KNX MultiController TWIN
Room Controller

Item number 54302

Installation and Adjustment

1. Cala Touch TWIN

This document describes the functions for ALL device models.
Please check the information at the beginning of the chapter and in the text which describes the functions available for the respective individual models.

1.1. Description

The **Room Controller Cala Touch TWIN** for the TWIN bus system measures various ambient climate.

Cala Touch TWIN features a touch display that shows various display and control pages depending on the individual configuration. There is one page available that shows the current measured values and pages with touch control elements for internal temperature control, for light (manual switching or dimming), for shades or windows (manual operation).

Cala Touch TWIN is supplemented with a frame of the switch series used in buildings, and thus fits seamlessly into the interior fittings.

Common features in all models:

- **Colour touch display** with display and operating pages for
  - 1× display of current measured values
  - 1× temperature control (incl. mode change, indication whether heating/ cooling active)
  - 1× drive operation (shading) with buttons, slider, position display
  - 1× switching or dimming of light (with percentage display)
  - 1× light colour temperature setting
- **Screen saver** (clock) may be switched on or off
- Key tone may be switched on or off
- **4 inputs** for binary contacts

Cala Touch TWIN AQS/TH functions (no. 66351):

- Measuring the **CO_2-concentration** of the air, the **temperature** and **air humidity** (relative, absolute)

Cala Touch TWIN T functions (no. 66331):

- Measuring the **temperature**

Deliverables

- Housing with display
- Base plate
- Digital supply line

Additionally required (not included in the deliverables):

- Junction box Ø 60 mm, 42 mm deep
- Frame (for insert 55 x 55 mm), compatible to the switch scheme used in the building

1.1.1. Technical specifications

Material	Real glass, plastic
Display	Visible diagonal: 2.3 inches (59 mm) Resolution: 320 × 240 pixels
Colour	white glass, white housing (pure white RAL 9010)
Assembly	Flush mounting (Wall mounting in junction box Ø 60 mm, 42 mm deep)
Protection category	IP 20
Dimensions	approx. 55 × 55 × 35 (W × H × D, mm), mounting depth approx. 7 mm
Total weight	approx. 90 g (incl. supply line, base plate)
Ambient temperature	Operation -20…+70°C, storage -30…+70°C
Ambient humidity	max. 95% RH, avoid condensation
Operating voltage	TWIN bus voltage
Bus current	max. 18 mA
Data output	TWIN +/- bus connector terminal (blue/white)
BCU type	Integrated microcontroller
Inputs	4× digital, max. cable length 10 m.
CO_2-sensor (for Cala Touch TWIN AQS/TH):	
CO_2-measuring range	300...5000 ppm
CO_2 resolution	1 ppm
CO_2 accuracy	± 50 ppm ± 3% of the measured value
Temperature sensor (for Cala Touch TWIN AQS/TH, Cala Touch TWIN T):	
Temperature measuring range	-20…+70°C
Temperature resolution	0.1°C
Temperature accuracy*	± 0.8°C at -25…-10°C ± 0.5°C at -10…+65°C ± 0.6°C at +65…+70°C
Humidity sensor (for Cala Touch TWIN AQS/TH):	
Humidity measuring range	0% HR … 100% HR
Humidity resolution	0.1%
Humidity accuracy	±7.5% HR at 0...10% HR ±4.5% HR at 10...90% HR ±7.5% HR at 90...100% HR
Humidity drift	± 0.5% RH per year in normal atmosphere

* Please note the information in chapter *Measuring accuracy*.

The product is compliant with the provisions of EC guidelines.

Measuring accuracy

Measurement deviations due to sources of interference (see chapter *Installation location*) must be corrected in the MultiController TWIN application in order to achieve the specified accuracy of the sensor (offset).

1.2. Installation and commissioning

1.2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

CAUTION!
Live voltage!
There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

function Technology AS is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

1.2.2. Installation location

The sensor is installed in a flush-mounted box (Ø 60 mm, 42 mm deep).

The sensor may only be installed and used in dry interior spaces. Avoid condensation.

When selecting an installation location, please ensure that the measurement results are affected as little as possible by external influences. Possible sources of interference include:

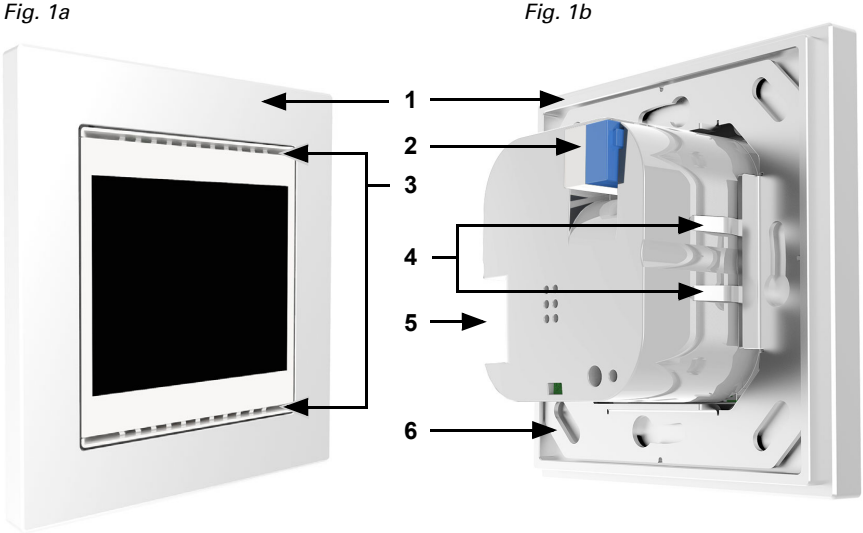
- Direct sunlight
- Draughts from windows and doors
- Draughts from ducts which lead to the junction box in which the sensor is mounted from other rooms.
- Warming or cooling of the building structure on which the sensor is mounted, e.g. due to sunlight, heating or cold water pipes
- Connection lines, which lead from warmer or colder areas to the sensor

Measurement variations from such sources of interference must be corrected in the application program for the MultiController in order to ensure the specified accuracy of the sensor (offset).

1.2.3. Device design

View with frame and base plate.

Fig. 1a *Fig. 1b*



1 Frame (not included in the deliverables)
2 TWIN terminal BUS +/-
3 Openings for air circulation
4 Catches
5 Slot supply line inputs
6 Base plate

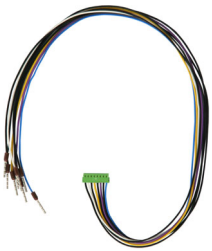


Fig. 2
Analogue/digital supply line inputs:
Input 1: white / black (GND)
Input 2: yellow / black (GND)
Input 3: purple / black (GND)
Input 4: blue / black (GND)

1.2.4. Sensor assembly

First, place the wind-proof box with the supply connection. Seal the inlet tubes as well, in order to prevent drafts.

Then screw the base plate onto the socket and position the frame of the switch range on top of this. Connect the bus lines +/- to the blue/white TWIN plug and plug the TWIN plug into the intended slot (no. 8). If required, connect the analogue/digital inputs via the breakout cable that is included in the delivery.

Insert the housing firmly onto the metal frame using the catches so that sensor and frame are fixed together.

1.2.5. Notes on mounting and commissioning

Never expose the device to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative humidity of 95%. Avoid condensation.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

1.3. Maintenance and care

Fingerprints on the display and the housing are best removed with a cloth moistened with water or a microfibre cloth. Do not use an abrasive cleaning agent or aggressive cleansing agents.

2. Intra-Sewi TWIN

2.1. Description

The **Sensor Intra-Sewi TWIN L-Pr** for the TWIN building bus system captures brightness and motion in a room. Two **Intra-Sewi TWIN** can be connected at the same time to one controller.

The **Sensor Intra-Sewi TWIN TH-L-Pr** *additionally* measures the temperature and the air humidity.

Functions:

- **Brightness measurement** with **brightness control**
- **Motion detection**

Additional functions Intra-Sewi TWIN TH-L-Pr:

- Measuring the **temperature** and **air humidity** (relative, absolute)

Scope of delivery

- Sensor
- Pre-assembled clamps for false ceiling installation
- Support ring for connector socket installation

For socket installation you will need *in addition* (not supplied):

- Socket Ø 60 mm, 42 mm deep

2.1.1. Technical data

Housing	Plastic, glass
Colour	similar to pure white RAL 9010
Assembly	built-in, in false ceiling or connector socket
Protection category	IP 30
Dimensions	Ø approx. 80 mm; height above wall approx. 5 mm height in wall (installation) approx. 31 mm (incl. clamps)
Total weight	approx. 50 g
Ambient temperature	Operation -20…+60°C, storage -20…+70°C
Ambient humidity	max. 95% RH, avoid condensation
Operating voltage	TWIN bus voltage
Bus current	max. 10 mA
Data output	TWIN +/- bus plug-in terminal
BCU type	Integrated microcontroller
PEI type	0
Brightness sensor:	
Measurement range	0 lux … 2,000 lux (higher values can be measured and output)
Resolution	1 lux at 0…2,000 lux

Accuracy	±15% of the measurement value at 30 lux ... 2,000 lux
Motion sensor:	
Coverage angle	approx. 94° × 82° (see also *Coverage area of the motion detector*)
Range	approx. 5 m
Temperature sensor (only Intra-Sewi TWIN TH-L-Pr):	
Measurement range	-20°C ... +60°C
Resolution	0.1°C
Accuracy*	±0.7°C at -20°C...-10°C ±0.5°C at -10°C...+60°C
Humidity sensor (only Intra-Sewi TWIN TH-L-Pr):	
Measurement range	0% rH ... 100% rH
Resolution	0.1% rH
Accuracy	± 7.5% rH at 0% ... 10% rH ± 4.5% rH at 10% ... 90% rH ± 7.5% rH at 90% ... 100% rH

The product is compliant with the provisions of the EU guidelines.

*Measuring accuracy

Deviations in measured values due to interfering sources (see chapter *installation location*) must be corrected in the MultiController TWIN application in order to achieve the specified accuracy of the sensor (offset).

During the **Temperature measurement**, the self-heating of the device is taken into consideration by the electronics. It is compensated by the software, therefore the displayed/output indoor temperature measuring value is correct.

2.2. Installation and start-up

2.2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

CAUTION!
Live voltage!
There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.

- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

function Technology AS is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2.2. Installation location

Install and use only in dry interior rooms! Avoid condensation.

The Sensor is installed in a false ceiling or a standard connection socket (Ø 60 mm, 42 mm deep).

The device must be installed on the ceiling, so that the **movement capturing** takes place from above. Make sure that the desired area is covered by the sensor's coverage angle and that no obstacles obstruct the recording.

When selecting an installation location for **Intra-Sewi TWIN TH-L-Pr**, please ensure that the measurement results of **temperature and humidity** are affected as little as possible by external influences. Possible sources of interference include:

- Direct sunlight
- Draughts from windows and doors
- Draughts from ducts coming from other rooms or the outdoors
- Warming or cooling of the building structure on which the sensor is mounted, e.g. due to sunlight, heating or cold water pipes
- Connection lines and empty ducts which lead from warmer or colder areas to the sensor

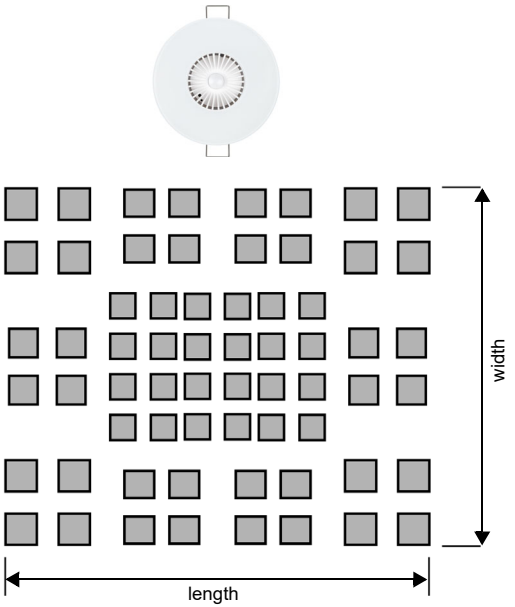
Measurement variations from such sources of interference must be corrected in the application program for the MultiController in order to ensure the specified accuracy of the sensor (offset).

Coverage area of the motion detector

Angle of coverage: approx. 94° × 82°
Range: approx. 5 m

Segmentation of the coverage area

Fig. 3



Orientation of the support ring for socket installation

Size of the coverage area

Distance	Length	Width
2.50 m	approx. 5.40 m	approx. 4.30 m
3.50 m	approx. 7.50 m	approx. 6.10 m

2.2.3. Installation of the sensor

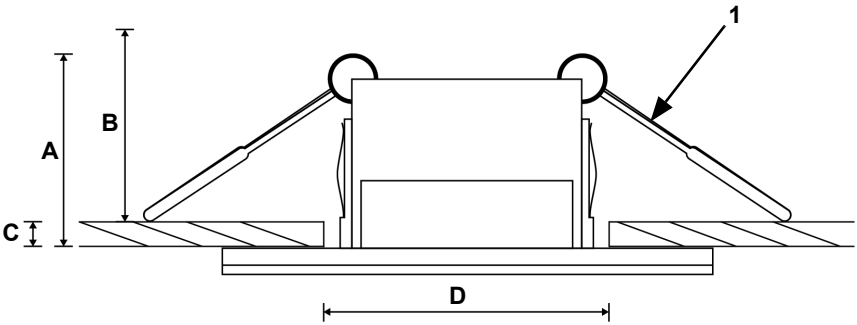
Installation in false ceiling

Connect the bus line to the TWIN terminal (blue/white).

Place the device in the installation opening in the ceiling. For this, fold the clamps upwards and guide the device through the installation opening with the clamps first.

The device is automatically fixed by the clamps.

Fig. 4
1 Clamps for installation in false ceiling
A Height in wall (built-in): approx. 31 mm
B Space behind the false ceiling, necessary for insertion (clear dimension): approx. 31 mm
C Maximum wall thickness: 20 mm
D Hole size for installation: 50...65 mm



Installation in connector socket

Before socket installation, remove the clamps for the false ceiling installation.

Screw the support ring onto the socket. Pay attention to the orientation as shown in the chapter *Coverage area of the motion detector*.

Connect the bus line to the TWIN terminal (blue/white).

Clamp the device in the support ring so that the springs on the device snap over the tabs of the support ring.

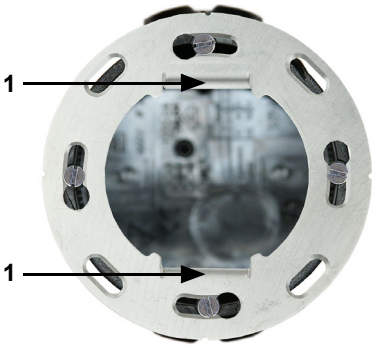
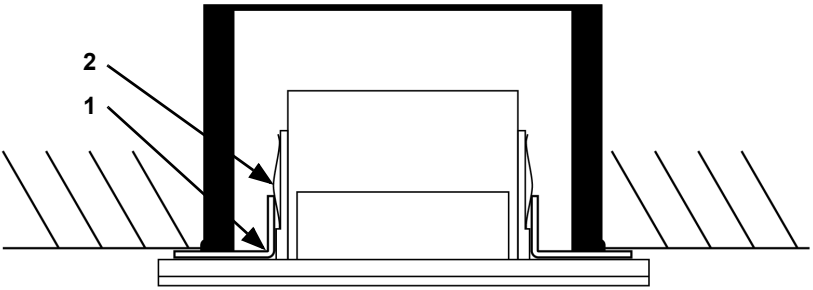


Fig. 5: Support ring
1 Tabs

Fig. 6
Connector socket with Ø 60 mm, 42 mm deep.
1 Support ring, screwed to the socket
2 Springs hold the device firmly on the support ring



Back view: connection

The connection is made with the TWIN terminal (red/black) to TWIN TP.

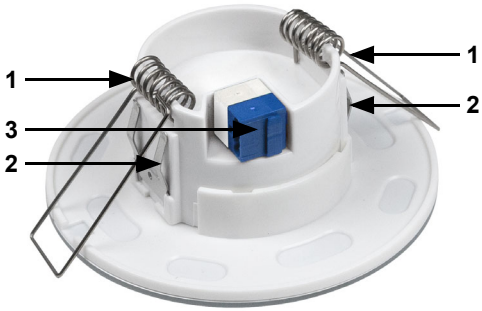


Fig. 7
1 Clamps for installation in false ceiling
2 Springs for installation in support ring
3 TWIN terminal

Front view

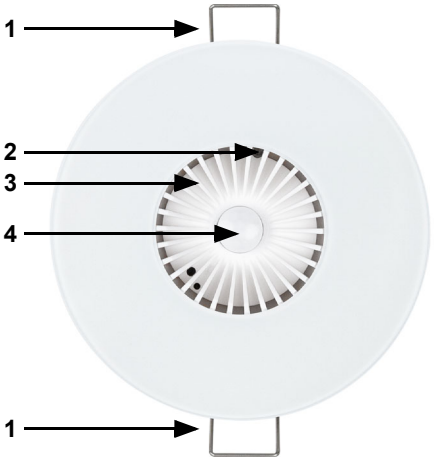


Fig. 8
1 Clamps for installation in false ceiling
2 Brightness sensor
3 Airing lamella
4 Motion sensor

2.2.4. Notes on mounting and commissioning

Never expose the device to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative humidity of 95%. Avoid condensation.

The airing lamella must not be closed or covered. The device must not be painted over.

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

The motion sensor has a start-up phase of approx. 15 seconds during which no motion detection takes place.

2.3. Maintenance

The brightness and movement sensor and the airing lamella must not get dirty or covered. As a rule, it is sufficient to wipe the device with a soft, dry cloth twice a year.

