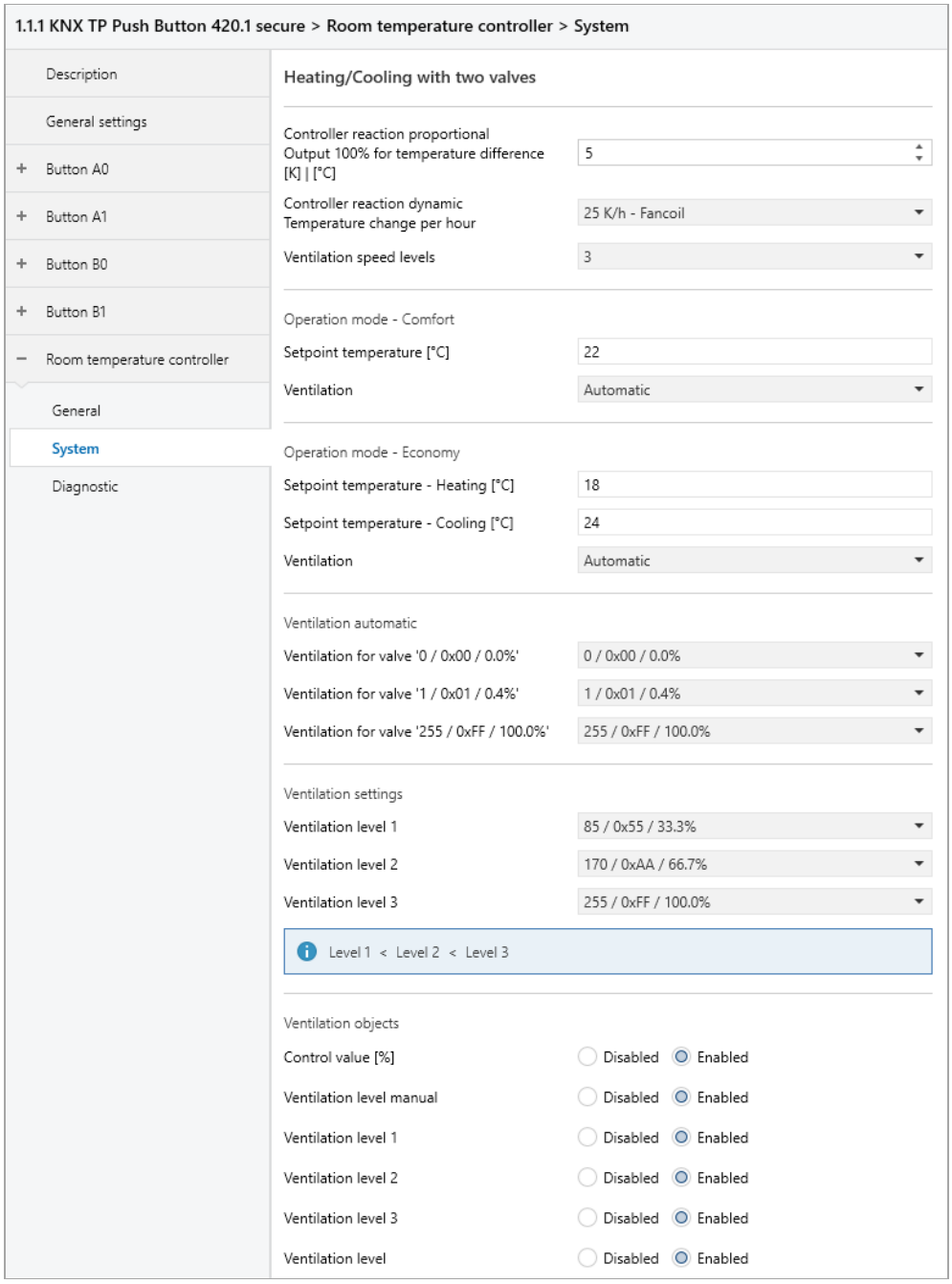
- On change and cyclic
  Both transmission conditions are active.

The temperatures for Operation mode - Economy are sent via the following objects:

Group object	Type KNX	Size	Direction
GO 103 Room temperature controller – Temperature – Economy – State – Heating	9.001	2 Byte	To KNX
GO 104 Room temperature controller – Temperature – Economy – State – Cooling	9.001	2 Byte	To KNX

© 2024 Weinzierl Engineering GmbH

8.20 Room temperature controller – System



Controller reaction proportional
Output 100% at temperature difference
[K] [°C]

The P part (proportional) of the control can be set here. This is the temperature difference at which the valve is opened by 100%.

Example

Controller reaction proportional Output 100% at temperature difference [K] | [°C] = 5

At a temperature difference of 2 K, the valve is opened by 40 %.

© 2024 Weinzierl Engineering GmbH

Controller reaction dynamic
Temperature change per hour

Here the I part (integral) of the control can be set.
The following options are available:

- Deactivated
  The I component is deactivated (P controller).
- 1 K/h … 30 K/h
  The higher this value, the faster the I component reacts.