3. MultiController TWIN

3.1. Description

The **Room Controller KNX MultiController TWIN** is smart, compact and installation friendly, fitted with WAGO Winsta plugs. With an installation height of only 40 mm, the **KNX MultiController TWIN** is perfect for mounting in ceiling and for below-floor installations. Easy access to front panel for manual operation and testing.

Application program featuring complete thermostat controller for heating and cooling, KNX-DALI gateway with groups and tunable white function, MP-bus gateway for 4 addresses, multifunction relay outputs with logic, timer and PWM, potential free binary inputs for manual operation of lighting or shutters/blinds. Terminals for local sensors make it possible to combine KNX MultiController with sensor to get 4-channel movement control, brightness sensing and constant lighting control functionality.

Temperature sensing and manual operation is possible through the Cala TWIN userpanel 55x55. Temperature sensing is also possible through 66121 and 66131.

Features:

- 16 EVGs and 4 DALI groups / broadcast / DT8 TW
- 2 thermo relay outputs 230V/10W
- 2 mechanical multifunctional outputs 230V/16A (Only 54302)
- 4 binary inputs
- One local extension bus TWIN (24V/40mA)
    - Up to two presence detector Intra-Sewi TWIN
    - One local userpanel Cala TWIN
- 4 channel presence sensors
- Constant light controller
- PI-controller temperature, humidity and CO2
- Threshold value for brightness, temperature, humidity and CO2
- 4 MP-bus addresses with internally 24V/10W
- Comparator logic (4/5)
- AND/OR logic (8/8)
- Computer logic (8)
- Scene logic (16/16)

KNX MultiController TWIN

54300 KNX MultiController TWIN Basic, Wago
54302 KNX MultiController TWIN 2x 16A relay, Wago

Extension for KNX MultiController TWIN

66111 Intra-Sewi TWIN L-Pr, ceiling movement/lux, white
66121 Intra-Sewi TWIN TH-L-Pr, ceiling movement/lux/temp/humidity, white
66131 TWIN T-L-Pr-UP Touch, wall movement/lux/temp/buttons, white

66211 Cala TWIN MultiTouch T, Light
66221 Cala TWIN MultiTouch T, Light/Blind
66231 Cala TWIN MultiTouch T, Light/Scenes

66331 Cala Touch TWIN T, display/temp, white
66351 Cala Touch TWIN AQS/TH, display/temp/humidity/CO2, white

Accessories

54912 Wago plug kit for KNX MultiController TWIN

Deliverables

- Housing with display
- Base plate
- Digital supply line

Additionally required (not included in the deliverables):

- Junction box Ø 60 mm, 42 mm deep
- Frame (for insert 55 x 55 mm), compatible to the switch scheme used in the building

3.1.1. Technical specifications

		KNX MultiController	
		54300	**54302**
Power	• Operating voltage, Main	230V AC 50Hz	
	• Operating voltage, KNX	21...30 V DC	
	• Power consumption, KNX	10mA	
Output relay mechanical	• Number of potential free contacts	–	–
	• Number of 230V outputs	–	2
	• Un rated voltage	–	–
	• In rated current	–	16A
	• DALI output	Broadcast / 4 Groups	
	• Numbers of EVGs	16	
	• Power loss at max. load	6W	
Mechanical relay switching power	• Max. inrush current Ip	–	492A/1,5ms
	• AC3 operation (cos(phi)=0.45) EN 60 947-4 -1	–	5A
	• AC1 operation (cos(phi)=0.80) EN 60 947-4 -1	–	16A
	• DC current switching capacity (Ohmic load)	–	
	• Mechanical endurance	–	100.000
Inputs	• Number of inputs	4	
	• Polling voltage Un	24V	
	• Sensing current In	1mA	
	• Permitted cable lengths	10 m	

Connections	• KNX	WAGO Winsta KNX
	• Load current circuits	WAGO Winsta MIDI
	• Inputs	Via connection terminal with screws
	• Wiring	0.5-1.5 mm2
	• Connection of local sensor	Wago 893
Operating and display elements	• Through control panel in front	
Housing	• PC + ABS (antimony-, chlorine- and bromine-free flame retardant)	
KNX voltage	• SELV 29V DC (safety extra low voltage)	
MP voltage	• SELV 24V DC (safety extra low voltage)	
TWIN voltage	• SELV 24V DC (safety extra low voltage)	
DALI voltage	• ELV 16V DC (extra low voltage)	X
Temperature range	• Operation	+5 °C ... +45 °C
	• Storage	-25 °C ... +65 °C
	• Transport	-25 °C ... +65 °C
Design	• Dimensions (H x W x D)	40.0 x 130.5 x 190.0 mm
Approvals	• EIB / KNX EN 50 090-2-2	Certification
CE mark	• In accordance with the EMC guideline and low voltage guideline	

The product is compliant with the provisions of EC guidelines.

3.2. Installation and commissioning

3.2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

CAUTION!
Live voltage!
There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

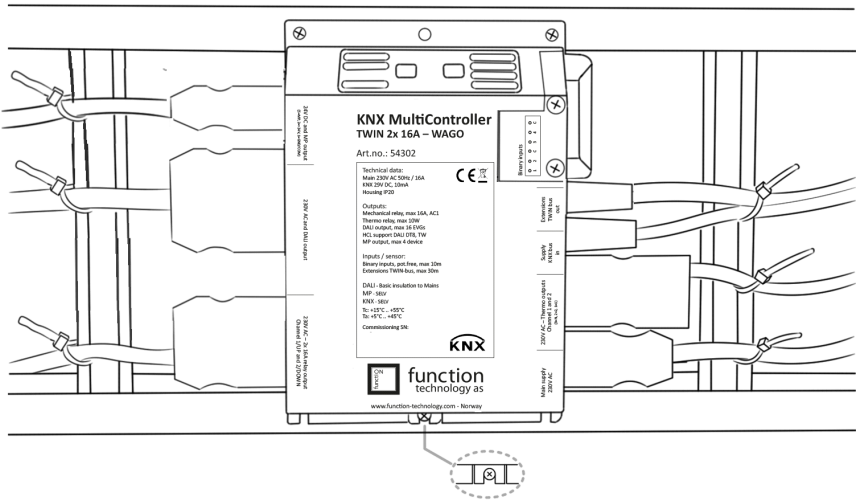
The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

function Technology AS is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

3.2.2. Installation location

Always mount a screw at the centre screw hole in the back to lock the KNX MultiController securely (see figure below)

Make sure the cables are not weighing down on the connectors, but mounted securely to the cable tray or mounting bracket with cable strips.



Main supply 230V AC
WINSTA® 770-203/035-000, black (3-Pole)
Socket, with strain relief housing for one cable

Supply KNX bus
WINSTA® 893-1002, green (2-Pole)
Socket with strain relief housing for one cable

Extensions TWIN bus
WINSTA® 893-1032, light gray (2-Pole)
Plug with strain relief housing for one cable

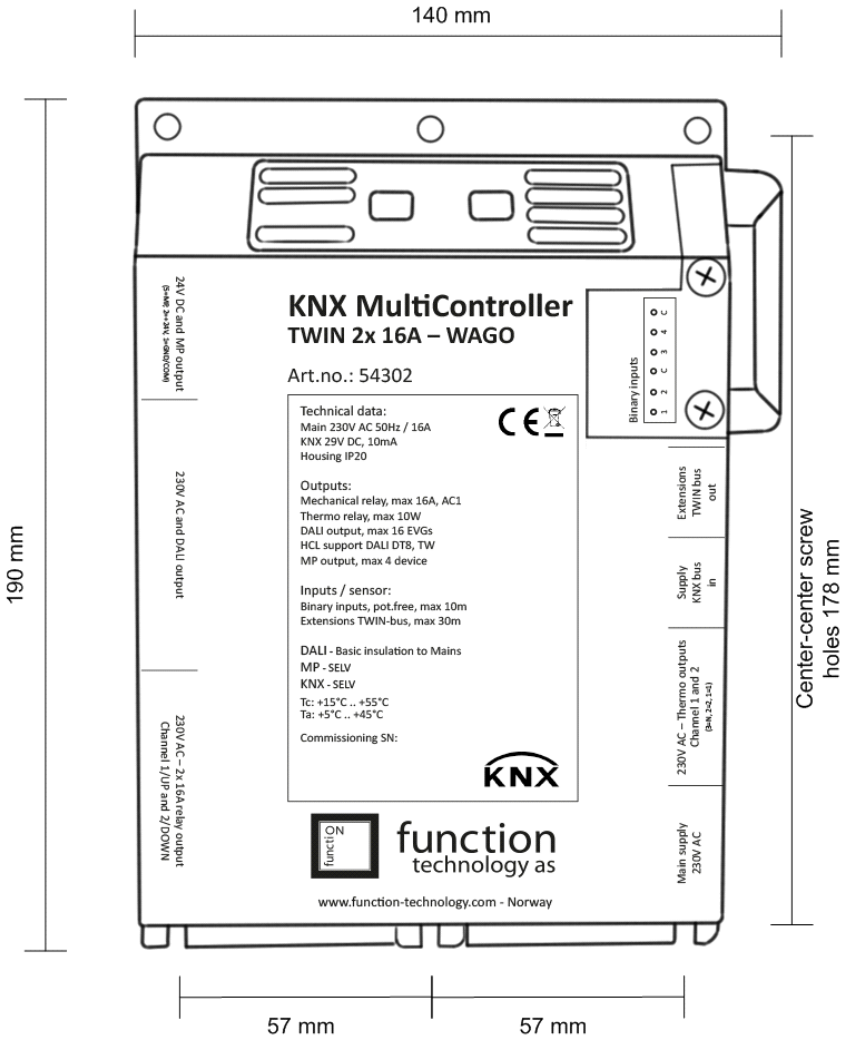
230V AC - Thermo outputs
WINSTA® 770-253, Grey (3-Pole)
Plug without strain relief housing
+
WINSTA® 770-503/023-000, Black
Strain relief housing for two cables

230V AC - 2x 16A relay outputs
WINSTA® 770-114, black (4-Pole)
Plug with strain relief housing for two cables

230V AC and DALI output
WINSTA® 770-1115/022-000, blue (5-Pole)
Plug with strain relief housing for two cables

24V DC and MP output
WINSTA® 890-293/081-000, pink (3-Pole)
Plug without strain relief housing
+
WINSTA® 890-503, black
Strain relief housing for one cable

3.2.3. Dimensions



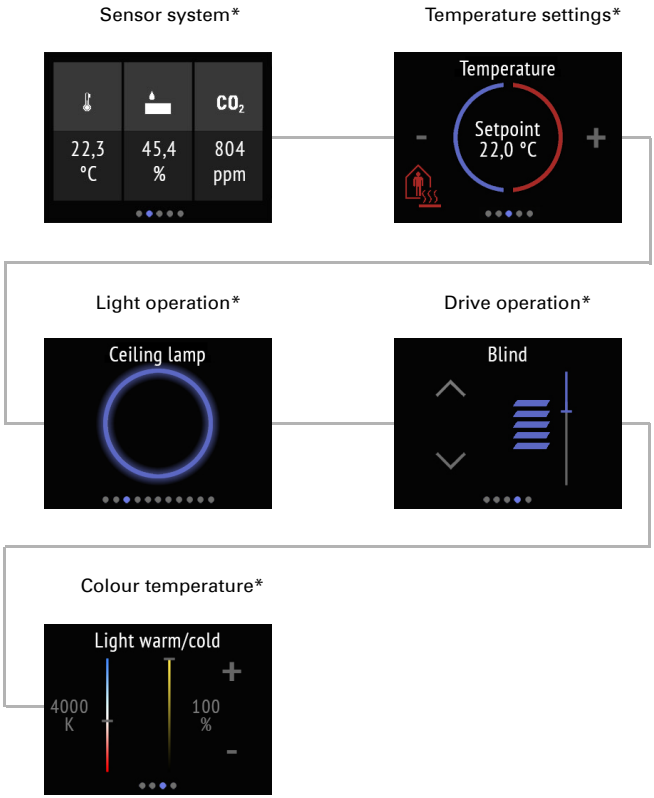
3.3. Operation of the MultiContollers TWIN on the touch display of the Cala Touch TWIN

You call up the different menus on the display by swiping to the right or left.

3.3.1. Menu overview

••••• Navigation by swiping, top menu level.

Fig. 9: Menu overview



* Setting depends on the device model or the settings selected.

3.3.2. Measured value display/Sensor system

The display of measured values on the device is only possible if the "Sensor system" has been activated in the ETS setting item "Cala settings".
📖 *Cala settings*, pag71.

Fig. 10: Menu Sensor system, example Cala Touch TWIN AQS/TH

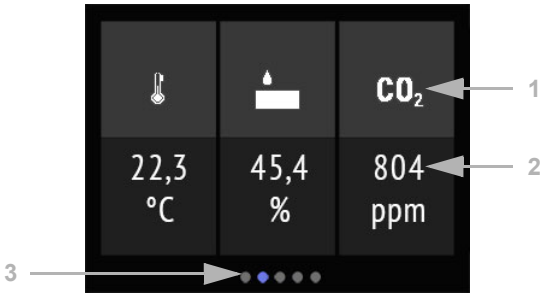
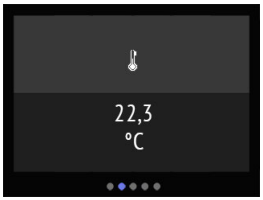


Fig. 11: Sensor system menu: Cala Touch TWIN T



The display page "Sensor system" is always shown beneath the
(1) symbols for the measurement variables
(2) current measurement values of the sensor. Depending on the model, this can be fan, air humidity and/or temperature.

The temperature is displayed in degree Celsius.

The relative air humidity is displayed in %.

CO_2 The CO_2 content in the air is shown in ppm (parts per million), with 1000 ppm = 0,1%.

CO_2 levels between 300 ppm and 1000 ppm are referred to as fresh air. From 1000 ppm to 2000 ppm the air is considered stale.

In all cases, this is the measuring value from the device.

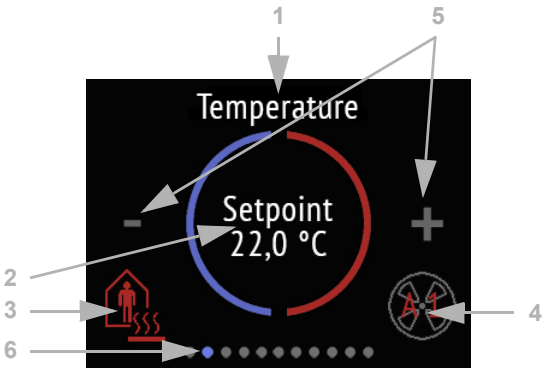
(3) The dots on the lower display edge symbolise the individual menu pages in the main menus. The currently selected position is marked in colour. Swipe to the left or right on the display to show the other menu pages.

3.3.3. Temperature control

The room temperature can be set individually on the "Temperature controller" operating page.

The manual temperature setting on the device is only possible if "Temperature control" has been activated in the ETS setting item "Cala settings".
📖 *Cala settings*, pag71.

Fig. 12: Temperature control menu:



(1) Name
(2) Current setpoint
(3) Current mode (optional)
(4) Information on fan stage / fan coil (optional)

(3) Change mode:
- Tapping on the mode symbol displays the temperature control modes that have been approved for display selection in the ETS. The active mode is shown in colour (red for heating, blue for cooling).
- In order to select a different mode, first switch to the symbol of the desired mode by tapping.
- Then remain on the symbol a little longer. If the button tone is active, you will receive an acoustic feedback. The mode is now active, and the colour for this symbol changed from white to red.

The modes change in the following sequence:

Comfort (day, present), heating and/or cooling active

Standby (day, brief absence), heating and/or cooling active

Eco (night), heating and/or cooling active

Building protection (prolonged absence, e.g. vacation), heating and/or cooling active

The small additional symbol indicates whether heating or cooling is in progress (manipulated variable not equal to zero, use depends on connected system).

As long as Eco mode is active, there is an additional symbol for "comfort extension". This option may also be blocked in the ETS (symbol does not appear for selection).

Remain on the comfort extension symbol for a little longer in order to briefly switch back to comfort operation. This allows the user to maintain the nominal comfort value for a longer time, e.g. when having guests. The duration of this comfort extension period is set in the ETS. The remaining time is shown next to the symbol. After the comfort extension period is terminated, the system returns to Eco mode.

(4) The fan coil control blower icon shows the current mode and level in red. A" means "Automatic", "M" "Manual".

The level can be changed manually by tapping on the blower symbol. Pressing the button several times will change to M0 (Manual Off), M1 (Manual Level 1), M2 (Manual Level 2), M3 (Manual Level 3) and finally AX (Automatic) again.

To confirm the selection and activate the displayed mode, remain on the icon for a little longer. If the button tone is active, you will receive an acoustic feedback. The mode is now active, and the colour for this symbol changed from white to red.

(5) The nominal value for the current mode can be adjusted by tapping on the minus and/or plus symbol.

If the manual modification of the nominal value is blocked in one mode, the symbol "Manual blocked" is briefly shown when an attempt is made to modify the value.

(6) The dots on the lower display edge symbolise the individual menu pages in the main menus. The currently selected position is marked in colour. Swipe to the left or right on the display to show the other menu pages.

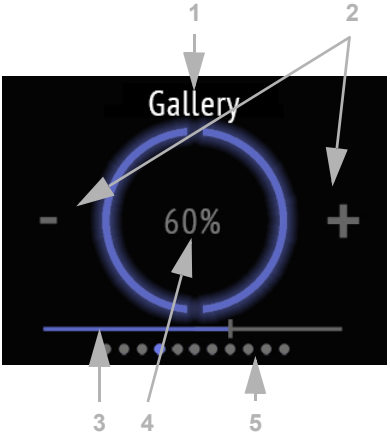
3.3.4. Light

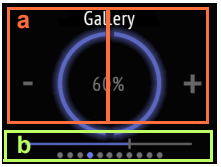
On the "Light" operating side, lights can be switched or dimmed.