Example *(underfloor heating)*

At a temperature difference of 2 K for approx. 1 h, the valve should open by 50%.
*2K * 1h * **parameter** * K = 50%.*
*2K * 1h * **3K/h** * 8,3 = 50%.*

If the value 3 K/h is set for **Controller reaction dynamic**, the valve is opened by 50 % in the I component at a temperature difference of 2 K after approx. 1 h.

Example *(fan coil)*

At a temperature difference of 2 K for approx. 0.12 h (7 min) the valve should open by 50 %.
*2K * 0.12h * **parameter** * K = 50%.*
*2K * 0.12h * **25K/h** * 8,3 = 50%.*

If the value 25 K/h is set at **Controller reaction dynamic**, the valve is opened by 50 % in the I component at a temperature difference of 2 K after approx. 7 min.

Ventilation speed levels

Here the number of fan levels can be set or the ventilation can be deactivated.
Up to 5 fan speeds can be set.

Setpoint temperature [°C] *(Operation mode – Comfort)*

The setpoint temperature for Operation mode – Comfort can be defined here.

This is the setpoint temperature which is set when changing to the Operation mode – Comfort.

© 2024 Weinzierl Engineering GmbH

Ventilation *(Operation mode – Comfort)*

Here the ventilation for Operation mode – Comfort can be defined.
The following are available for selection:

- Automatic
- Level 1
- Level 2
- Level 3
- Level 4
- Level 5

This is the vantilation level, or automatic ventilation, which is set when changing to the Operation mode – Comfort.

Setpoint temperature – Heating [°C] *(Operation mode – Economy)*

The setpoint temperature for heating can be defined here for Operation mode – Economy.

This is the setpoint temperature for heating, which is set when switching to the Operation mode – Economy.

Setpoint temperature – Cooling [°C] *(Operation mode – Economy)*

Here the setpoint temperature for cooling can be defined for Operation mode – Economy.

This is the setpoint temperature for cooling, which is set when changing to the Operation mode – Economy.

Ventilation *(Operation mode – Economy)*

Here the ventilation for Operation mode – Economy can be defined.
The following can be selected:

- Automatic
- Level 1
- Level 2
- Level 3
- Level 4
- Level 5

This is the ventilation level, or automatic ventilation, which is set when changing to the Operation mode – Economy.

Automatic ventilation

If the ventilation is set to automatic, the ventilation value is determined according to the valve position. The following parameters with the note *Automatic ventilation* are used for configuration.

Ventilation for valve '0 / 0x00 / 0.0%' *(Ventilation automatic)*

The ventilation value for valve position 0.0 % can be set here.

© 2024 Weinzierl Engineering GmbH

Ventilation for valve '1 / 0x01 / 0.4%' *(Ventilation automatic)*

The ventilation value for valve position 0.4% can be set here.

Ventilation at valve '255 / 0xFF / 100.0%' *(Ventilation automatic)*

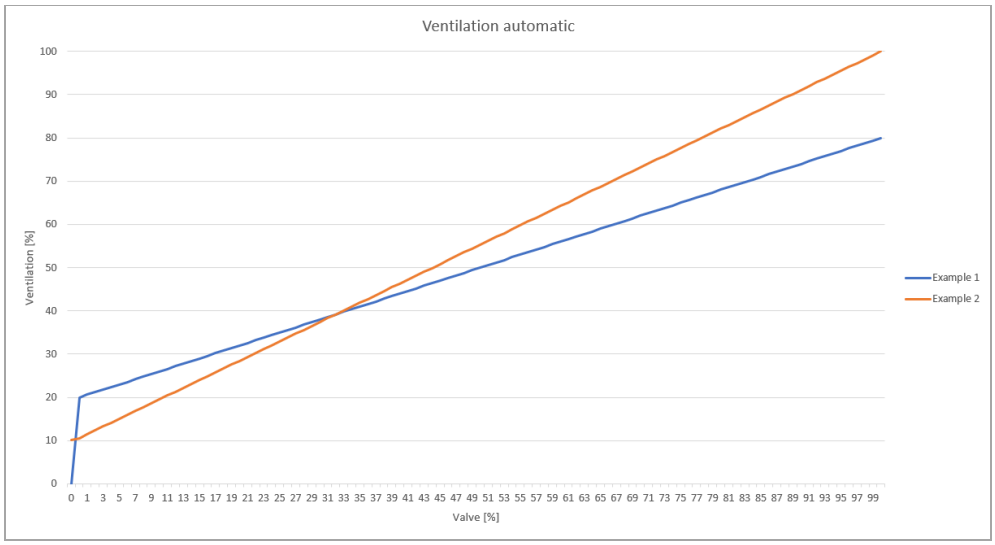
The ventilation value for valve position 100.0 % can be set here.