Manual light operation on the device is only possible if a "light" has been activated in the ETS setting point "Cala settings".

📖 *Cala settings*, pag71.

Fig. 13: "Light" menu





Touch areas
a Light switch (marked in red, tap)
b slide bar (marked in green, swipe)

(1) Name
(2) two surfaces with minus and plus symbol.

The circle symbol is grey when switched off, and blue when on.

Tap on the left part of the screen to switch off the light. Tap on the right part to switch on.

If the buttons are pressed for a long time, dimming is darker or brighter.

(3) Alternatively, swipe left (darker) or right (brighter) on the slider bar that is shown in the *lower* part of the display. The slide bar position shows the current brightness of the lamp in percent.

(4) The current brightness value in percent is displayed.

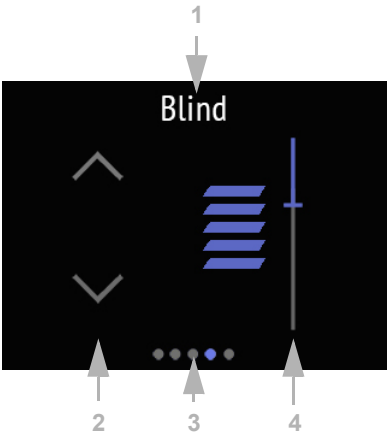
(5) The dots on the lower display edge symbolise the individual menu pages in the main menus. The currently selected position is marked in colour. Swipe to the left or right in the *top* half of the display to show the other menu pages.

3.3.5. Drive (shading, window)

On the "Drive" operating page, blinds, roller shutters, awnings can be raised and lowered or windows can be opened and closed.

Manual operation setting of shading or windows on the device is only possible if "Drive" has been activated in the ETS setting item "Cala settings".
📖 *Cala settings*, pag71.

Fig. 14: Drive menu



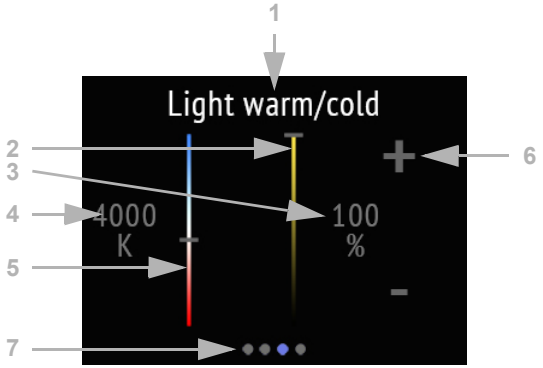
(1) Name
(2) Buttons for up and down (for blinds also for adjusting the blind position)
(3) The dots on the lower display edge symbolise the individual menu pages in the main menus. The currently selected position is marked in colour. Swipe to the left or right on the display to show the other menu pages.
(4) Slider

3.3.6. Colour temperature

On the "Colour temperature" operating page, the light temperature and brightness of a light can be individually adjusted.

Manual setting of a light colour temperature on the device is only possible if the "Colour temperature" has been activated in the ETS setting point "Cala settings".
📖 *Cala settings*, pag71.

Fig. 15: Colour temperature menu



(1) Name
(2) Slider for changing the brightness (dimming)
(3) current brightness value in %
(4) current colour temperature value in Kelvin
(5) slider for changing the colour temperature value
(6) keys for switching or dimming the brightness
All changes are transferred directly to the bus and are immediately effective/visible.

Function details can be set in the ETS.
🕮 *Adjustable white*, pag144

(7) The dots on the lower display edge symbolise the individual menu pages in the main menus. The currently selected position is marked in colour. Wipe the display to the left or right to display the other menu pages.

3.4. Transfer protocol

Units:

Temperatures in degrees Celsius
Air humidity in %
Absolute air humidity in g/kg and/or g/m^3
CO_2 content in ppm
Variables in %

3.4.1. List of al communication objects

Abbreviations Flags:

C Communication
R Read
W Write

T Transmit
U Update

No.	Text	Function	Flags	DPT Type	Size
1	Software version	Output	R-CT-	[217.1] DPT_Version	2 Bytes
51	Date / time	Input	-WCTU	[19.1] DPT_DateTime	8 Bytes
52	Date	Input	-WCTU	[11.1] DPT_Date	3 Bytes
53	Time	Input	-WCTU	[10.1] DPT_TimeOfDay	3 Bytes
57	Cala Screen brightness in %	Input	RWC--	[5.1] DPT_Scaling	1 Byte
58	Cala Screen saver (1=on| 0=off)	Input	RWC--	[1.1] DPT_Switch	1 Bit
59	Cala Screen saver illumination (1=on| 0=off)	Input	RWC--	[1.1] DPT_Switch	1 Bit
60	Cala Screen saver waiting time in seconds	Input	RWC--	[7.5] DPT_TimePeriodSec	2 Bytes
62	Cala Screen no touch waiting time in seconds	Input	RWC--	[7.5] DPT_TimePeriodSec	2 Bytes
63	Cala Screen language	Input	RWC--	[234.1] DPT_LanguageCodeAlpha2_ASCII	2 Bytes
64	Cala Button tone (1=on| 0=off)	Input	RWC--	[1.1] DPT_Switch	1 Bit
65	Cala button 1	Output	R-CT-	[1.1] DPT_Switch	1 Bit
66	Cala button 2	Output	R-CT-	[1.1] DPT_Switch	1 Bit
67	Cala button 3	Output	R-CT-	[1.1] DPT_Switch	1 Bit
68	Cala button 4	Output	R-CT-	[1.1] DPT_Switch	1 Bit
69	Cala menu Sensors: Display on/off	Input	-WC--	[1.1] DPT_Switch	1 Bit
70	Cala menu Sensors: Name	Input	-WC--	[16.0] DPT_String_ASCII	14 Bytes
71	Cala menu Temperature controller: Display on/off	Input	-WC--	[1.1] DPT_Switch	1 Bit
72	Cala menu Temperature controller: Name	Input	-WC--	[16.0] DPT_String_ASCII	14 Bytes
73	Cala menu Light: Display on/off	Input	-WC--	[1.1] DPT_Switch	1 Bit
74	Cala menu Light: Name	Input	-WC--	[16.0] DPT_String_ASCII	14 Bytes
75	Cala menu Drive: Display on/off	Input	-WC--	[1.1] DPT_Switch	1 Bit
76	Cala menu Drive: Name	Input	-WC--	[16.0] DPT_String_ASCII	14 Bytes

No.	Text	Function	Flags	DPT Type	Size
77	Cala menu Colour temperature: Display on/off	Input	-WC--	[1.1] DPT_Switch	1 Bit
78	Cala menu Colour temperature: Name	Input	-WC--	[16.0] DPT_String_ASCII	14 Bytes
81	Cala menu Light: Switching	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
82	Cala menu Light: Dimming	Output	R-CT-	[3.7] DPT_Control_Dimming	4 Bit
83	Cala menu Light: Brightness	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
84	Cala menu Light: Brightness feedback	Input	-WC--	[5.1] DPT_Scaling	1 Byte
91	Cala menu Drive: Extended	Output	--CT-	[1.8] DPT_UpDown	1 Bit
92	Cala menu Drive: Brief	Output	--CT-	[1.8] DPT_UpDown	1 Bit
93	Cala menu Drive: Movement position	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
94	Cala menu Drive: Slat position	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
95	Cala menu Drive: Operation lock	Input	-WC--	[1.1] DPT_Switch	1 Bit
101	Cala menu Colour temperature: Value in Kelvin	Output	R-CT-	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
102	Cala menu Colour temperature: value in Kelvin Feedback	Input	-WC--	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
103	Cala menu Colour temperature: switch brightness	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
104	Cala menu Colour temperature: dim brightness	Output	R-CT-	[3.7] DPT_Control_Dimming	4 Bit
105	Cala menu Colour temperature: brightness value in %	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
106	Cala menu Colour temperature: brightness value in % Feedback	Input	-WC--	[5.1] DPT_Scaling	1 Byte
111	Temperature sensor: Malfunction	Output	R-CT-	[1.1] DPT_Switch	1 Bit
112	Temperature sensor: External measurement	Input	-WCT-	[9.1] DPT_Value_Temp	2 Bytes
113	Temperature sensor: Measurement value	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
114	Temperature sensor: Total measurement	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
115	Temperature sensor: Min./Max. measurement query	Input	-WC--	[1.17] DPT_Trigger	1 Bit
116	Temperature sensor: Minimum measurement	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
117	Temperature sensor: Maximum measurement	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
118	Temperature sensor: Min./Max. measurement reset	Input	-WC--	[1.17] DPT_Trigger	1 Bit
121	Temp. thresholdV 1: Absolute value	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
122	Temp. thresholdV 1: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
123	Temp. thresholdV 1: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
124	Temp. thresholdV 1: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
125	Temp. thresholdV 1: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
126	Temp. thresholdV 1: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
128	Temp. thresholdV 2: Absolute value	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
129	Temp. thresholdV 2: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
130	Temp. thresholdV 2: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
131	Temp. thresholdV 2: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
132	Temp. thresholdV 2: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
133	Temp. thresholdV 2: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
135	Temp. thresholdV 3: Absolute value	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
136	Temp. thresholdV 3: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
137	Temp. thresholdV 3: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
138	Temp. thresholdV 3: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
139	Temp. thresholdV 3: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
140	Temp. thresholdV 3: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
142	Temp. threshold value 4: Absolute value	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
143	Temp. threshold value 4: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
144	Temp. thresh. val. 4: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
145	Temp. thresh. val. 4: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
146	Temp. threshold value 4: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
147	Temp. threshold value 4: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
151	Temp.control: HVAC mode (priority 1)	Output/ Input	RWCT-	0	1 Byte
152	Temp.control: HVAC mode (priority 2)	Output/ Input	RWCT-	0	1 Byte
153	Temp.control: Mode frost/heat protection activt.	Input	RWCT-	[1.1] DPT_Switch	1 Bit
154	Temp.control: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
155	Temp.control: Current setpoint	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
156	Temp.control: Switch. (0: Heating | 1: Cooling)	Input	-WC--	[1.1] DPT_Switch	1 Bit
157	Temp.control: Setpoint Comfort heating	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
158	Temp.control: Setpoint Comfort heat.(1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
159	Temp.control: Setpoint Comfort cooling	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
160	Temp.control: Setpoint Comfort cool.(1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
161	Temp.control: Basic 16-bit setpoint shift	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
162	Temp.control: Setpoint Standby heating	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
163	Temp.control: Setpoint Standby heat.(1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
164	Temp.control: Setpoint Standby cooling	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
165	Temp.control: Setpoint Standby cool. (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
166	Temp.control: Setpoint Eco heating	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
167	Temp.control: Setpoint Eco heating (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
168	Temp.control: Setpoint Eco cooling	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
169	Temp.control: Setpoint Eco cooling (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
170	Temp.control: Control variable heating (level 1)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
171	Temp.control: Control variable heating (level 2)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
172	Temp.control: Control variable cooling (level 1)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
173	Temp.control: Control variable cooling (level 2)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
174	Temperature control: Variable for 4/6-way valve	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
175	Temp.control: Status Heat. level 1 (1=ON|0=OFF)	Output	RWCT-	[1.1] DPT_Switch	1 Bit
176	Temp.control: Status Heat. level 2 (1=ON|0=OFF)	Output	RWCT-	[1.1] DPT_Switch	1 Bit
177	Temp.control: Status Cool. level 1 (1=ON|0=OFF)	Output	RWCT-	[1.1] DPT_Switch	1 Bit
178	Temp.control: Status Cool. level 2 (1=ON|0=OFF)	Output	RWCT-	[1.1] DPT_Switch	1 Bit
179	Temp.control: Comfort extension status	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
180	Temp.control: Comfort Extension time	Input	RWCT-	[7.5] DPT_TimePeriodSec	2 Bytes
181	Temp. Controller: Fan coil levels 0 to 3	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
182	Temp. Controller: Fan coil level 1	Output	R-CT-	[1.1] DPT_Switch	1 Bit
183	Temp. Controller: Fan coil level 2	Output	R-CT-	[1.1] DPT_Switch	1 Bit
184	Temp. Controller: Fan coil level 3	Output	R-CT-	[1.1] DPT_Switch	1 Bit
185	Temp. Controller: Fan coil auto=1 manual=0	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
191	Summer compensation: Outdoor temperature	Input	-WCT-	[9.1] DPT_Value_Temp	2 Bytes
192	Summer compensation: Target value	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
193	Summer compensation: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
201	Humidity sensor: malfunction	Output	R-CT-	[1.1] DPT_Switch	1 Bit
202	Humidity sensor: external measured value	Input	-WCT-	[9.7] DPT_Value_Humidity	2 Bytes
203	Humidity sensor: Measured value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
204	Humidity sensor: total measured value	Output	R-CT-	0	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
205	Humidity sensor: measured value min./max. query	Input	-WC--	[1.17] DPT_Trigger	1 Bit
206	Humidity sensor: minimum measured value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
207	Humidity sensor: maximum measured value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
208	Humidity sensor: measured value min./max. reset	Input	-WC--	[1.17] DPT_Trigger	1 Bit
209	Humidity thresholdV 1: Absolute value	Output/ Input	RWCT-	[9.7] DPT_Value_Humidity	2 Bytes
210	Humidity thresholdV 1: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
211	Humidity thresholdV 1: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
212	Humidity thresholdV 1: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
213	Humidity thresholdV 1: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
214	Humidity thresholdV 1: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
215	Humidity thresholdV 2: Absolute value	Output/ Input	RWCT-	[9.7] DPT_Value_Humidity	2 Bytes
216	Humidity thresholdV 2: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
217	Humidity thresholdV 2: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
218	Humidity thresholdV 2: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
219	Humidity thresholdV 2: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
220	Humidity thresholdV 2: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
221	Humidity thresholdV 3: Absolute value	Output/ Input	RWCT-	[9.7] DPT_Value_Humidity	2 Bytes
222	Humidity thresholdV 3: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
223	Humidity thresholdV 3: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
224	Humidity thresholdV 3: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
225	Humidity thresholdV 3: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
226	Humidity thresholdV 3: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
227	Humidity thresholdV 4: Absolute value	Output/ Input	RWCT-	[9.7] DPT_Value_Humidity	2 Bytes
228	Humidity thresholdV 4: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
229	Humidity thresholdV 4: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
230	Humidity thresholdV 4: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
231	Humidity thresholdV 4: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
232	Humidity thresholdV 4: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
241	Dew point: Measurement	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
242	Cooling medium temp.: Threshold value	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
243	Cooling medium temp.: Actual value	Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
244	Cooling medium temp.: Offset change (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
245	Cooling medium temp.: Offset current	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
246	Cooling medium temp.: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
247	Cooling medium temp.: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
248	Cooling medium temp.: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
249	Cooling medium temp.: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
251	Absolute humidity [g/kg]	Output	R-CT-	[14.5] DPT_Value_Amplitude	4 Bytes
252	Absolute humidity [g/m³]	Output	R-CT-	[14.17] DPT_Value_Density	4 Bytes
254	Ambient climate status: 1=comfortable|0=uncomfort.	Output	R-CT-	[1.1] DPT_Switch	1 Bit
255	Ambient climate status: Text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
261	Humidity control: Block (1: blocking)	Input	-WC--	[1.2] DPT_Bool	1 Bit
262	Humidity control: Target value	Output/ Input	RWCT-	[9.7] DPT_Value_Humidity	2 Bytes
263	Humidity control: Target value (1:+ | 0:-)	Input	-WC--	[1.2] DPT_Bool	1 Bit
264	Humidity control: Act. variable dehumidification	Output	R-CT-	[5.1] DPT_Scaling	1 Byte

No.	Text	Function	Flags	DPT Type	Size
265	Humidity control: Act. variable dehumid. 2nd stage	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
266	Humidity control: Act. variable humidification	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
267	Humidity control: Status dehumidif. (1:ON | 0:OFF)	Output	R-CT-	[1.1] DPT_Switch	1 Bit
268	Humidity control: Status dehumidif.2 (1:ON|0:OFF)	Output	R-CT-	[1.1] DPT_Switch	1 Bit
269	Humidity control: Status humidif. (1:ON | 0:OFF)	Output	R-CT-	[1.1] DPT_Switch	1 Bit
281	CO2 sensor: malfunction	Output	R-CT-	[1.1] DPT_Switch	1 Bit
282	CO2 sensor: Measured valu external	Input	-WCT-	[9.8] DPT_Value_AirQuality	2 Bytes
283	CO2 sensor: Measured value	Output	R-CT-	[9.8] DPT_Value_AirQuality	2 Bytes
284	CO2 sensor: Measured value total	Output	R-CT-	[9.8] DPT_Value_AirQuality	2 Bytes
285	CO2 sensor: Measured value Max. query	Input	-WC--	[1.17] DPT_Trigger	1 Bit
286	CO2 sensor: Maximum measured value	Output	R-CT-	[9.8] DPT_Value_AirQuality	2 Bytes
287	CO2 sensor: Measured value Max. reset	Input	-WC--	[1.17] DPT_Trigger	1 Bit
288	CO2 threshold value 1: Absolute value	Output/ Input	RWCT-	[9.8] DPT_Value_AirQuality	2 Bytes
289	CO2 threshold value 1: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
290	CO2 threshold value 1: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
291	CO2 threshold value 1: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
292	CO2 threshold value 1: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
293	CO2 threshold value 1: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
294	CO2 threshold value 2: Absolute value	Output/ Input	RWCT-	[9.8] DPT_Value_AirQuality	2 Bytes
295	CO2 threshold value 2: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
296	CO2 threshold value 2: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
297	CO2 threshold value 2: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
298	CO2 threshold value 2: Switching output	Output	R-CT--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
299	CO2 threshold value 2: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
300	CO2 threshold value 3: Absolute value	Output/ Input	RWCT-	[9.8] DPT_Value_AirQuality	2 Bytes
301	CO2 threshold value 3: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
302	CO2 threshold value 3: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
303	CO2 threshold value 3: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
304	CO2 threshold value 3: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
305	CO2 threshold value 3: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
306	CO2 threshold value 4: Absolute value	Output/ Input	RWCT-	[9.8] DPT_Value_AirQuality	2 Bytes
307	CO2 threshold value 4: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
308	CO2 threshold value 4: Delay from 0 to 1	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
309	CO2 threshold value 4: Delay from 1 to 0	Input	-WC--	[7.5] DPT_TimePeriodSec	2 Bytes
310	CO2 threshold value 4: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
311	CO2 threshold value 4: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
312	CO2 controller: Block (1: block)	Input	-WC--	[1.2] DPT_Bool	1 Bit
313	CO2 control: Target value	Output/ Input	RWCT-	[9.8] DPT_Value_AirQuality	2 Bytes
314	CO2 control: Target value (1:+ | 0:-)	Input	-WC--	[1.2] DPT_Bool	1 Bit
315	CO2 control: Actuating variable ventilation	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
316	CO2 control: Act. variable ventilation 2.stage	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
317	CO2 contr.: Status vent. (1=ON | 0=OFF)	Output	R-CT-	[1.1] DPT_Switch	1 Bit
318	CO2 contr.: Status vent. level 2 (1=ON | 0=OFF)	Output	R-CT-	[1.1] DPT_Switch	1 Bit
331	Brightness measurement	Output	R-CT-	[9.4] DPT_Value_Lux	2 Bytes
332	Brightness correction factor	Output/ Input	RWCT-	[14.5] DPT_Value_Amplitude	4 Bytes
341	Brightness threshold value 1: Absolute value	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
342	Brightness threshold value 1: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
343	Brightness threshold value 1: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
344	Brightness threshold value 1: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
345	Brightness threshold value 1: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
346	Brightness threshold value 1: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
348	Brightness threshold value 2: Absolute value	Output/ Input	RWCT-	[9.4] DPT_Val-ue_Lux	2 Bytes
349	Brightness threshold value 2: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
350	Brightness threshold value 2: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
351	Brightness threshold value 2: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
352	Brightness threshold value 2: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
353	Brightness threshold value 2: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
355	Brightness threshold value 3: Absolute value	Output/ Input	RWCT-	[9.4] DPT_Val-ue_Lux	2 Bytes
356	Brightness threshold value 3: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
357	Brightness threshold value 3: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
358	Brightness threshold value 3: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
359	Brightness threshold value 3: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
360	Brightness threshold value 3: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit
362	Brightness threshold value 4: Absolute value	Output/ Input	RWCT-	[9.4] DPT_Val-ue_Lux	2 Bytes
363	Brightness threshold value 4: (1:+ | 0:-)	Input	-WC--	[1.1] DPT_Switch	1 Bit
364	Brightness threshold value 4: Switching delay from 0 to 1	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
365	Brightness threshold value 4: Switching delay from 1 to 0	Input	-WC--	[7.5] DPT_Time-PeriodSec	2 Bytes
366	Brightness threshold value 4: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
367	Brightness threshold value 4: Switching output block	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
371	Night: Switching output	Output	R-CT-	[1.1] DPT_Switch	1 Bit
372	Night: Switching delay to night	Input	-WC--	depending on setting	2 Bytes
373	Night: Switching delay on day	Input	-WC--	depending on setting	2 Bytes
381	Motion sensor: Test object	Output	R-CT-	[14] 14.xxx	4 Bytes
382	Motion sensor: Test object release (1 = release)	Input	-WC--	[1.1] DPT_Switch	1 Bit
385	Motion sensor: Slave: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
386	Motion sensor: Slave: Message	Output	R-CT-	[1.1] DPT_Switch	1 Bit
387	Motion sensor: Slave: Cycle reset	Input	-WC--	[5.1] DPT_Scaling	1 Byte
391	Motion sensor: Master 1: Brightn. thresh. val. On	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
392	Motion sensor: Master 1: Brightness hysteresis	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
393	Motion sensor: Master 1: Brightness waiting time	Input	RWC--	depending on setting	2 Bytes
394	Motion sensor: Master 1: Output	Output	R-CT-	[14] 14.xxx	4 Bytes
395	Motion sensor: Master 1: Switch on delay	Input	RWC--	depending on setting	2 Bytes
396	Motion sensor: Master 1: Switch off delay	Input	RWC--	depending on setting	2 Bytes
397	Motion sensor: Master 1: Slave message	Input	-WC--	[1.1] DPT_Switch	1 Bit
398	Motion sensor: Master 1: Slave cycle reset	Output	--CT-	[5.1] DPT_Scaling	1 Byte
399	Motion sensor: Master 1: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
400	Motion sensor: Master 1: Central Off	Input	-WC--	[1.1] DPT_Switch	1 Bit
401	Motion sensor: Master 2: Brightn. thresh. val. On	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
402	Motion sensor: Master 2: Brightness hysteresis	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
403	Motion sensor: Master 2: Brightness waiting time	Input	RWC--	depending on setting	2 Bytes
404	Motion sensor: Master 2: Output	Output	R-CT-	[14] 14.xxx	4 Bytes
405	Motion sensor: Master 2: Switch on delay	Input	RWC--	depending on setting	2 Bytes
406	Motion sensor: Master 2: Switch off delay	Input	RWC--	depending on setting	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
407	Motion sensor: Master 2: Slave message	Input	-WC--	[1.1] DPT_Switch	1 Bit
408	Motion sensor: Master 2: Slave cycle reset	Output	--CT-	[5.1] DPT_Scaling	1 Byte
409	Motion sensor: Master 2: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
410	Motion sensor: Master 2: Central Off	Input	-WC--	[1.1] DPT_Switch	1 Bit
411	Motion sensor: Master 3: Brightn. thresh. val. On	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
412	Motion sensor: Master 3: Brightness hysteresis	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
413	Motion sensor: Master 3: Brightness waiting time	Input	RWC--	depending on setting	2 Bytes
414	Motion sensor: Master 3: Output	Output	R-CT-	[14] 14.xxx	4 Bytes
415	Motion sensor: Master 3: Switch on delay	Input	RWC--	depending on setting	2 Bytes
416	Motion sensor: Master 3: Switch off delay	Input	RWC--	depending on setting	2 Bytes
417	Motion sensor: Master 3: Slave message	Input	-WC--	[1.1] DPT_Switch	1 Bit
418	Motion sensor: Master 3: Slave cycle reset	Output	--CT-	[5.1] DPT_Scaling	1 Byte
419	Motion sensor: Master 3: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
420	Motion sensor: Master 3: Central Off	Input	-WC--	[1.1] DPT_Switch	1 Bit
421	Motion sensor: Master 4: Brightn. thresh. val. On	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
422	Motion sensor: Master 4: Brightness hysteresis	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
423	Motion sensor: Master 4: Brightness waiting time	Input	RWC--	depending on setting	2 Bytes
424	Motion sensor: Master 4: Output	Output	R-CT-	[14] 14.xxx	4 Bytes
425	Motion sensor: Master 4: Switch on delay	Input	RWC--	depending on setting	2 Bytes
426	Motion sensor: Master 4: Switch off delay	Input	RWC--	depending on setting	2 Bytes
427	Motion sensor: Master 4: Slave message	Input	-WC--	[1.1] DPT_Switch	1 Bit
428	Motion sensor: Master 4: Slave cycle reset	Output	--CT-	[5.1] DPT_Scaling	1 Byte
429	Motion sensor: Master 4: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
430	Motion sensor: Master 4: Central Off	Input	-WC--	[1.1] DPT_Switch	1 Bit
441	Light controller: Brightness set-point value	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
442	Light controller: Stop delay	Output/ Input	RWCT-	depending on setting	2 Bytes
443	Light controller: Start/Stop (1 = Start|0 = Stop)	Input	-WC--	[1.1] DPT_Switch	1 Bit
444	Light controller: Dimming increment size	Input	RWCT-	[5.1] DPT_Scaling	1 Byte
446	Light controller: Difference actual/ target	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
447	Light controller: Reset time	Output/ Input	RWCT-	depending on setting	2 Bytes
448	Light controller: Actuating variable	Output/ Input	R-CT-	[5.1] DPT_Scaling	1 Byte
449	Light controller: Switching	Output	R-CT-	[1.1] DPT_Switch	1 Bit
450	Light controller: Dimming (from controller)	Output	R-CT-	[3.7] DPT_Control_Dimming	4 Bit
451	Light controller: Brightness in % (fixed values)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
452	Light controller: Interruption switching feedback	Input	-WC--	[1.1] DPT_Switch	1 Bit
453	Light controller: Interruption dimming feedback	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
454	Light controller: Brightness in % feedback (to controller)	Input	-WCT-	[5.1] DPT_Scaling	1 Byte
455	Light controller: Interruption waiting time	Output/ Input	RWCT-	depending on setting	2 Bytes
456	Light controller: Continuation	Input	-WC--	[1.1] DPT_Switch	1 Bit
457	Light controller: Block (1 = Blocking)	Input	-WC--	[1.1] DPT_Switch	1 Bit
461	Actuator: Status automatic or manual mode	Output	R-CT-	[1] 1.xxx	1 Bit
462	Actuator: Manual long-term	Input	RWC--	[1.8] DPT_Up-Down	1 Bit
463	Actuator: Manual short-term	Input	RWC--	[1.8] DPT_Up-Down	1 Bit
464	Actuator: Manual movement position	Input	RWC--	[5.1] DPT_Scaling	1 Byte
465	Actuator: Manual slat position	Input	RWC--	[5.1] DPT_Scaling	1 Byte
466	Actuator: Automatic mode long-term	Input	RWC--	[1.8] DPT_Up-Down	1 Bit

No.	Text	Function	Flags	DPT Type	Size
467	Actuator: Automatic mode short-term	Input	RWC--	[1.8] DPT_Up-Down	1 Bit
468	Actuator: Automatic mode movement position	Input	RWC--	[5.1] DPT_Scaling	1 Byte
469	Actuator: Automatic mode slat position	Input	RWC--	[5.1] DPT_Scaling	1 Byte
470	Actuator: Change from manual to automatic mode	Input	RWC--	[1] 1.xxx	1 Bit
471	Actuator: Automatic mode blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
472	Actuator: current movement position	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
473	Actuator: current slat position	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
474	Actuator: Status object	Output	R-CT-	[1] 1.xxx	1 Bit
475	Actuator: Approach position memory for manual	Input	RWC--	[1.1] DPT_Switch	1 Bit
476	Actuator: Learning object position memory for manual 0	Input	RWC--	[1.1] DPT_Switch	1 Bit
477	Actuator: Learning object position memory for manual 1	Input	RWC--	[1.1] DPT_Switch	1 Bit
480	Actuator: Approach position memory for automatic	Input	RWC--	[1.1] DPT_Switch	1 Bit
481	Actuator: Learning object position memory for automatic 0	Input	RWC--	[1.1] DPT_Switch	1 Bit
482	Actuator: Learning object position memory for automatic 1	Input	RWC--	[1.1] DPT_Switch	1 Bit
485	Actuator: Call up / saving scenes	Input	RWC--	[18.1] DPT_SceneControl	1 Byte
486	Actuator: Outdoor temperature blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
487	Actuator: Outdoor temperature blocking reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
488	Actuator: Outdoor temperature blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
489	Actuator: Twilight object	Input	RWC--	[1.1] DPT_Switch	1 Bit
490	Actuator: Twilight reading	Input	RWC--	[9.4] DPT_Value_Lux	2 Bytes
491	Actuator: Twilight status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
492	Actuator: Time control	Input	RWC--	[1.1] DPT_Switch	1 Bit
493	Actuator: Inside humidity release object	Input	RWC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
494	Actuator: Inside humidity release reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
495	Actuator: Inside humidity release nominal value	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
496	Actuator: Inside humidity release status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
497	Actuator: Shading object	Input	RWC--	[1.1] DPT_Switch	1 Bit
498	Actuator: Shading brightness reading 1	Input	RWC--	[9.4] DPT_Value_Lux	2 Bytes
499	Actuator: Shading brightness reading 2	Input	RWC--	[9.4] DPT_Value_Lux	2 Bytes
500	Actuator: Shading brightness reading 3	Input	RWC--	[9.4] DPT_Value_Lux	2 Bytes
501	Actuator: Shading threshold	Output/ Input	RWCT-	[9.4] DPT_Value_Lux	2 Bytes
502	Actuator: Shading threshold 1 = + | 0 = -	Input	RWC--	[1] 1.xxx	1 Bit
503	Actuator: Shading threshold +	Input	RWC--	[1] 1.xxx	1 Bit
504	Actuator: Shading threshold -	Input	RWC--	[1] 1.xxx	1 Bit
505	Actuator: Shading status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
506	Actuator: Shading position learning object	Input	RWC--	[1] 1.xxx	1 Bit
507	Actuator: Azimut	Input	RWC--	[9] 9.xxx	2 Bytes
508	Actuator: Elevation	Input	RWC--	[9] 9.xxx	2 Bytes
509	Actuator: Cold air intake blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
510	Actuator: Cold air intake external temperature reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
511	Actuator: Cold air intake blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
512	Actuator: Forced ventilation	Input	RWC--	[1.1] DPT_Switch	1 Bit
513	Actuator: Warm air intake blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
514	Actuator: Warm air intake inside temperature reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
515	Actuator: Warm air intake outside temperature reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
516	Actuator: Warm air intake blocking nominal value	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
517	Actuator: Warm air intake blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
518	Actuator: Inside temperature opening object	Input	RWC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
519	Actuator: Inside temperature opening reading	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
520	Actuator: Inside temperature opening nominal value	Input	RWC--	[9.1] DPT_Value_Temp	2 Bytes
521	Actuator: Inside temperature opening threshold	Output/ Input	RWCT-	[9.1] DPT_Value_Temp	2 Bytes
522	Actuator: Inside temperature opening threshold 1 = +	Input	RWC--	[1] 1.xxx	1 Bit
523	Actuator: Inside temperature opening threshold +	Input	RWC--	[1] 1.xxx	1 Bit
524	Actuator: Inside temperature opening threshold -	Input	RWC--	[1] 1.xxx	1 Bit
525	Actuator: Inside temperature opening status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
526	Actuator: Inside humidity opening object	Input	RWC--	[1.1] DPT_Switch	1 Bit
527	Actuator: Inside humidity opening reading	Input	RWC--	[9.7] DPT_Value_Humidity	2 Bytes
528	Actuator: Inside humidity opening status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
531	Actuator: Zero position reached	Input	RWC--	[1.1] DPT_Switch	1 Bit
533	Actuator: Master zero position status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
534	Actuator: Master zero position command	Output	R-CT-	[1.1] DPT_Switch	1 Bit
535	Actuator: Slave zero position status	Input	RWC--	[1.1] DPT_Switch	1 Bit
536	Actuator: Master zero position status	Input	RWC--	[1.1] DPT_Switch	1 Bit
537	Actuator: Master zero position command	Input	RWC--	[1.1] DPT_Switch	1 Bit
538	Actuator: Slave zero position status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
539	Actuator: Drive running	Output	R-CT-	[1] 1.xxx	1 Bit
540	Actuator: Malfunction object	Output	R-CT-	[1] 1.xxx	1 Bit
541	Actuator: Block 1 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
542	Actuator: Block 1 - Wind blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
543	Actuator: Block 1 - Wind blocking reading	Input	RWC--	[9.5] DPT_Value_Wsp	2 Bytes
544	Actuator: Block 1 - Wind blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
545	Actuator: Block 1 - Rain blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
546	Actuator: Block 2 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
547	Actuator: Block 2 - Wind blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
548	Actuator: Block 2 - Wind blocking reading	Input	RWC--	[9.5] DPT_Value_Wsp	2 Bytes
549	Actuator: Block 2 - Wind blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
550	Actuator: Block 2 - Rain blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
551	Actuator: Block 3 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
552	Actuator: Block 3 - Wind blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
553	Actuator: Block 3 - Wind blocking reading	Input	RWC--	[9.5] DPT_Value_Wsp	2 Bytes
554	Actuator: Block 3 - Wind blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
555	Actuator: Block 3 - Rain blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
556	Actuator: Block 4 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
557	Actuator: Block 4 - Wind blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
558	Actuator: Block 4 - Wind blocking reading	Input	RWC--	[9.5] DPT_Value_Wsp	2 Bytes
559	Actuator: Block 4 - Wind blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
560	Actuator: Block 4 - Rain blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
561	Actuator: Block 5 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
562	Actuator: Block 5 - Wind blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
563	Actuator: Block 5 - Wind blocking reading	Input	RWC--	[9.5] DPT_Value_Wsp	2 Bytes
564	Actuator: Block 5 - Wind blocking status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
565	Actuator: Block 5 - Rain blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
566	Actuator: Movement limitation 1 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
567	Actuator: Movement limitation 2 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
568	Actuator: Short time restriction	Input	RWC--	[1.1] DPT_Switch	1 Bit
571	Switching actuator Channel 1: Switching	Input	RWC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
572	Switching actuator Channel 1: Feedback	Output	R-CT-	[1.1] DPT_Switch	1 Bit
573	Switching actuator Channel 1: Status	readable	R-C--	[1.1] DPT_Switch	1 Bit
574	Switching actuator Channel 1: Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
576	Switching actuator Channel 1: Start staircase light function	Input	-WC--	[1.10] DPT_Start	1 Bit
577	Switching actuator Channel 1: Start/stop staircase light function	Input	RWC--	[1.10] DPT_Start	1 Bit
578	Switching actuator Channel 1: Linking	Input	RWC--	[1.2] DPT_Bool	1 Bit
579	Switching actuator Channel 1: Call up / saving scenes	Input	RWC--	[18.1] DPT_SceneControl	1 Byte
581	Switching actuator Channel 2: Switching	Input	RWC--	[1.1] DPT_Switch	1 Bit
582	Switching actuator Channel 2: Feedback	Output	R-CT-	[1.1] DPT_Switch	1 Bit
583	Switching actuator Channel 2: Status	readable	R-C--	[1.1] DPT_Switch	1 Bit
584	Switching actuator Channel 2: Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
586	Switching actuator Channel 2: Start staircase light function	Input	-WC--	[1.10] DPT_Start	1 Bit
587	Switching actuator Channel 2: Start/stop staircase light function	Input	RWC--	[1.10] DPT_Start	1 Bit
588	Switching actuator Channel 2: Linking	Input	RWC--	[1.2] DPT_Bool	1 Bit
589	Switching actuator Channel 2: Call up / saving scenes	Input	RWC--	[18.1] DPT_SceneControl	1 Byte
601	Heating actuator Channel 1: Control | Status	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
602	Heating actuator Channel 1: Auto (= 0) | Manual (= 1)	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
603	Heating actuator Channel 1: Lock (1 = Lock | 0 = Release)	Input	-WC--	[1.1] DPT_Switch	1 Bit
604	Heating actuator Channel 2: Control | Status	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
605	Heating actuator Channel 2: Auto (= 0) | Manual (= 1)	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
606	Heating actuator Channel 2: Lock (1 = Lock | 0 = Release)	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
611	Button 1 - Extended	Output/ Input	RWCT-	[1.8] DPT_Up-Down	1 Bit
612	Button 1 - Brief	Output	R-CT-	[1.8] DPT_Up-Down	1 Bit
613	Button 1 - Switching	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
614	Button 1 - Relative dimming	Output/ Input	RWCT-	[3.7] DPT_Control_Dimming	4 Bit
615	Button 1 - 8-bit encoder	Output	R-CT-	[5] 5.xxx	1 Byte
616	Button 1 - Temperature encoder	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
617	Button 1 - Brightness encoder	Output	R-CT-	[9.4] DPT_Value_Lux	2 Bytes
618	Button 1 - Scene	Output	R-CT-	[18.1] DPT_SceneControl	1 Byte
619	Button 1 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
620	Button 2 - Extended	Output/ Input	RWCT-	[1.8] DPT_Up-Down	1 Bit
621	Button 2 - Brief	Output	R-CT-	[1.8] DPT_Up-Down	1 Bit
622	Button 2 - Switching	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
623	Button 2 - Relative dimming	Output/ Input	RWCT-	[3.7] DPT_Control_Dimming	4 Bit
624	Button 2 - 8-bit encoder	Output	R-CT-	[5] 5.xxx	1 Byte
625	Button 2 - Temperature encoder	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
626	Button 2 - Brightness encoder	Output	R-CT-	[9.4] DPT_Value_Lux	2 Bytes
627	Button 2 - Scene	Output	R-CT-	[18.1] DPT_SceneControl	1 Byte
628	Button 2 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
629	Button 3 - Extended	Output/ Input	RWCT-	[1.8] DPT_Up-Down	1 Bit
630	Button 3 - Brief	Output	R-CT-	[1.8] DPT_Up-Down	1 Bit
631	Button 3 - Switching	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
632	Button 3 - Relative dimming	Output/ Input	RWCT-	[3.7] DPT_Control_Dimming	4 Bit
633	Button 3 - 8-bit encoder	Output	R-CT-	[5] 5.xxx	1 Byte