Example 1 *(Automatic ventilation)*

Ventilation for valve '0 / 0x00 / 0.0%' = 0 / 0x00 / 0.0%
Ventilation for valve '1 / 0x01 / 0.4%' = 51 / 0x33 / 20.0%
Ventilation for valve '255 / 0xFF / 100.0%' = 204 / 0xCC / 80.0%

Example 2 *(Automatic ventilation)*

Ventilation for valve '0 / 0x00 / 0.0%' = 26 / 0x1A / 10.2%
Ventilation for valve '1 / 0x01 / 0.4%' = 27 / 0x1B / 10.6%
Ventilation for valve '255 / 0xFF / 100.0%' = 255 / 0xFF / 100.0%



Fan level 1 … 5 *(Ventilation settings)*

Control values [%] for the individual ventilation levels can be defined here.

Example *(Ventilation settings for ventilation control with control value [%])*

The following settings are recommended here:

Ventilation speed steps = 1
Ventilation level 1 = 255 / 0xFF / 100.0%

Ventilation speed levels = 2
Ventilation level 1 = 128 / 0x80 / 50.2%
Ventilation level 2 = 255 / 0xFF / 100.0%

Ventilation speed levels = 3
Ventilation level 1 = 85 / 0x55 / 33.3%
Ventilation level 2 = 170 / 0xAA / 66.7%
Ventilation level 3 = 255 / 0xFF / 100.0%

© 2024 Weinzierl Engineering GmbH

Ventilation speed levels = 4
Ventilation level 1 = 64 / 0x40 / 25.1%
Ventilation level 2 = 128 / 0x80 / 50.2
Ventilation level 3 = 192 / 0xC0 / 75.3%
Ventilation level 4 = 255 / 0xFF / 100.0%

Ventilation speed levels = 5
Ventilation level 1 = 51 / 0x33 / 20.0%
Ventilation level 2 = 102 / 0x66 / 40.0%
Ventilation level 3 = 153 / 0x99 / 60.0%
Ventilation level 4 = 204 / 0xCC / 80.0%
Ventilation level 5 = 255 / 0xFF / 100.0%

Example *(Ventilation settings for ventilation control with ventilation levels)*

The following settings are recommended here:

Ventilation speed levels = 1
Ventilation level 1 = 1 / 0x01 / 0.4%

Ventilation speed levels = 2
Ventilation level 1 = 1 / 0x01 / 0.4%
Ventilation level 2 = 129 / 0x81 / 50.6%

Ventilation speed levels = 3
Ventilation level 1 = 1 / 0x01 / 0.4%
Ventilation level 2 = 86 / 0x56 / 33.7%
Ventilation level 3 = 170 / 0xAA / 67.1%

Ventilation speed levels = 4
Ventilation level 1 = 1 / 0x01 / 0.4%
Ventilation level 2 = 65 / 0x41 / 25.5%
Ventilation level 3 = 129 / 0x81 / 50.6%
Ventilation level 4 = 193 / 0xC1 / 75.7%

Ventilation speed levels = 5
Ventilation level 1 = 1 / 0x01 / 0.4%
Ventilation level 2 = 52 / 0x34 / 20.4%
Ventilation level 3 = 103 / 0x67 / 40.4%
Ventilation level 4 = 154 / 0x9A / 60.4%
Ventilation level 5 = 205 / 0xCD / 80.4%

© 2024 Weinzierl Engineering GmbH

Control value [%] *(Ventilation objects)*

If this parameter is activated, the following object is displayed:

Group object	Type KNX	Size	Direction
GO 110 Room temperature controller – Ventilation	5.001	1 Byte	To KNX

If a ventilation level is set manually, the corresponding value for this ventilation speed is sent
→ see **Ventilation level 1 … 5** *(Ventilation settings)*.

If the automatic ventilation is active, the corresponding value for the automatic ventilation is sent
→ see **Ventilation automatic**.

Ventilation level manual *(Ventilation objects)*

If this parameter is activated, the following object is displayed:

Group object	Type KNX	Size	Direction
GO 111 Room temperature controller – Ventilation level manual	1.003	1 Bit	To KNX

If the ventilation level is set manual i.e. static (automatic ventilation deactivated), a 1 is sent on this object, otherwise a 0.

© 2024 Weinzierl Engineering GmbH

Ventilation level 1 … 5 *(Ventilation objects)*

If these parameters are activated, the following objects are displayed:

Group object	Type KNX	Size	Direction
GO 112 Room temperature controller – Ventilation level 1	1.001	1 Bit	To KNX
GO 113 Room temperature controller – Ventilation level 2	1.001	1 Bit	To KNX
GO 114 Room temperature controller – Ventilation level 3	1.001	1 Bit	To KNX
GO 115 Room temperature controller – Ventilation level 4	1.001	1 Bit	To KNX
GO 116 Room temperature controller – Ventilation level 5	1.001	1 Bit	To KNX

If a ventilation level is set manually, a 1 is sent on the corresponding object, otherwise a 0.

If the automatic ventilation is active, the ventilation level is determined from the control value [%] for ventilation according to the configuration, see **Ventilation level 1 … 5** *(Ventilation settings)*.