No.	Text	Function	Flags	DPT Type	Size
634	Button 3 - Temperature encoder	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
635	Button 3 - Brightness encoder	Output	R-CT-	[9.4] DPT_Value_Lux	2 Bytes
636	Button 3 - Scene	Output	R-CT-	[18.1] DPT_SceneControl	1 Byte
637	Button 3 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
638	Button 4 - Extended	Output/ Input	RWCT-	[1.8] DPT_UpDown	1 Bit
639	Button 4 - Brief	Output	R-CT-	[1.8] DPT_UpDown	1 Bit
640	Button 4 - Switching	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
641	Button 4 - Relative dimming	Output/ Input	RWCT-	[3.7] DPT_Control_Dimming	4 Bit
642	Button 4 - 8-bit encoder	Output	R-CT-	[5] 5.xxx	1 Byte
643	Button 4 - Temperature encoder	Output	R-CT-	[9.1] DPT_Value_Temp	2 Bytes
644	Button 4 - Brightness encoder	Output	R-CT-	[9.4] DPT_Value_Lux	2 Bytes
645	Button 4 - Scene	Output	R-CT-	[18.1] DPT_SceneControl	1 Byte
646	Button 4 - Blocking object	Input	RWC--	[1.1] DPT_Switch	1 Bit
651	Dali broadcast: Switch	Input	-WC--	[1.1] DPT_Switch	1 Bit
652	Dali broadcast: Dimming	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
653	Dali broadcast: Value	Input	-WC--	[5.1] DPT_Scaling	1 Byte
654	Dali broadcast: Switch status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
655	Dali broadcast: Value status	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
656	Dali broadcast: Permanent (burn in lamps)	Input	-WC--	[1.2] DPT_Bool	1 Bit
657	Dali broadcast: Force on	Input	-WC--	[1.2] DPT_Bool	1 Bit
658	Dali broadcast: Force off	Input	-WC--	[1.2] DPT_Bool	1 Bit
659	Dali broadcast: Lamp fault	Output	R-CT-	[1.2] DPT_Bool	1 Bit
660	Dali broadcast: TW Dim	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
661	Dali broadcast: TW Percent	Input	-WC--	[5.1] DPT_Scaling	1 Byte

No.	Text	Function	Flags	DPT Type	Size
662	Dali broadcast: TW Value	Input	-WC--	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
663	Dali broadcast: TW Value Status	Output	R-CT-	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
664	Dali group 0: Switch	Input	-WC--	[1.1] DPT_Switch	1 Bit
665	Dali group 0: Dimming	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
666	Dali group 0: Value	Input	-WC--	[5.1] DPT_Scaling	1 Byte
667	Dali group 0: Switch status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
668	Dali group 0: Value status	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
669	Dali group 1: Switch	Input	-WC--	[1.1] DPT_Switch	1 Bit
670	Dali group 1: Dimming	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
671	Dali group 1: Value	Input	-WC--	[5.1] DPT_Scaling	1 Byte
672	Dali group 1: Switch status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
673	Dali group 1: Value status	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
674	Dali group 2: Switch	Input	-WC--	[1.1] DPT_Switch	1 Bit
675	Dali group 2: Dimming	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
676	Dali group 2: Value	Input	-WC--	[5.1] DPT_Scaling	1 Byte
677	Dali group 2: Switch status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
678	Dali group 2: Value status	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
679	Dali group 3: Switch	Input	-WC--	[1.1] DPT_Switch	1 Bit
680	Dali group 3: Dimming	Input	-WC--	[3.7] DPT_Control_Dimming	4 Bit
681	Dali group 3: Value	Input	-WC--	[5.1] DPT_Scaling	1 Byte
682	Dali group 3: Switch status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
683	Dali group 3: Value status	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
691	Dali emergency: Command	Input	-WC--	[5.10] DPT_Value_1_Ucount	1 Byte
692	Dali emergency: Fault status	Output	R-CT-	[1.2] DPT_Bool	1 Bit

No.	Text	Function	Flags	DPT Type	Size
693	Dali emergency: Duration of last test (min)	Output	R-CT-	depending on setting	2 Bytes
694	Dali emergency: Battery charge (%)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
695	Dali emergency: Emergency status	Output	R-CT-	depending on setting	1 Byte
696	Dali emergency: Emergency mode	Output	R-CT-	depending on setting	1 Byte
697	Dali emergency: Emergency failure	Output	R-CT-	depending on setting	1 Byte
700	MP Bus device 1 Serial no. Part 1	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
701	MP Bus device 1 Serial no. Part 2	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
702	MP Bus device 1 Serial no. Part 3	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
703	MP Bus device 1 Serial no. Part 4	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
704	MP Bus Device 1 Serial no. Adopt device	Input	-WC--	[1.17] DPT_Trigger	1 Bit
705	MP Bus device 1 Adopt serial no.	Input	-WC--	[1.17] DPT_Trigger	1 Bit
706	MP bus Device 1 Serial no. Delete	Input	-WC--	[1.17] DPT_Trigger	1 Bit
707	MP bus Device 1 Serial no. Not found	Output	--CT-	[1.2] DPT_Bool	1 Bit
708	MP bus Device 1 Serial no. Device category doesn‘t match	Output	--CT-	[1.2] DPT_Bool	1 Bit
710	MP Bus device 1 Target position	Input	-WC--	[5.1] DPT_Scaling	1 Byte
711	MP Bus device 1 Actual position relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
712	MP Bus device 1 Actual position relative min/max	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
715	MP Bus device 1 Actual volume flow relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
716	MP Bus device 1 Actual volume flow absolut	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
717	MP Bus device 1 Volume flow nominal	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
718	MP Bus Device 1 Minimum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
719	MP Bus Device 1 Middle position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte

No.	Text	Function	Flags	DPT Type	Size
720	MP Bus Device 1 Maximum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
721	MP Bus device 1 Forced control Activation	Output/ Input	RWCT-	[1.3] DPT_Enable	1 Bit
722	MP Bus device 1 Forced control Open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
723	MP Bus device 1 Forced control Close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
724	MP Bus device 1 Forced control Minimum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
725	MP Bus device 1 Forced control Median	Input	-WC--	[1.17] DPT_Trigger	1 Bit
726	MP Bus device 1 Forced control Maximum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
727	MP Bus Device 1 Forced control Fast open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
728	MP Bus Device 1 Forced control Fast close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
730	MP Bus device 1 Service info Collection	Output	R-CT-	[1.2] DPT_Bool	1 Bit
731	MP Bus device 1 Service info Overstrain	Output	R-CT-	[1.2] DPT_Bool	1 Bit
732	MP Bus device 1 Service info Travel modified	Output	R-CT-	[1.2] DPT_Bool	1 Bit
733	MP Bus device 1 Service info Mechanical overload	Output	R-CT-	[1.2] DPT_Bool	1 Bit
734	MP Bus device 1 Service info Supercap malfunction	Output	R-CT-	[1.2] DPT_Bool	1 Bit
735	MP Bus device 1 Service info Gear disengaged	Output	R-CT-	[1.2] DPT_Bool	1 Bit
739	MP Bus device 1 Reset service info	Input	-WC--	[1.17] DPT_Trigger	1 Bit
740	MP Bus device 1 Start adaption	Input	-WC--	[1.17] DPT_Trigger	1 Bit
741	MP Bus device 1 Starte synchronisation	Input	-WC--	[1.17] DPT_Trigger	1 Bit
742	MP Bus device 1 Start test run	Input	-WC--	[1.17] DPT_Trigger	1 Bit
744	MP Bus Device 1 Sensor value (0/1)	Output	R-CT-	[1.6] DPT_BinaryValue	1 Bit
745	MP Bus device 1 Sensor value (%)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
746	MP Bus device 1 Sensor value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
747	MP Bus device 1 Sensor value	Output	R-CT-	[14.5] DPT_Value_Amplitude	4 Bytes
748	MP Bus device 1 Failure status	Output	R-CT-	[1.2] DPT_Bool	1 Bit
750	MP Bus device 2 Serial no. Part 1	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
751	MP Bus device 2 Serial no. Part 2	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
752	MP Bus device 2 Serial no. Part 3	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
753	MP Bus device 2 Serial no. Part 4	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
754	MP Bus Device 2 Serial no. Adopt device	Input	-WC--	[1.17] DPT_Trigger	1 Bit
755	MP Bus device 2 Adopt serial no.	Input	-WC--	[1.17] DPT_Trigger	1 Bit
756	MP bus Device 2 Serial no. Delete	Input	-WC--	[1.17] DPT_Trigger	1 Bit
757	MP bus Device 2 Serial no. Not found	Output	--CT-	[1.2] DPT_Bool	1 Bit
758	MP bus Device 2 Serial no. Device category doesn‘t match	Output	--CT-	[1.2] DPT_Bool	1 Bit
760	MP Bus device 2 Target position	Input	-WC--	[5.1] DPT_Scaling	1 Byte
761	MP Bus device 2 Actual position relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
762	MP Bus Device 2 Actual position relative min/max	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
765	MP Bus device 2 Actual volume flow relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
766	MP Bus device 2 Actual volume flow absolut	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
767	MP Bus device 2 Volume flow nominal	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
768	MP Bus Device 2 Minimum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
769	MP Bus Device 2 Middle position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
770	MP Bus Device 2 Maximum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
771	MP Bus device 2 Forced control Activation	Output/ Input	RWCT-	[1.3] DPT_Enable	1 Bit
772	MP Bus device 2 Forced control Open	Input	-WC--	[1.17] DPT_Trigger	1 Bit

No.	Text	Function	Flags	DPT Type	Size
773	MP Bus device 2 Forced control Close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
774	MP Bus device 2 Forced control Minimum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
775	MP Bus device 2 Forced control Median	Input	-WC--	[1.17] DPT_Trigger	1 Bit
776	MP Bus device 2 Forced control Maximum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
777	MP Bus Device 2 Forced control Fast open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
778	MP Bus Device 2 Forced control Fast close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
780	MP Bus device 2 Service info Collection	Output	R-CT-	[1.2] DPT_Bool	1 Bit
781	MP Bus device 2 Service info Overstrain	Output	R-CT-	[1.2] DPT_Bool	1 Bit
782	MP Bus device 2 Service info Travel modified	Output	R-CT-	[1.2] DPT_Bool	1 Bit
783	MP Bus device 2 Service info Mechanical overload	Output	R-CT-	[1.2] DPT_Bool	1 Bit
784	MP Bus device 2 Service info Supercap malfunction	Output	R-CT-	[1.2] DPT_Bool	1 Bit
785	MP Bus Device 2 Service info Gear disengaged	Output	R-CT-	[1.2] DPT_Bool	1 Bit
789	MP Bus device 2 Reset service info	Input	-WC--	[1.17] DPT_Trigger	1 Bit
790	MP Bus device 2 Start adaption	Input	-WC--	[1.17] DPT_Trigger	1 Bit
791	MP Bus device 2 Starte synchronisation	Input	-WC--	[1.17] DPT_Trigger	1 Bit
792	MP Bus device 2 Start test run	Input	-WC--	[1.17] DPT_Trigger	1 Bit
794	MP Bus Device 2 Sensor value (0/1)	Output	R-CT-	[1.6] DPT_BinaryValue	1 Bit
795	MP Bus device 2 Sensor value (%)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
796	MP Bus device 2 Sensor value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
797	MP Bus device 2 Sensor value	Output	R-CT-	[14.5] DPT_Value_Amplitude	4 Bytes
798	MP Bus device 2 Failure status	Output	R-CT-	[1.2] DPT_Bool	1 Bit
800	MP Bus device 3 Serial no. Part 1	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes

No.	Text	Function	Flags	DPT Type	Size
801	MP Bus device 3 Serial no. Part 2	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
802	MP Bus device 3 Serial no. Part 3	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
803	MP Bus device 3 Serial no. Part 4	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
804	MP Bus Device 3 Serial no. Adopt device	Input	-WC--	[1.17] DPT_Trigger	1 Bit
805	MP Bus device 3 Adopt serial no.	Input	-WC--	[1.17] DPT_Trigger	1 Bit
806	MP bus Device 3 Serial no. Delete	Input	-WC--	[1.17] DPT_Trigger	1 Bit
807	MP bus Device 3 Serial no. Not found	Output	--CT-	[1.2] DPT_Bool	1 Bit
808	MP bus Device 3 Serial no. Device category doesn‘t match	Output	--CT-	[1.2] DPT_Bool	1 Bit
810	MP Bus device 3 Target position	Input	-WC--	[5.1] DPT_Scaling	1 Byte
811	MP Bus device 3 Actual position relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
812	MP Bus Device 3 Actual position relative min/max	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
815	MP Bus device 3 Actual volume flow relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
816	MP Bus device 3 Actual volume flow absolut	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
817	MP Bus device 3 Volume flow nominal	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
818	MP Bus Device 3 Minimum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
819	MP Bus Device 3 Middle position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
820	MP Bus Device 3 Maximum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
821	MP Bus device 3 Forced control Activation	Output/ Input	RWCT-	[1.3] DPT_Enable	1 Bit
822	MP Bus device 3 Forced control Open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
823	MP Bus device 3 Forced control Close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
824	MP Bus device 3 Forced control Minimum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
825	MP Bus device 3 Forced control Median	Input	-WC--	[1.17] DPT_Trigger	1 Bit

No.	Text	Function	Flags	DPT Type	Size
826	MP Bus device 3 Forced control Maximum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
827	MP Bus Device 3 Forced control Fast open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
828	MP Bus Device 3 Forced control Fast close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
830	MP Bus device 3 Service info Collection	Output	R-CT-	[1.2] DPT_Bool	1 Bit
831	MP Bus device 3 Service info Overstrain	Output	R-CT-	[1.2] DPT_Bool	1 Bit
832	MP Bus device 3 Service info Travel modified	Output	R-CT-	[1.2] DPT_Bool	1 Bit
833	MP Bus device 3 Service info Mechanical overload	Output	R-CT-	[1.2] DPT_Bool	1 Bit
834	MP Bus device 3 Service info Supercap malfunction	Output	R-CT-	[1.2] DPT_Bool	1 Bit
835	MP Bus Device 3 Service info Gear disengaged	Output	R-CT-	[1.2] DPT_Bool	1 Bit
839	MP Bus device 3 Reset service info	Input	-WC--	[1.17] DPT_Trigger	1 Bit
840	MP Bus device 3 Start adaption	Input	-WC--	[1.17] DPT_Trigger	1 Bit
841	MP Bus device 3 Starte synchronisation	Input	-WC--	[1.17] DPT_Trigger	1 Bit
842	MP Bus device 3 Start test run	Input	-WC--	[1.17] DPT_Trigger	1 Bit
844	MP Bus Device 3 Sensor value (0/1)	Output	R-CT-	[1.6] DPT_BinaryValue	1 Bit
845	MP Bus device 3 Sensor value (%)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
846	MP Bus device 3 Sensor value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
847	MP Bus device 3 Sensor value	Output	R-CT-	[14.5] DPT_Value_Amplitude	4 Bytes
848	MP Bus device 3 Failure status	Output	R-CT-	[1.2] DPT_Bool	1 Bit
850	MP Bus device 4 Serial no. Part 1	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
851	MP Bus device 4 Serial no. Part 2	Output/ Input	RWCT-	[7.1] DPT_Value_2_Ucount	2 Bytes
852	MP Bus device 4 Serial no. Part 3	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte
853	MP Bus device 4 Serial no. Part 4	Output/ Input	RWCT-	[5.10] DPT_Value_1_Ucount	1 Byte

No.	Text	Function	Flags	DPT Type	Size
854	MP Bus Device 4 Serial no. Adopt device	Input	-WC--	[1.17] DPT_Trigger	1 Bit
855	MP Bus device 4 Adopt serial no.	Input	-WC--	[1.17] DPT_Trigger	1 Bit
856	MP bus Device 4 Serial no. Delete	Input	-WC--	[1.17] DPT_Trigger	1 Bit
857	MP bus Device 4 Serial no. Not found	Output	--CT-	[1.2] DPT_Bool	1 Bit
858	MP bus Device 4 Serial no. Device category doesn't match	Output	--CT-	[1.2] DPT_Bool	1 Bit
860	MP Bus device 4 Target position	Input	-WC--	[5.1] DPT_Scaling	1 Byte
861	MP Bus device 4 Actual position relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
862	MP Bus Device 4 Actual position relative min/max	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
865	MP Bus device 4 Actual volume flow relative	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
866	MP Bus device 4 Actual volume flow absolut	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
867	MP Bus device 4 Volume flow nominal	Output	R-CT-	[14.77] DPT_Value_Volume_Flux	4 Bytes
868	MP Bus Device 4 Minimum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
869	MP Bus Device 4 Middle position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
870	MP Bus Device 4 Maximum position relative	Output/ Input	RWCT-	[5.1] DPT_Scaling	1 Byte
871	MP Bus device 4 Forced control Activation	Output/ Input	RWCT-	[1.3] DPT_Enable	1 Bit
872	MP Bus device 4 Forced control Open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
873	MP Bus device 4 Forced control Close	Input	-WC--	[1.17] DPT_Trigger	1 Bit
874	MP Bus device 4 Forced control Minimum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
875	MP Bus device 4 Forced control Median	Input	-WC--	[1.17] DPT_Trigger	1 Bit
876	MP Bus device 4 Forced control Maximum	Input	-WC--	[1.17] DPT_Trigger	1 Bit
877	MP Bus Device 4 Forced control Fast open	Input	-WC--	[1.17] DPT_Trigger	1 Bit
878	MP Bus Device 4 Forced control Fast close	Input	-WC--	[1.17] DPT_Trigger	1 Bit

No.	Text	Function	Flags	DPT Type	Size
880	MP Bus device 4 Service info Collection	Output	R-CT-	[1.2] DPT_Bool	1 Bit
881	MP Bus device 4 Service info Overstrain	Output	R-CT-	[1.2] DPT_Bool	1 Bit
882	MP Bus device 4 Service info Travel modified	Output	R-CT-	[1.2] DPT_Bool	1 Bit
883	MP Bus device 4 Service info Mechanical overload	Output	R-CT-	[1.2] DPT_Bool	1 Bit
884	MP Bus device 4 Service info Supercap malfunction	Output	R-CT-	[1.2] DPT_Bool	1 Bit
885	MP Bus Device 4 Service info Gear disengaged	Output	R-CT-	[1.2] DPT_Bool	1 Bit
889	MP Bus device 4 Reset service info	Input	-WC--	[1.17] DPT_Trigger	1 Bit
890	MP Bus device 4 Start adaption	Input	-WC--	[1.17] DPT_Trigger	1 Bit
891	MP Bus device 4 Starte synchronisation	Input	-WC--	[1.17] DPT_Trigger	1 Bit
892	MP Bus device 4 Start test run	Input	-WC--	[1.17] DPT_Trigger	1 Bit
894	MP Bus Device 4 Sensor value (0/1)	Output	RWC--	[1.6] DPT_BinaryValue	1 Bit
895	MP Bus device 4 Sensor value (%)	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
896	MP Bus device 4 Sensor value	Output	R-CT-	[9.7] DPT_Value_Humidity	2 Bytes
897	MP Bus device 4 Sensor value	Output	R-CT-	[14.5] DPT_Value_Amplitude	4 Bytes
898	MP Bus device 4 Failure status	Output	R-CT-	[1.2] DPT_Bool	1 Bit
899	MP Bus Communication on/off	Input	-WC--	[1.3] DPT_Enable	1 Bit
901	HCL Control: Brightness	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
902	HCL Control: Colour temperature	Output	R-CT-	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
903	HCL Control: Start/stop	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
904	HCL Control: Automatic/manual status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
905	HCL Control: Automatic reset	Input	-WC--	[1.1] DPT_Switch	1 Bit
906	HCL Control: Change to Manual with Switching	Input	-WC--	[1.1] DPT_Switch	1 Bit

No.	Text	Function	Flags	DPT Type	Size
907	HCL Control: Change to Manual with Brightness	Input	-WC--	[5.1] DPT_Scaling	1 Byte
908	HCL Control: Change to Manual with Colour temperature	Input	-WC--	[7.600] DPT_Absolute_Colour_Temperature	2 Bytes
909	HCL Control: Sequence 1 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
910	HCL Control: Sequence 2 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
911	HCL Control: Sequence 3 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
912	HCL Control: Sequence 4 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
913	HCL Control: Sequence 5 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
914	HCL Control: Sequence 6 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
915	HCL Control: Sequence 7 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
916	HCL Control: Sequence 8 release	Output/ Input	RWCT-	[1.1] DPT_Switch	1 Bit
921	Actuating variable comparator 1: Input 1	Input	-WC--	[5.1] DPT_Scaling	1 Byte
922	Actuating variable comparator 1: Input 2	Input	-WC--	[5.1] DPT_Scaling	1 Byte
923	Actuating variable comparator 1: Input 3	Input	-WC--	[5.1] DPT_Scaling	1 Byte
924	Actuating variable comparator 1: Input 4	Input	-WC--	[5.1] DPT_Scaling	1 Byte
925	Actuating variable comparator 1: Input 5	Input	-WC--	[5.1] DPT_Scaling	1 Byte
926	Actuating variable comparator 1: Output	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
927	Actuating variable comparator 1: Block (1: block)	Output	-WC--	[1.2] DPT_Bool	1 Bit
928	Actuating variable comparator 2: Input 1	Input	-WC--	[5.1] DPT_Scaling	1 Byte
929	Actuating variable comparator 2: Input 2	Input	-WC--	[5.1] DPT_Scaling	1 Byte
930	Actuating variable comparator 2: Input 3	Input	-WC--	[5.1] DPT_Scaling	1 Byte
931	Actuating variable comparator 2: Input 4	Input	-WC--	[5.1] DPT_Scaling	1 Byte

No.	Text	Function	Flags	DPT Type	Size
932	Actuating variable comparator 2: Input 5	Input	-WC--	[5.1] DPT_Scaling	1 Byte
933	Actuating variable comparator 2: Output	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
934	Actuating variable comparator 2: Block (1: block)	Output	-WC--	[1.2] DPT_Bool	1 Bit
935	Actuating variable comparator 3: Input 1	Input	-WC--	[5.1] DPT_Scaling	1 Byte
936	Actuating variable comparator 3: Input 2	Input	-WC--	[5.1] DPT_Scaling	1 Byte
937	Actuating variable comparator 3: Input 3	Input	-WC--	[5.1] DPT_Scaling	1 Byte
938	Actuating variable comparator 3: Input 4	Input	-WC--	[5.1] DPT_Scaling	1 Byte
939	Actuating variable comparator 3: Input 5	Input	-WC--	[5.1] DPT_Scaling	1 Byte
940	Actuating variable comparator 3: Output	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
941	Actuating variable comparator 3: Block (1: block)	Output	-WC--	[1.2] DPT_Bool	1 Bit
942	Actuating variable comparator 4: Input 1	Input	-WC--	[5.1] DPT_Scaling	1 Byte
943	Actuating variable comparator 4: Input 2	Input	-WC--	[5.1] DPT_Scaling	1 Byte
944	Actuating variable comparator 4: Input 3	Input	-WC--	[5.1] DPT_Scaling	1 Byte
945	Actuating variable comparator 4: Input 4	Input	-WC--	[5.1] DPT_Scaling	1 Byte
946	Actuating variable comparator 4: Input 5	Input	-WC--	[5.1] DPT_Scaling	1 Byte
947	Actuating variable comparator 4: Output	Output	R-CT-	[5.1] DPT_Scaling	1 Byte
948	Actuating variable comparator 4: Block (1: block)	Output	-WC--	[1.2] DPT_Bool	1 Bit
961	Computer 1: Input I1	Input	RWCT-	depending on setting	4 Bytes
962	Computer 1: Input I2	Input	RWCT-	depending on setting	4 Bytes
963	Computer 1: Input I3	Input	RWCT-	depending on setting	4 Bytes
964	Computer 1: Output O1	Output	R-CT-	depending on setting	4 Bytes
965	Computer 1: Output O2	Output	R-CT-	depending on setting	4 Bytes

No.	Text	Function	Flags	DPT Type	Size
966	Computer 1: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
967	Computer 1: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
968	Computer 1: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
969	Computer 2: Input I1	Input	RWCT-	depending on setting	4 Bytes
970	Computer 2: Input I2	Input	RWCT-	depending on setting	4 Bytes
971	Computer 2: Input I3	Input	RWCT-	depending on setting	4 Bytes
972	Computer 2: Output O1	Output	R-CT-	depending on setting	4 Bytes
973	Computer 2: Output O2	Output	R-CT-	depending on setting	4 Bytes
974	Computer 2: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
975	Computer 2: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
976	Computer 2: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
977	Computer 3: Input I1	Input	RWCT-	depending on setting	4 Bytes
978	Computer 3: Input I2	Input	RWCT-	depending on setting	4 Bytes
979	Computer 3: Input I3	Input	RWCT-	depending on setting	4 Bytes
980	Computer 3: Output O1	Output	R-CT-	depending on setting	4 Bytes
981	Computer 3: Output O2	Output	R-CT-	depending on setting	4 Bytes
982	Computer 3: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
983	Computer 3: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
984	Computer 3: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
985	Computer 4: Input I1	Input	RWCT-	depending on setting	4 Bytes
986	Computer 4: Input I2	Input	RWCT-	depending on setting	4 Bytes
987	Computer 4: Input I3	Input	RWCT-	depending on setting	4 Bytes
988	Computer 4: Output O1	Output	R-CT-	depending on setting	4 Bytes

No.	Text	Function	Flags	DPT Type	Size
989	Computer 4: Output O2	Output	R-CT-	depending on setting	4 Bytes
990	Computer 4: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
991	Computer 4: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
992	Computer 4: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
993	Computer 5: Input I1	Input	RWCT-	depending on setting	4 Bytes
994	Computer 5: Input I2	Input	RWCT-	depending on setting	4 Bytes
995	Computer 5: Input I3	Input	RWCT-	depending on setting	4 Bytes
996	Computer 5: Output O1	Output	R-CT-	depending on setting	4 Bytes
997	Computer 5: Output O2	Output	R-CT-	depending on setting	4 Bytes
998	Computer 5: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
999	Computer 5: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
1000	Computer 5: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
1001	Computer 6: Input I1	Input	RWCT-	depending on setting	4 Bytes
1002	Computer 6: Input I2	Input	RWCT-	depending on setting	4 Bytes
1003	Computer 6: Input I3	Input	RWCT-	depending on setting	4 Bytes
1004	Computer 6: Output O1	Output	R-CT-	depending on setting	4 Bytes
1005	Computer 6: Output O2	Output	R-CT-	depending on setting	4 Bytes
1006	Computer 6: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
1007	Computer 6: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
1008	Computer 6: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
1009	Computer 7: Input I1	Input	RWCT-	depending on setting	4 Bytes
1010	Computer 7: Input I2	Input	RWCT-	depending on setting	4 Bytes
1011	Computer 7: Input I3	Input	RWCT-	depending on setting	4 Bytes

No.	Text	Function	Flags	DPT Type	Size
1012	Computer 7: Output O1	Output	R-CT-	depending on setting	4 Bytes
1013	Computer 7: Output O2	Output	R-CT-	depending on setting	4 Bytes
1014	Computer 7: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
1015	Computer 7: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
1016	Computer 7: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
1017	Computer 8: Input I1	Input	RWCT-	depending on setting	4 Bytes
1018	Computer 8: Input I2	Input	RWCT-	depending on setting	4 Bytes
1019	Computer 8: Input I3	Input	RWCT-	depending on setting	4 Bytes
1020	Computer 8: Output O1	Output	R-CT-	depending on setting	4 Bytes
1021	Computer 8: Output O2	Output	R-CT-	depending on setting	4 Bytes
1022	Computer 8: Condition text	Output	R-CT-	[16.0] DPT_String_ASCII	14 Bytes
1023	Computer 8: Monitoring status	Output	R-CT-	[1.1] DPT_Switch	1 Bit
1024	Computer 8: Block (1: block)	Input	-WC--	[1.1] DPT_Switch	1 Bit
1031	Logic input 1	Input	-WC--	[1.2] DPT_Bool	1 Bit
1032	Logic input 2	Input	-WC--	[1.2] DPT_Bool	1 Bit
1033	Logic input 3	Input	-WC--	[1.2] DPT_Bool	1 Bit
1034	Logic input 4	Input	-WC--	[1.2] DPT_Bool	1 Bit
1035	Logic input 5	Input	-WC--	[1.2] DPT_Bool	1 Bit
1036	Logic input 6	Input	-WC--	[1.2] DPT_Bool	1 Bit
1037	Logic input 7	Input	-WC--	[1.2] DPT_Bool	1 Bit
1038	Logic input 8	Input	-WC--	[1.2] DPT_Bool	1 Bit
1039	Logic input 9	Input	-WC--	[1.2] DPT_Bool	1 Bit
1040	Logic input 10	Input	-WC--	[1.2] DPT_Bool	1 Bit
1041	Logic input 11	Input	-WC--	[1.2] DPT_Bool	1 Bit
1042	Logic input 12	Input	-WC--	[1.2] DPT_Bool	1 Bit
1043	Logic input 13	Input	-WC--	[1.2] DPT_Bool	1 Bit
1044	Logic input 14	Input	-WC--	[1.2] DPT_Bool	1 Bit
1045	Logic input 15	Input	-WC--	[1.2] DPT_Bool	1 Bit
1046	Logic input 16	Input	-WC--	[1.2] DPT_Bool	1 Bit
1051	AND logic 1: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1052	AND logic 1: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte

No.	Text	Function	Flags	DPT Type	Size
1053	AND logic 1: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1054	AND logic 1: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1055	AND logic 2: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1056	AND logic 2: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1057	AND logic 2: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1058	AND logic 2: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1059	AND logic 3: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1060	AND logic 3: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1061	AND logic 3: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1062	AND logic 3: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1063	AND logic 4: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1064	AND logic 4: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1065	AND logic 4: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1066	AND logic 4: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1067	AND logic 5: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1068	AND logic 5: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1069	AND logic 5: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1070	AND logic 5: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1071	AND logic 6: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1072	AND logic 6: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1073	AND logic 6: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1074	AND logic 6: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1075	AND logic 7: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1076	AND logic 7: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1077	AND logic 7: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1078	AND logic 7: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1079	AND logic 8: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1080	AND logic 8: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1081	AND logic 8: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1082	AND logic 8: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1083	OR logic 1: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1084	OR logic 1: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1085	OR logic 1: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1086	OR logic 1: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1087	OR logic 2: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1088	OR logic 2: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1089	OR logic 2: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1090	OR logic 2: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1091	OR logic 3: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1092	OR logic 3: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte

No.	Text	Function	Flags	DPT Type	Size
1093	OR logic 3: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1094	OR logic 3: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1095	OR logic 4: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1096	OR logic 4: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1097	OR logic 4: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1098	OR logic 4: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1099	OR logic 5: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1100	OR logic 5: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1101	OR logic 5: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1102	OR logic 5: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1103	OR logic 6: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1104	OR logic 6: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1105	OR logic 6: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1106	OR logic 6: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1107	OR logic 7: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1108	OR logic 7: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1109	OR logic 7: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1110	OR logic 7: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1111	OR logic 8: 1 bit switching output	Output	R-CT-	[1.2] DPT_Bool	1 Bit
1112	OR logic 8: 8 bit output A	Output	R-CT-	[5] 5.xxx	1 Byte
1113	OR logic 8: 8 bit output B	Output	R-CT-	[5] 5.xxx	1 Byte
1114	OR logic 8: Block	Input	-WC--	[1.1] DPT_Switch	1 Bit
1120	Call up/saving scenes	Output/ Input	RWCTU	[18.1] DPT_SceneCon-trol	1 Byte
1121	Scene object 1	Output/ Input	RWCT-	depending on setting	4 Bytes
1122	Scene object 2	Output/ Input	RWCT-	depending on setting	4 Bytes
1123	Scene object 3	Output/ Input	RWCT-	depending on setting	4 Bytes
1124	Scene object 4	Output/ Input	RWCT-	depending on setting	4 Bytes
1125	Scene object 5	Output/ Input	RWCT-	depending on setting	4 Bytes
1126	Scene object 6	Output/ Input	RWCT-	depending on setting	4 Bytes
1127	Scene object 7	Output/ Input	RWCT-	depending on setting	4 Bytes
1128	Scene object 8	Output/ Input	RWCT-	depending on setting	4 Bytes

No.	Text	Function	Flags	DPT Type	Size
1129	Scene object 9	Output/ Input	RWCT-	depending on setting	4 Bytes
1130	Scene object 10	Output/ Input	RWCT-	depending on setting	4 Bytes
1131	Scene object 11	Output/ Input	RWCT-	depending on setting	4 Bytes
1132	Scene object 12	Output/ Input	RWCT-	depending on setting	4 Bytes
1133	Scene object 13	Output/ Input	RWCT-	depending on setting	4 Bytes
1134	Scene object 14	Output/ Input	RWCT-	depending on setting	4 Bytes
1135	Scene object 15	Output/ Input	RWCT-	depending on setting	4 Bytes
1136	Scene object 16	Output/ Input	RWCT-	depending on setting	4 Bytes

3.5. Setting the parameters and functions

3.5.1. Behaviour on power failure/ restoration of power

Behaviour following a failure of the bus power supply:

The device sends nothing.