According to the **Example** *(Ventilation settings for ventilation control with ventilation levels)* the following value ranges result:

Ventilation speed levels = 1
Ventilation level 1 = 0.4% … 100.0%

Ventilation speed levels = 2
Ventilation level 1 = 0.4% … 50.2%
Ventilation level 2 = 50.6% … 100.0%

Ventilation speed levels = 3
Ventilation level 1 = 0.4% … 33.3%
Ventilation level 2 = 33.7% … 66.7%
Ventilation level 3 = 67.1% … 100.0%

Ventilation speed levels = 4
Ventilation level 1 = 0.4% … 25.1%
Ventilation level 2 = 25.5% … 50.2%
Ventilation level 3 = 50.6% … 75.3%
Ventilation level 4 = 75.7% … 100.0%

Ventilation speed levels = 5
Ventilation level 1 = 0.4% … 20.0%
Ventilation level 2 = 20.4% … 40.0%
Ventilation level 3 = 40.4% … 60.0%
Ventilation level 4 = 60.4% … 80.0%
Ventilation level 5 = 80.4% … 100.0%

© 2024 Weinzierl Engineering GmbH

Ventilation level *(Ventilation objects)*

If this parameter is activated, the following object is displayed:

Group object	Type KNX	Size	Direction
GO 117 Room temperature controller – Ventilation level 1	5.100	1 Byte	To KNX

If a ventilation level is set manually, the number of this ventilation level is sent on the object.

If ventilation automatic is active, the ventilation level is determined from the control value [%] for ventilation according to the configuration, see **Ventilation level 1 … 5** *(Ventilation settings)*. If the control value is 0 %, a 0 is output on the object.

According to the **Example** *(Ventilation settings for ventilation control with ventilation levels)* the following value ranges result:

Ventilation speed levels = 1
Ventilation level 1 = 0.4% … 100.0%

Ventilation speed levels = 2
Ventilation level 1 = 0.4% … 50.2%
Ventilation level 2 = 50.6% … 100.0%

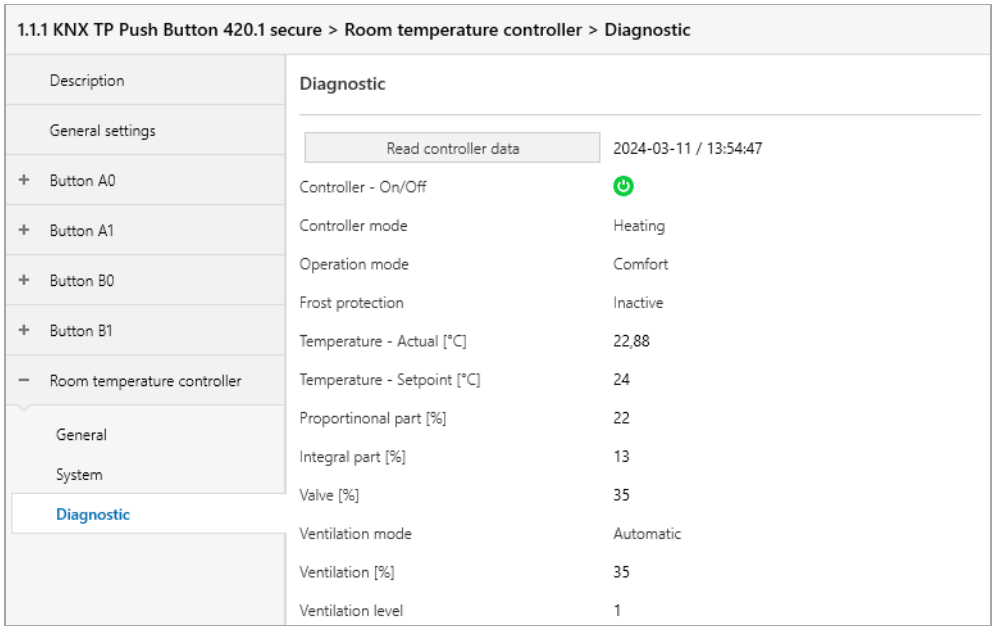
Ventilation speed levels = 3
Ventilation level 1 = 0.4% … 33.3%
Ventilation level 2 = 33.7% … 66.7%
Ventilation level 3 = 67.1% … 100.0%

Ventilation speed levels = 4
Ventilation level 1 = 0.4% … 25.1%
Ventilation level 2 = 25.5% … 50.2%
Ventilation level 3 = 50.6% … 75.3%
Ventilation level 4 = 75.7% … 100.0%

Ventilation speed levels = 5
Ventilation level 1 = 0.4% … 20.0%
Ventilation level 2 = 20.4% … 40.0%
Ventilation level 3 = 40.4% … 60.0%
Ventilation level 4 = 60.4% … 80.0%
Ventilation level 5 = 80.4% … 100.0%