Behaviour on bus restoration of power and following programming or reset:

The device sends all outputs according to their send behaviour set in the parameters with the delays established in the "General settings" parameter block.

3.5.2. General settings

Set the basic properties of the data transfer. A different transmission delay prevents an overload of the bus shortly after the reset.

In addition set whether the time and date are to be received as separate objects or as one common object. If time and date are received via two objects , then a maximum of 10 seconds only may elapse between receiving the date and receiving the time. Furthermore, a change of date may not occur between receiving both objects. The objects must be received by the device on the same day.

Transmission delay in seconds after reset/restoration of bus for:	
Readings	5...300

Threshold values and switching outputs	5...300
Controller objects	5...300
Comparator and computer objects	5...300
Logic and scene objects	5...300
Actuator and interface objects	5...300
Menu objects	5...300
Dali objects	5
Belimo objects	5...300
Object type date and time	• two separate objects • one common object
Maximum message rate	1 • 2 • 5 • 10 • 20 • 50 Messages per second

3.5.3. Cala settings

The start page, screen saver, brightness and language can be set for the screen display of the Cala connected to the **Room Controller KNX MultiController TWIN**. Display settings can be modified via objects or in the ETS menu.

Object control

For the settings via objects, i.e. via the bus, objects 57-64 are available. Activate the object controls as desired.

Use Cala objects	No • Yes
Object values after reset for:	
Screensaver On/Off (*if Cala objects are used*)	0 • 1
Screen saver illumination On/Off (*if Cala objects are used*)	0 • 1

Start page

Set the start page and whether or when the parameters are retained. Do not use the setting "after power restoration and programming" for first commissioning.

Menu start page	• Sensor system • Temperature controller • Light • Drive • Colour temperature
The following parameters should	• not be retained • after power restoration • after power restoration and Programming

Set which menus you would like to use. The menu of the start page set above is always used.

Sensor system	No • Yes
Temperature control	No • Yes
Light	No • Yes
Drive	No • Yes
Colour temperature	No • Yes

Adjust the wait time for the screen saver and for jumping back to the start page.

Screen saver wait time in seconds	1...2700; 300
No touch wait time in seconds for switch to start page	1...2700; 60

Adjust the language and display brightness You may choose between German and English as display languages.

Language	• German [de] object value: 25701 •• English [en] object value: 25966
Brightness in %	1...100

Sensor technology / Temperature controller / Light / Drive / Colour temperature

The corresponding menus will appear if they have been activated for use above.

Enter a name here.

Name	[Free text max. 14 characters]

In the Temperature control menu, you can set whether you want to use the fan coil control. The fan coil control enables the fan of convector heating/cooling systems to be controlled. You can only use the fan coil control on the Cala if it is also **KNX Multi-Controller TWIN**activated on the Cala (see *Temperature control*, pag76).

Use fan coil control	No • Yes

3.5.4. Use fan coil control

Select whether to send an **malfunction object** if the sensor is defective.

Use malfunction object	No • Yes

If a Cala and a Sewi are connected, enter the percentage of the two temperature values here.

Measured value source	
Cala share in %	0…100; 50
Sewi share = 100% - Cala share	

Use **Offsets** to adjust the readings to be sent.

Offset in 0.1°C	-50…50; 0

The unit can calculate a **mixed value** from its own reading and an external value. Set the mixed value calculation if desired. If an external portion is used, all of the following settings (threshold values, etc.) are related to the overall measured value!

Use external measured value	No • Yes
Ext. Measured value portion of the total reading	5% • 10% • ... • 50% • ... • 100%
Send behaviour for internal and total measured value	• not • periodically • on change • on change and periodically
On change of *(if sent on change)*	0,1°C • 0,2°C • 0,5°C • ... • 5.0°C
Send cycle *(if sent periodically)*	5 s • 10 s • ... • 2 h

The **minimum and maximum readings** can be saved and sent to the bus. The "Reset temperature min/max value" objects can be used to reset the values to the current measured values. The values are not retained after a reset.

Use minimum and maximum value	No • Yes

3.5.5. Temperature threshold values

Activate the required temperature threshold values. The menus for the further setting of the threshold values are then displayed.

Use threshold value 1/2/3/4	Yes • No

Threshold value 1, 2, 3, 4

Threshold value

Decide in which cases **threshold values and delay times** received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
received by the communication object should be retained	• not • after restoration of power • after power restoration and programming
.	

Set the threshold values directly in the application program using parameters, or define them via the bus using a communication object.

Threshold value setpoint using parameter:

Set the threshold values and hysteresis directly.

Threshold value setpoint using	**Parameter** • Communication objects
Threshold in 0.1°C	-300 ... 800; 200

Threshold value setpoint using a communication object:

Beforehand, enter how the threshold value will be received from the bus. Basically, a new value can be received, or simply a command to increase or decrease.

During initial commissioning, a threshold value must be defined which will be valid until the first call with a new threshold value. For units which have already been taken into service, the last communicated threshold value can be used. Basically, a temperature range is given in which the threshold value can be changed (object value limit).

A set threshold value will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

Threshold value setpoint using	Parameter • **Communication objects**
Start threshold value in 0.1°C valid until first communication	-300 ... 800; 200
Object value limit (min) in 0.1°C	-300…800
Object value limit (max) in 0.1°C	-300…800
Type of threshold value change	Absolute value • Increase/decrease
Interval *(upon increase/decrease change)*	0.1°C • ... • 5°C

Set the **hysteresis** independently of the type of threshold value setting.

Hysteresis setting	in % • absolute
Hystereis in 0.1°	0...1100; 50
Hysteresis in % of the threshold value	0 ... 50; 20

Switching output

Set the behaviour of the switching output when a threshold value is exceeded/undercut. The output switching delay can be set using objects or directly as a parameter.

When the following conditions apply, the output is (TV = Threshold value)	• TV above = 1 | TV - Hyst. below = 0 • TV above = 0 | TV - Hyst. below = 1 • TV below = 1 |TV + hysteresis above = 0 • TV below = 0 |TV + hysteresis above = 1
Delays can be set via objects (in seconds)	No • Yes

Switching delay from 0 to 1 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching delay from 1 to 0 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(is sent only if "periodically" is selected)*	5 s • 10 s • 30 s... • 2 h

Block

The switching output can be blocked using an object.

Use switching output block	No • Yes

If the block is activated, specify the behaviour of the output during the block here.

Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first communication	0 • 1
Switching output behaviour	
On blocking	• Do not send message • 0 send • 1 send
On release (with 2 seconds release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	• Do not send message • Send switching output status
Switching output sends on change to 1	• Do not send message • if switching output = 1 ➔ send 1
Switching output sends on change to 0	• Do not send message • if switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	if switching output = 1 ➔ send 1
Switching output sends on change to 0 and periodically	if switching output = 0 ➔ send 0

3.5.6. Temperature control

Activate the controllers you want to use.

Use controller	No • Yes

General rules

Decide in which cases **nominal values and delay times** received per object are to be kept. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
are	• not be retained • after power restoration • after power restoration and programming
.	

For an adequate regulation of the indoor temperature, comfort, standby, eco and building protection modes may be used.
Comfort when present,
Standby when absent,
Eco as a night-time mode and
Frost / heat protection (building protection) e.g. when the window is open.

The settings for the temperature control include the set point temperatures for the individual modes. Objects are used to determine which mode is to be selected. A change of mode may be triggered manually or automatically (e.g. by a timer, window contact).

The **mode** may be switched with two 8 bit objects of different priority. Objects
„... HVAC mode (Prio 2)“ for switching in everyday operation and
„... HVAC mode (Prio 1)“ for central switching with higher priority.
The objects are coded as follows:
0 = Auto
1 = Comfort
2 = Standby
3 = Eco
4 = Building protection

Alternatively, you can use three objects, with one object switching between eco and standby mode and the two others are used to activate comfort mode or frost/heat protection mode. The comfort object then blocks the eco/standby object, and frost/heat protection objects have the highest priority. Objects
„... Mode (1: Eco, 0: Standby)“,
„... comfort activation mode" and
„... frost/heat protection activation mode"

Switch mode via	• two 8-bit objects (HVAC modes) • three 1-bit objects

Select the **mode to be activated after reset** (e.g. power failure, reset of the line via the bus). (Default).
Then configure a temperature control **block** using the blocking object.

Mode after reset	• Comfort • Standby • Eco • Building protection
Behaviour of the blocking object with value	• 1 = Block | 0 = release • 0 = block | 1 = release
Value of the blocking object after reset	0 • 1

Specify when the current **control variables** are to be **sent** to the bus. Periodic transmission is safer if a message does not reach a recipient. You may also set up periodical monitoring by the actuator with this setting.

Send control variable	• If there is a change • on change and periodically
from change of (in % absolute)	1...10; 2
Cycle *(if sent periodically)*	5 s • ... • 10 s • ... • 2 h

The **status object** reports the current status of the output (0% = OFF, >0% = ON) and may for example be used for visualisation, or to switch off the heating pump as soon as the heating is switched off.

Send status objects	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(if sent periodically)*	5 s • ... • 10 s • ... • 2 h

Then define the **type of setting**. Heating and/or cooling may be controlled in two stages.

Type of control	• Single stage heating • Dual-stage heating • Single-stage cooling • Single-stage heating + single-stage cooling • Dual-stage heating + single-stage cooling • Dual-stage heating + dual-stage cooling

General set point values

You may enter separate set point values for each mode or use the comfort set point as a basic value.
If you are using the controls for both heating *and* cooling, you may also select the setting "separately with switching object". Systems used for cooling in the summer and for heating in the winter can thus be switched from one to the other.
If you are using the basic value, only the deviation from the comfort set point value is listed for the other modes (e. g., 2°C less for standby mode).

Keep modified set points after mode change	No • Yes
Setting the nominal values	• with separate nominal values with switching object • with separate nominal values without switching object • with comfort set point as a basis with switching object • with comfort set point as a basis without switching object
Behaviour of the switching object at value *(With switching object)*	• 0 = Heating | 1 = Cooling • 1 = Heating | 0 = Cooling
Value of the switching object after reset *(With switching object)*	0 • 1

The **grades** for the setpoint changes is predefined. Whether the change only remains active temporarily (do not store) or remains stored even after a voltage recovery (and programming) is specified in the first section of "General rules". This also applies to a comfort extension.

Grading for set point changes (in 0.1 °C)	1... 50; 5

Aus dem Eco-Modus, also Nachtbetrieb, kann der Regler über die Komfortverlängerung auf Komfortbetrieb geschaltet werden. This means that the comfort setpoint can be maintained for longer if, for example, guests are present. The duration of this comfort extension period is set. After the comfort extension period is terminated, the system returns to eco mode.

Comfort extension time in seconds (can only be activated from eco mode)	1...36000; 3600

Set point Comfort

Comfort mode is usually used for daytime mode when people are present. A starting value is defined for the comfort set point as well as a temperature range in which the nominal value may be modified.

Initial heating/cooling set point (in 0.1 °C) valid until first communication *(not upon saving the setpoint value after programming)*	-300…800; 210

If set point values are entered separately:

Min. object value heating/cooling (in 0.1 °C)	-300…800; 160
Max. object value heating/cooling (in 0.1 °C)	-300…800; 280

If the comfort set point value is used as a basis:

If the comfort setpoint is used as the basis, the increase/reduction of this value is indicated.

Minimum base set point (in 0.1°C)	-300…800; 160
Maximum base set point (in 0.1°C)	-300…800; 280
Reduction by up to (in 0.1°C)	1…100; 30
Increase by up to (in 0.1°C)	1…100; 30

If the comfort setpoint is used as the basis without a changeover object, a dead zone is specified for the "heating *and* cooling" control mode so that there is no direct changeover from heating to cooling.

Dead zone between heating and cooling *(only if both heating AND cooling are used)*	1…100; 50

Set point for standby

Standby mode is usually used for daytime mode when people are absent.

If set point values are entered separately:

A starting setpoint value is defined as well as a temperature range in which the setpoint value may be changed.

Heating initial setpoint (in 0.1 °C) valid until first communication	-300…800; 180
Cooling initial setpoint (in 0.1 °C) valid until first communication	-300…800; 240
Min. object value heating/cooling (in 0.1 °C)	-300…800; 160
Max. object value heating/cooling (in 0.1 °C)	-300…800; 280

If the comfort set point value is used as a basis:

If the comfort setpoint is used as the basis, the increase/reduction of this value is indicated.

Reduce heating setpoint (in 0.1°C) *(for heating)*	0…200; 30
Increase cooling setpoint (in 0.1°C) *(for cooling)*	0…200; 30

Eco set point

Eco mode is usually used for night mode.

If set point values are entered separately:

A starting setpoint value is defined as well as a temperature range in which the setpoint value may be changed.

Heating initial setpoint (in 0.1 °C) valid until first communication	-300…800; 160
Cooling initial setpoint (in 0.1 °C) valid until first communication	-300…800; 280
Min. object value heating/cooling (in 0.1 °C)	-300…800; 160
Max. object value heating/cooling (in 0.1 °C)	-300…800; 280

If the comfort set point value is used as a basis:

If the comfort setpoint is used as the basis, the increase/reduction of this value is indicated.

Reduce heating setpoint (in 0.1°C) *(for heating)*	0…200; 50
Increase cooling setpoint (in 0.1°C) *(for cooling)*	0…200; 60

Set point values for frost/heat protection (building protection)

The building protection mode is used, for example, as long as windows are open for ventilation. Set points for frost protection (heating) and heat protection (cooling) are determined which may not be modified from outside (no access via operating devices etc.). The building protection mode may be activated with delay, which allows you to leave the building before the controls switch to frost/heat protection mode.

Nominal value frost protection\r\n(in 0,1°C)	-300…800; 70
Activation delay	no • 5 s • ... • 5 min • ... • 2 h
Nominal value heat protection (in 0,1°C)	-300…800; 350

Activation delay	no • 5 s • ... • 5 min • ... • 2 h

General variables

This setting appears for the control types "Heating *and* cooling" only. This is where you can decide whether to use a common variable for heating and cooling. If the 2nd level has a common variable, this is also where you determine the control mode of the 2nd level.

For heating and cooling	• separate variables are used • common variables are used for Level 1 • common variables are used for Level 2 • common variables are used for Level 1+2
Use variable for 4/6-way valve *(only with common variable at stage 1)*	No • Yes
Control type *(for Level 2 only)*	• 2-point control • PI control
Regulating variable of the 2nd Stage is on *(only for level 2 with 2-point control)*	• 1-bit object • 8-bit object

When using the variable for a 4/6 way valve:
0%...100% heating = 66%...100% variable
OFF = 50% variable
0%...100% cooling = 33%...0% variable

Heating control level 1/2

If a heating control mode is configured, one or two setting sections for the heating levels are displayed.

In the first level, heating is controlled by a PI controller which allows to either enter control parameters or select predetermined applications.

In the second level (therefore only in case of 2-stage heating), heating is controlled via a PI or a 2-point-control.
In stage 2, the setpoint deviation between the two stages must also be specified, i.e. beyond which setpoint undershoot the second stage is then added.

Setpoint difference between levels 1 and 2 stages (in 0.1°C) *(For level 2)*	0...100; 40
Control type *(at stage 2, no common variables)*	• 2-point control • PI control
Control variable is a *(for stage 2 with 2-point control, no common variables)*	• 1-bit object • 8-bit object

PI controller with control parameters:

This setting allows individual input of the parameters for PI control.

Control type	• **PI control**
Setting of the controller by	• **Controller parameter** • specified applications

Specify the deviation from the setpoint value at which the maximum control variable value is reached, i.e. the point at which maximum heating power is activated.
The reset time shows how quickly the controller responds to deviations from the setpoint. In case of a short reset time, the control responds with a fast increase of the control variable. In case of a long reset time, the control responds somewhat less urgently and needs longer until the necessary control variable for the setpoint deviation is reached.
You should set the time appropriate to the heating system at this point (observe manufacturer's instructions).