© 2024 Weinzierl Engineering GmbH

8.21 Room temperature controller – Diagnostic



Read controller data

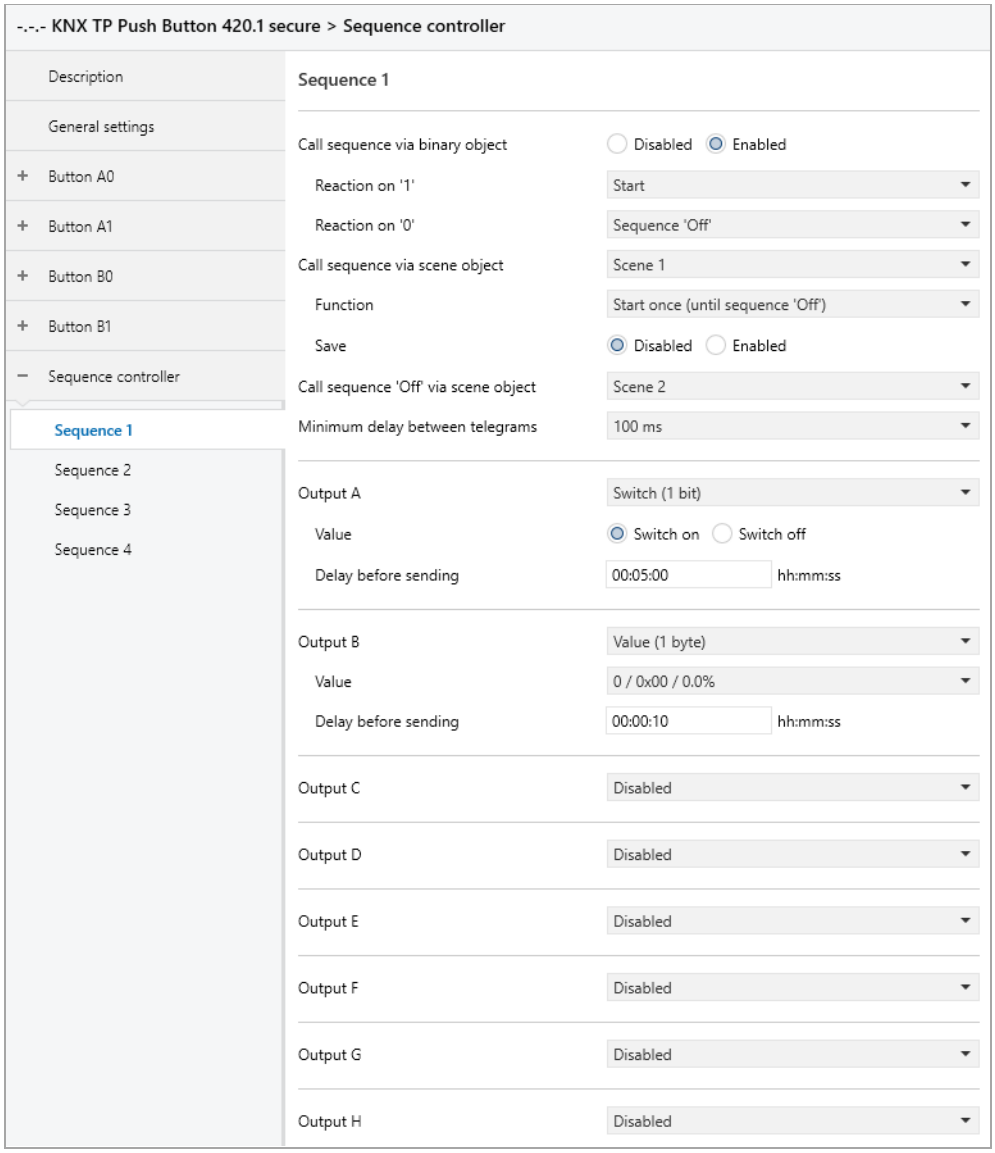
This button can be used to read the actual room temperature controller data.

The following controller data is read:

- Controller – On/Off
- Controller mode – Heating/Cooling
- Operation mode – Comfort/Economy
- Frost protection – Active/Inactive
  Active means that the frost protection is currently taking effect → Valve 25 %
- Temperature – Actual [°C]
- Temperature – Setpoint [°C]
- Proportional part [%] of the valve control value
- Integral part [%] of the valve control value
- Valve [%]
- Ventilation mode – Manual/Automatic
- Ventilation [%]
- Ventilation level

© 2024 Weinzierl Engineering GmbH

8.22 Sequence controller



With the sequence controller, one or more switching or value telegrams can be triggered by an input telegram to a switching or scene object. In this way several devices can be controlled simultaneously in different ways via a presence detector, for example.

The output telegrams can be sent simultaneously or with an individually adjustable time delay.

There are 4 sequence controllers available in the device, each controller can send up to 8 different output telegrams. Sequence 1 is described below, the function of sequences 2 – 4 is identical.

© 2024 Weinzierl Engineering GmbH

Sequence call via binary object

This parameter activates the following binary object to control the sequence:

Group object	Type KNX	Size	Direction
GO 131 Sequence controller: Sequence 1 – Binary	1.001	1 Bit	From KNX

Reaction on '1' *(only for binary object)*
Reaction on '0' *(only for binary object)*

If sequence call via binary object is activated, these parameters can be used to define how the sequence controller reacts to the corresponding binary telegram.

The following options are available:

- Disabled
  No reaction to the corresponding telegram.

- Start
  When the corresponding value is received, the sequence is started with output A. Restarting via this value is only possible again after the sequence has run through.

- Start and retrigger
  Each time the corresponding value is received, the sequence is restarted with output A.

- Start once (until Sequence 'Off')
  When the corresponding value is received, the sequence is started with output A. Any further starting of the sequence by receiving this value is no longer possible until the function Sequence 'Off' is triggered.

- Save
  For each activated output, a reading telegram is sent on KNX, the received value overwrites the parameter value of the corresponding output. The received values are stored and active until the device is reloaded with the ETS.

- Stop
  When the corresponding value is received, the sequence is stopped.

- Sequence 'Off'
  The sequence 'Off' function sends an OFF telegram or 0% via every activated output, regardless of the value set in the parameters. Only the minimum delay between the telegrams is observed, but not the delay before sending the individual outputs. Sequence 'Off' is always executed completely.

- Sequence 'Off' once (until sequence)
  When the corresponding value is received, the function Sequence 'Off' is started; any further starting of this function by receiving this value is no longer possible until the sequence has been started.

© 2024 Weinzierl Engineering GmbH

Sequence call with scene object

This parameter can be used to activate a scene object for sequence call up and to determine its scene number. If a scene number is selected, additional parameters and the following object become visible:

Group object	Type KNX	Size	Direction
GO 132 Sequence controller: Sequence 1 – Scene	18.001	1 Byte	From KNX

Function *(only for scene object)*

This parameter determines the reaction of the sequence controller when the set scene is received. It is available for selection:

- Start
  When the corresponding scene is received, the sequence is started with output A; restarting via this scene is only possible again after the sequence has run through.

- Start and retrigger
  Each time the corresponding scene is received, the sequence is restarted with output A.

- Start and stop
  When the corresponding scene is received, the sequence is alternately started or stopped with output A.

- Start once (until sequence ‘Off’)
  When the corresponding scene is received, the sequence is started with output A; any further start of the sequence via reception of this scene is no longer possible until the Sequence ‘Off’ function is triggered.

Save *(only for scene object)*

This parameter determines whether the “Save scene” command should be evaluated for sequence recall when the scene is received. If this function is activated, a read telegram is sent on KNX for each activated output when “Save scene” is received; the value received overwrites the value of the corresponding output. The received values are saved and active until the device is reloaded with the ETS.

Sequence ‘Off’ with scene object

This parameter can be used to activate a scene object to start the ‘Off’ sequence function and to determine its scene number.

The following object is visible when used:

Group object	Type KNX	Size	Direction
GO 133 Sequence controller: Sequence 1 – Scene ‘Off’	18.001	1 Byte	From KNX

If “Start once (until sequence ‘Off’)” is set for sequence call up with scene object, sequence ‘Off’ must first be executed to start the sequence again.

© 2024 Weinzierl Engineering GmbH

Minimum delay between telegrams

This parameter defines the minimum delay between 2 output telegrams, this delay is always kept and has priority over the individually adjustable delays before sending of the outputs.

Output A – H

For each output either a switch or a value object can be activated:

Group object	Type KNX	Size	Direction
GO 134 – 141 Sequence controller: Sequence 1 – Output A-H	1.001	1 Bit	To KNX

Group object	Type KNX	Size	Direction
GO 134 – 141 Sequence controller: Sequence 1 – Output A-H	5.001	1 Byte	To KNX

Value

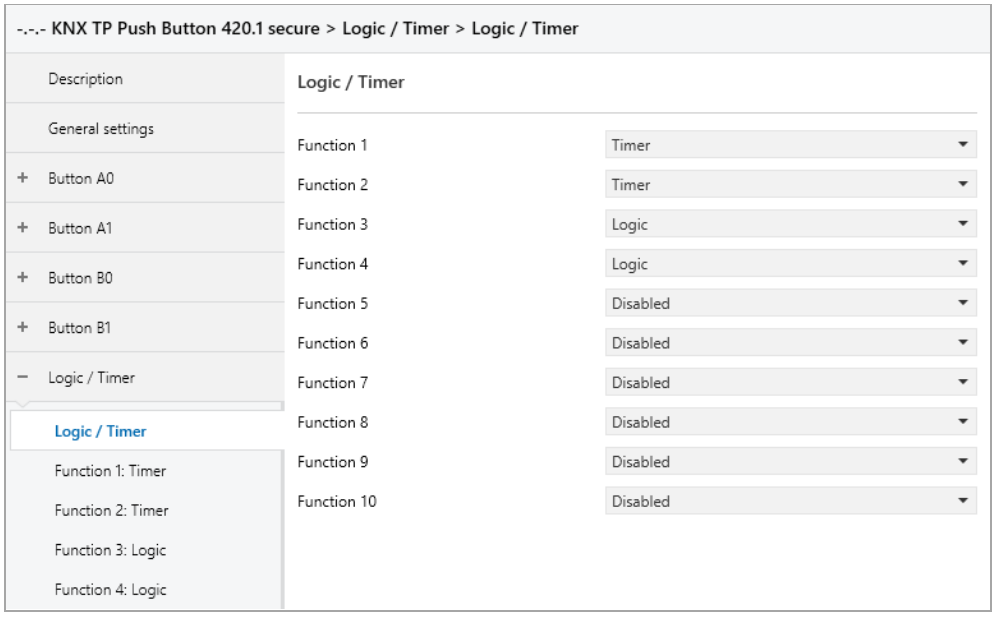
Depending on the set object type of the output, the value of the output telegram can be determined here:

- Switch on, if output switching (1 bit)
- Switch off if output switching (1 bit)
- 0…255 or 0…100%, if output value (1 byte)

Delay before sending

This determines the waiting time from starting the sequence (output A) or from sending the previous output (output B – H), which waits until the output telegram of the corresponding output has been sent.

8.23 Logic / Timer



© 2024 Weinzierl Engineering GmbH

Function 1 – 10

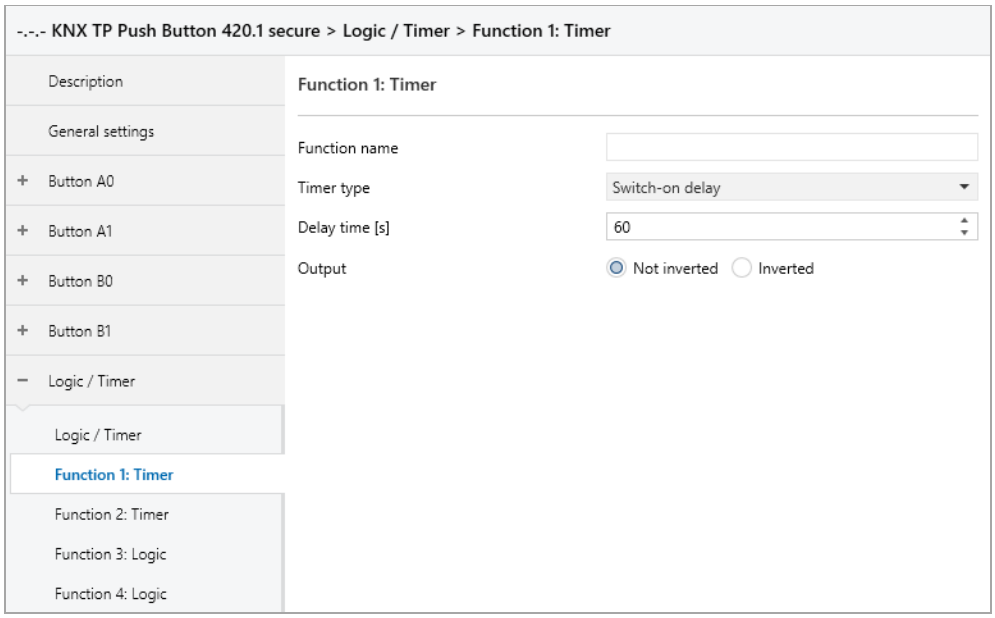
These parameters contain the functions timer and logic, whereby all 10 functions are identical.

The following options are available:

- Disabled
  No parameters and group objects for timer and logic.
- Timer
  Parameters and group objects for timer are available.
- Logic
  Parameters and group objects for logic are available.

The functions for timer and logic can be linked to one another by means of the associated group objects. This also allows to create complex structures. For this purpose, the output of a function is set to the same group address as the input of the next function.

8.24 Function 1 – 10: Timer



Function name *(10 characters)*

The function name can be chosen freely.

The name is visible in the group object entry in the ETS software. This makes it easier to work with the associated group objects, because the given name is displayed there as a label.

© 2024 Weinzierl Engineering GmbH

Timer type

Here the type of the timer can be set:

- Switch-on delay
  The ON telegram (1) received on the input is delayed on the output.
  Input: `--1---------0------`
  Output: `--|-T-1-----0------`

Group object	Type KNX	Size	Direction
Timer – Switch-on delayed – Input	1.002	1 Bit	From KNX
Timer – Switch-on delayed – Output	1.002	1 Bit	To KNX

- Switch-off delay
  The OFF telegram (0) received on the input is delayed on the output.
  Input: `--1---------0------`
  Output: `--1---------|-T-0--`

Group object	Type KNX	Size	Direction
Timer – Switch-off delayed – Input	1.002	1 Bit	From KNX
Timer – Switch-off delayed – Output	1.002	1 Bit	To KNX

- Switch-on and -off delay
  The ON/OFF telegram (1/0) received on the input is delayed on the output.
  Input: `--1---------0------`
  Output: `--|-T-1-----|-T-0--`

Group object	Type KNX	Size	Direction
Timer – Switch-on/off delayed – Input	1.002	1 Bit	From KNX
Timer – Switch-on/off delayed – Output	1.002	1 Bit	To KNX

- Impulse (staircase)
  The ON telegram (1) received on the input is sent on the output. After a delay the output sends the OFF telegram (0).
  Input: `--1---------0------`
  Output: `--1-T-0-----------`

Group object	Type KNX	Size	Direction
Timer – Impulse (staircase) – Input	1.002	1 Bit	From KNX
Timer – Impulse (staircase) – Output	1.002	1 Bit	To KNX

Each timer can be stopped by sending the opposite value to its input group object. For example: An already started switch-on timer can be stopped by sending OFF (0) to its input group object.

© 2024 Weinzierl Engineering GmbH

Delay time [s]

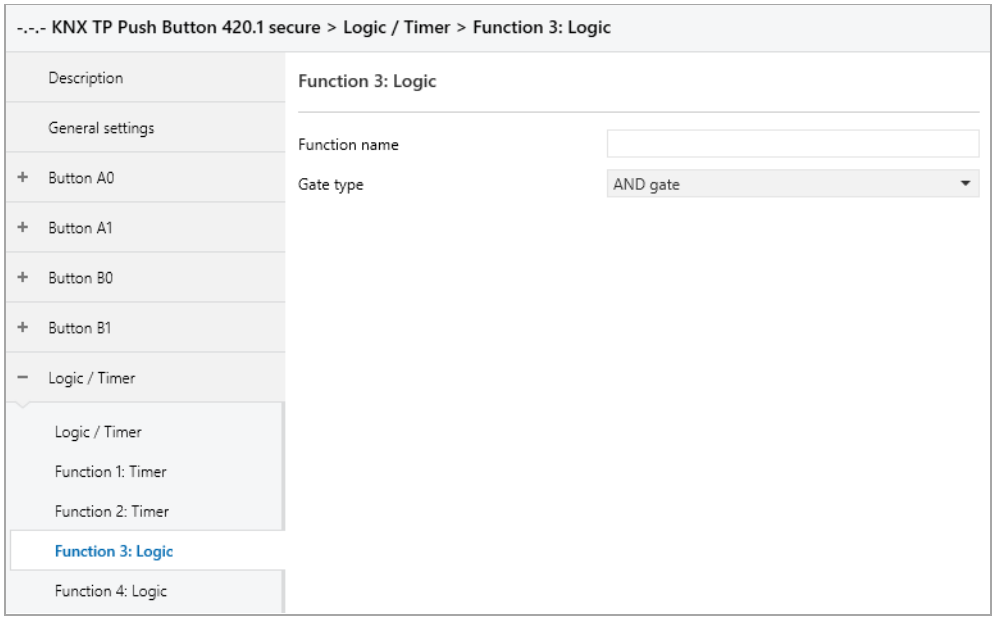
This parameter defines the delay time for sending on the output.

Output

Via this parameter the sent value on the output can be inverted:

- Not inverted
- Inverted

8.25 Function 1 – 10: Logic



Function name *(10 characters)*

The function name can be chosen freely.

The name is visible in the group object entry in the ETS software. This makes it easier to work with the associated group objects, because the given name is displayed there as a label.

© 2024 Weinzierl Engineering GmbH

Gate type

This parameter defines the type of the logic gate:

- And gate
  The output is triggered ON (1), if both inputs are switched ON (1).
- OR gate
  The output is triggered ON (1), if one or both inputs are switched ON (1).
- XOR gate
  The output is triggered ON (1), if the two inputs are not equal.
- NAND gate
  The output is triggered ON (1), if one or both inputs are switched OFF (0).
- NOR gate
  The output is triggered ON (1), if both inputs are switched OFF (0).
- XNOR gate
  The output is triggered ON (1), if both inputs are equal.

Group object	Type KNX	Size	Direction
Logic – Gate input A – Input	1.002	1 Bit	From KNX
Logic – Gate input B – Input	1.002	1 Bit	From KNX
Logic – Gate output – Output	1.002	1 Bit	To KNX

The output transmits when a telegram is received on one of the inputs. A precondition for this is that both inputs are valid (have received at least one telegram). The output sends a 1 if the respective condition is fulfilled, otherwise a 0.

- INVERTER
  Input ON (1) is converted into output OFF (0). Input OFF (0) is converted into output ON (1).

Group object	Type KNX	Size	Direction
Logic – Gate input – Input	1.002	1 Bit	From KNX
Logic – Gate output – Output	1.002	1 Bit	To KNX

The output transmits when a telegram is received on the input.

© 2024 Weinzierl Engineering GmbH

WARNING

- The device must be mounted and commissioned by an authorized electrician.
- The prevailing safety rules must be heeded.
- The device must not be opened.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.

Product database for ETS 5/6
www.weinzierl.de/en/products/420.1/ets6

Data sheet
www.weinzierl.de/en/products/420.1/datasheet

CE Declaration
www.weinzierl.de/en/products/420.1/ce-declaration

Design frames and rockers
www.weinzierl.de/en/products/match-55

WEINZIERL ENGINEERING GmbH
Achatz 3-4
84508 Burgkirchen an der Alz
GERMANY

Tel.: +49 8677 / 916 36 – 0
E-Mail: info@weinzierl.de
Web: www.weinzierl.de

2024-06-14

© 2024 Weinzierl Engineering GmbH