Maximum control variable is reached at set point/actual difference of (in °C)	0...5
Reset time (in min.)	1...255; 30

Now specify what should be sent when the control is blocked. Set a value greater 0 (=OFF) to receive a basic heating level, e.g. for floor heating.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *(only if a value is sent)*	0...100

In case of a common control variable for heating and cooling, 0 is always transmitted as a fixed value.

PI control with predetermined application:

This setting provides fixed parameters for frequent applications.

Control type	• **PI control**
Setting of the controller by	• Controller parameter • **specified applications**
Application	• Warm water heating • Floor heating • Convection unit • Electric heating
Maximum control variable is reached at set point/actual difference of (in °C)	Warm water heating: 5 Floor heating: 5 Convection unit: 4 Electric heating: 4

Reset time (in min.)	Warm water heating: 150 Floor heating: 240 Convection unit: 90 Electric heating: 100

Now specify what should be sent when the control is blocked. Set a value greater 0 (=OFF) to receive a basic heating level, e.g. for floor heating.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *(only if a value is sent)*	0...100

In case of a common control variable for heating and cooling, 0 is always transmitted as a fixed value.

2-point-control (only stage 2):

2-point-control is used for systems which are only set to ON or OFF.

Control type *(is determined at a higher level for common variables)*	• **2-point-control**

Enter the hysteresis that prevents frequent on/off switching of temperatures in the threshold range.

Hysteresis (in 0.1°C)	0...100; 20

If separate variables are used, select whether the variable of the 2nd level is a 1-bit object (on/off) or an 8-bit object (on with percentage value/off).

Control variable is a	• 1-bit object • 8-bit object
Value (in %) *(for 8-bit object)*	0...100

Now specify what should be sent when the control is blocked. Set a value greater 0 (=OFF) to receive a basic heating level, e.g. for floor heating. On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *only if a value is sent*	0...100

Cooling control level 1/2

If a cooling control mode is configured, one or two setting sections for the cooling levels are displayed.

In the first stage, cooling is controlled by a PI controller in which either control parameters or predetermined applications can be selected.

In the second Level (therefore only ifor 2-stage cooling), cooling is controlled via a PI or a 2-point-control.
In level 2, the setpoint deviation between the two levels must also be specified, i.e. beyond which setpoint value undershoot the second level is then added.

Setpoint difference between levels 1 and 2 levels (in 0.1°C) *(For level 2)*	0...100; 40
Control type *(at level 2, no common variables)*	• 2-point control • PI control
Control variable is a *(for level 2 with 2-point control, no common variables)*	• 1-bit object • 8-bit object

PI controller with control parameters:

This setting allows individual input of the parameters for PI control.

Control type	**• PI control**
Setting of the controller by	**• Controller parameter** • specified applications

Specify the deviation from the set point value which reaches maximum variable value, i.e. the point at which maximum cooling power is activated.
The reset time shows how quickly the controller responds to deviations from the setpoint. In case of a short reset time, the control responds with a fast increase of the control variable. In case of a long reset time, the control responds somewhat less urgently and needs longer until the necessary control variable for the setpoint deviation is reached. You should set the time appropriate to the cooling system at this point (observe manufacturer's instructions).

Maximum control variable is reached at set point/actual difference of (in °C)	0...5
Reset time (in min.)	1...255; 30

Now specify what should be sent when the control is blocked.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *(only if a value is sent)*	0...100

In case of a common control variable for heating and cooling, 0 is always transmitted as a fixed value.

PI control with predetermined application:

This setting provides fixed parameters for a cooling ceiling

Control type	**• PI control**
Setting of the controller by	• Controller parameter **• specified applications**

Application	• Cooling ceiling
Maximum control variable is reached at set point/actual difference of (in °C)	Cooling ceiling: 5
Reset time (in min.)	Cooling ceiling: 30

Now specify what should be sent when the control is blocked.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *(only if a value is sent)*	0...100

2-point-control (only level 2):

2-point-control is used for systems which are only set to ON or OFF.

Control type *is determined at a higher level for common variables*	• **2-point-control**

Enter the hysteresis that prevents frequent on/off switching of temperatures in the threshold range.

Hysteresis (in 0.1°C)	0...100; 20

If separate variables are used, select whether the variable of the 2nd level is a 1-bit object (on/off) or an 8-bit object (on with percentage value/off).

Control variable is a	• 1-bit object • 8-bit object
Value (in %) *(for 8-bit object)*	0...100

Now specify what should be sent when the control is blocked.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not be sent • send a specific value
Value (in %) *(only if a value is sent)*	0...100

In case of a common control variable for heating and cooling, 0 is always transmitted as a fixed value.

Fan coil control

The fan coil control enables the fan of convector heating/cooling systems to be controlled.

Activate the fan coil control.

Use fan coil control	No • **Yes**

With fan coil control, the blower is automatically controlled by one or, in the case of multi-level systems, by several control variables for heating or cooling. Select which variable(s) are to control the output. The selection depends on the type of heating/cooling control and the settings made for the variables.

Output is controlled via actuating variable	• Heating 1 • Heating 2 • Cooling 1 • Cooling 2 • Heating 1 and cooling 1 • Heating 2 and cooling 1 • Heating 1 and cooling 2 • Heating 2 and cooling 2

Select whether the first fan stage should be switched on when the second and the third stages are on, and if the second fan stage should be switched on if the third stage is on.

Switch stage 1 on also if stages 2 and 3 are running	No • Yes
Switch stage 2 on if stage 3 is running	No • Yes

Set which mode should be active after a reset.

Mode after reset	• Manual Automation (like controller actuating variable)

3.5.7. Summer Compensation

With the summer compensation the target value for the room temperature can automatically be adapted by cooling at higher outdoor temperatures. The objective is to prevent a too great a difference between indoor and outdoor temperature in order to keep the energy consumption low.

Activate the summer compensation.

Use summer compensation	No • **Yes**

Using the points 1 and 2, define the outdoor temperature range in which the target value for the indoor temperature is to be adapted linearly. Then, specify which indoor temperature target values are to be valid below point1 and above point 2.

Standard values according to DIN EN 60529

Point 1: External temperature = 20°, Target value = 20°C.
Point 2: External temperature = 32°, Target value = 26°C.

Characteristic curve description:	
External temperature point 1 (in 0.1°C increments)	0 ... 500 ; 200

Outdoor temperature point 2 (in 0.1°C increments)	0 ... 500 ; 320
below point 1 the target value is (in 0.1°C)	0 ... 500 ; 200
above point 2 the target value is (in 0.1°C)	0 ... 500 ; 260

Set the send pattern for the summer compensation.

Send pattern	• periodically • on change • on change and periodically
on change of *(if sent on change)*	0.1°C • 0.2°C • 0.5°C • 1°C • 2°C • 5°C
Send cycle *(if sent periodically)*	5 s ... 2 h; 1 min

If necessary, activate the block for the summer compensation and set what a 1 or 0 at the block input means and what happens in the event of a block.

Use block	No • Yes
Analysis of the blocking object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first call	0 • 1
Action when locking	• do not send • Send value
Value (in increments of 0.1°C) *(if a value is sent during blocking)*	0 ... 500; 200

3.5.8. Humidity measurement

Select whether to send an **interference object** if the sensor is defective.

Use malfunction object	No • Yes

If a Cala and a Sewi are connected, enter the percentage of the two humidity values here.

Measured value source	
Cala share in %	0…100; 50
Sewi share = 100% - Cala share	

Use **Offsets** to adjust the readings to be sent.

Offset in 0.1% RH	-100…100; 0

The unit can calculate a **mixed value** from its own reading and an external value. Set the mixed value calculation if desired. If an external portion is used, all of the following settings (threshold values, etc.) are related to the overall measured value!

Use external measured value	No • Yes
Ext. Measured value portion of the total reading	5% • 10% • ... • 50% • ... • 100%
Send behaviour for internal and total measured value	• not • periodically • on change • on change and periodically
On change of *(if sent on change)*	0.1% RH • 0.2% RH • 0.5% RH • 1.0% RH • ... • 20.0% RH
Send cycle *(if sent periodically)*	5 s • 10 s • ... • 2 h

The **minimum and maximum readings** can be saved and sent to the bus. The "Reset humidity min/max value" objects can be used to reset the values to the current measured values. The values are not retained after a reset.

Use minimum and maximum value	No • Yes

3.5.9. Humidity threshold values

Activate the required humidity threshold values. The menus for the further setting of the threshold values are then displayed.

Use threshold value 1/2/3/4	Yes • No

Threshold value 1, 2, 3, 4

Threshold value

Decide in which cases **threshold values and delay times** received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
received by the communication object should be retained	• not • after restoration of power • after power restoration and programming
.	

Set the threshold values directly in the application program using parameters, or define them via the bus using a communication object.

Threshold value setpoint using parameter:

Set the threshold values and hysteresis directly.

Threshold value setpoint using	**Parameter** • Communication objects
Threshold value in 0.1% RH	1 ... 1000; 650

Threshold value setpoint using a communication object:

Beforehand, enter how the threshold value will be received from the bus. Basically, a new value can be received, or simply a command to increase or decrease.

During initial commissioning, a threshold value must be defined which will be valid until the first call with a new threshold value. For units which have already been taken into service, the last communicated threshold value can be used. Basically, a humidity range is given in which the threshold value can be changed (object value limit).

A set threshold value will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

Threshold value setpoint using	Parameter • **Communication objects**
Start value in 0.1% RH valid until first communication	1 ... 1000; 650
Object value limit (min.) in 0.1% RH	1...1000
Object value limit (max.) in 0.1% RH	1...1000
Type of threshold value change	Absolute value • Increase/decrease
Interval *(upon increase/decrease change)*	0.1% RH • ... • 2.0% rh • ... • 20.0% RH

Set the **hysteresis** independently of the type of threshold value setting.

Hysteresis setting	in % • absolute
HysteresIS in 0.1% RH	0...1000; 100
Hysteresis in % (relative to threshold value)	0 ... 50; 20

Switching output

Set the behaviour of the switching output when a threshold value is exceeded/undercut. The output switching delay can be set using objects or directly as a parameter.

When the following conditions apply, the output is (TV = Threshold value)	• TV above = 1 | TV - Hyst. below = 0 • TV above = 0 | TV - Hyst. below = 1 • TV below = 1 |TV + hysteresis above = 0 • TV below = 0 |TV + hysteresis above = 1
Delays can be set via objects (in seconds)	No • Yes

Switching delay from 0 to 1 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching delay from 1 to 0 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(is sent only if "periodically" is selected)*	5 s • 10 s • 30 s... • 2 h

Block

The switching output can be blocked using an object.

Use switching output block	No • Yes

If the block is activated, specify the behaviour of the output during the block here.

Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first communication	0 • 1
Switching output behaviour	
On blocking	• Do not send message • 0 send • 1 send
On release (with 2 second release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	• Do not send message • Send switching output status
Switching output sends on change to 1	• Do not send message • if switching output = 1 ➔ send 1
Switching output sends on change to 0	• Do not send message • if switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	if switching output = 1 ➔ send 1
Switching output sends on change to 0 and periodically	if switching output = 0 ➔ send 0

3.5.10.Dewpoint measurement

The **Room Controller KNX MultiController TWIN** calculates the dewpoint and outputs the value to the bus.

Send behaviour	• not • periodically • on change • on change and periodically
On change of *(if sent on change)*	0.1°C • 0.2°C • 0.5°C • 1.0°C • 2.0°C • 5.0°C
Send cycle *(if sent periodically)*	5 s • 10 s • 30 s • 1 min • ... • 2 h

Activate coolant temperature monitoring if required. The menu for further monitoring settings is then displayed.

Use coolant temperature monitoring	No • Yes

Coolant temp. monitoring

A threshold value can be set for the coolant temperature based on the current dewpoint (offset/deviation). The switching output of the coolant temperature monitoring system can provide a warning prior to any build-up of condensation in the system, and/or activate appropriate countermeasures.

Threshold value

Threshold value = dewpoint+ offset

Set the cases in which **offsets** received are to be kept per object. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The setpoint received by communication object	
Offset should be	• not • after restoration of power • after power restoration and programming
.	

During initial commissioning, an **offset** must be defined which will be valid until the first call with a new offset. For units which have already been taken into service, the last communicated offset can be used.

A set offset will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

Start offset in °C valid until first call	0...200; 30
Increment for offset change	0.1°C • 0.2°C • 0.3°C • 0.4°C • 0.5°C • 1°C • 2°C • 3°C • 4°C • 5°C
Hysteresis setting	in % • absolute
Hysteresis of the threshold value in % *(for setting in %)*	0 ... 50; 20
Threshold value hysteresis in 0.1°C increments *(with absolute setting)*	0 ... 1000; 50
Threshold value does	• not send • periodically • on change • on change and periodically
On change of *(if sent on change)*	0.1°C • 0.2°C • 0.5°C • 1.0°C • 2.0°C • 5.0°C
Send cycle *(if sent periodically)*	5 s • 10 s • 30 s • 1 min • ... • 2 h

Switching output

The output switching delay can be set using objects or directly as a parameter.

When the following conditions apply, the output is (TV = Threshold value)	• TV above = 1 | TV - Hyst. below = 0 • TV above = 0 | TV - Hyst. below = 1 • TV below = 1 |TV + hysteresis above = 0 • TV below = 0 |TV + hysteresis above = 1
Delays can be set via objects (in seconds)	No • Yes
Switching delay from 0 to 1 *for setting via object: valid up to the 1st object Communication*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching delay from 1 to 0 *for setting via object: valid up to the 1st object communication*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Send cycle *(is sent only if "periodically" is selected)*	5 s • 10 s • 30 s... • 2 h

Blocking

The switching output can be blocked using an object. Define specifications here for the behaviour of the output when blocked.

Use switching output block	No • Yes
Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first communication	0 • 1
Action when locking	• Do not send message • 0 send • 1 send
Action upon release (with 2 seconds release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	• Do not send message • Send switching output status
Switching output sends on change to 1	• Do not send message • if switching output = 1 ➔ send 1
Switching output sends on change to 0	• Do not send message • if switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	if switching output = 1 ➔ send 1
Switching output sends on change to 0 and periodically	if switching output = 0 ➔ send 0

3.5.11.Absolute humidity

The absolute humidity value for the air is determined from the **KNX MultiController TWIN** and can be output to the bus.

Use measurements	No • Yes

Send behaviour	• not • periodically • on change • on change and periodically
On change of *(if sent on change)*	0.1 g • 0.2 g • 0.5 g • 1.0 g • 2.0 g • 5.0 g
Send cycle *(if sent periodically)*	5 sec • 10 sec • 30 sec… • 2 hrs

3.5.12.Comfort field

The **Room Controller KNX MultiController TWIN** can send a message to the bus if the limits of the comfort field are exceeded. In this way, it is for example possible to monitor compliance with DIN 1946 (standard values) or even to define your own comfort field.

Use comfort field	No • Yes

Enter the **send behaviour**, a **text** for comfortable and uncomfortable and how the **Object value** should be.

Send behaviour	• not • periodically • on change • on change and periodically
Text for comfortable	[Free text max. 14 characters]
Text for uncomfortable	[Free text max. 14 characters]
Object value is at	• comfortable = 1 | uncomfortable = 0 comfortable = 0 | uncomfortable = 1
Send cycle *(if sent periodically)*	5 sec • 10 sec • 30 sec… • 2 hrs

Define the comfort field by setting minimum and maximum values for temperature and humidity. The set standard values correspond to DIN 1946.

Maximum temperature in °C (Standard 26°C)	25 ... 40; 26
Minimum temperature in °C (Standard 20°C)	10 ... 21; 20
Maximum relative humidity in % *(*Standard 65%)	52 ... 90; 65
Minimum relative humidity in % (Standard 30%)	10 ... 43; 30
Maximum absolute humidity in 0.1 g/kg (Standard 115 g/kg)	50 ... 200; 115

Temperature hysteresis: 1°C
Relative humidity hysteresis: 2% RH
Absolute humidity hysteresis: 2 g/kg

3.5.13.Humidity PI control

If you activate humidity control, you can use the following settings to define control type, setpoints, and humidification and dehumidification.

Use Humidity control	No • Yes

General control

Room Controller KNX MultiController TWIN can be used to control one- or two-stage dehumidification or combined humidification/dehumidification.

Type of control	• One-stage dehumidification • Two-stage dehumidification • One-stage dehumidification + One-stage humidification

Configure a block for the humidity control using the blocking object.

Behaviour of the blocking object with value	• 1 = Block | 0 = release • 0 = block | 1 = release
Value of the blocking object after reset	0 • 1

Specify when the current control variables are to be sent to the bus. Periodic transmission is safer if a message does not reach a recipient. You may also set up periodic monitoring using an actuator with this setting.

Send control variable	• on change • on change and periodically
from change (in % absolute)	1 • ... • 20; 2
Cycle (*is only sent if periodically is selected)*	5 s • ... • 10 s • ... • 2 h

The status object shows the current status of the output variable (0 = OFF, >0 = ON) and can for example be used for visualisation.

Send status objects	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle (*is only sent if periodically is selected)*	5 s • ... • 10 s • ... • 2 h

Controller setpoint

Set the cases in which **setpoints** received are to be kept per object. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The setpoint received by communication object	
is to be retained	• not • after restoration of power • after power restoration and programming
.	

During initial commissioning, a **set point value** must be defined which will be valid until the 1st Communication of a new setpoint value. For units which have already been taken into service, the last communicated setpoint value can be used. Basically, an air humidity range is given in which the setpoint value can be changed (**object value limit**).

Enter how the setpoint value will be received from the bus in advance. A new value can be received, or simply a command to increase or decrease.

A set setpoint value will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

Start setpoint in % valid until first communication *(not upon saving the setpoint value after programming)*	0 ... 100; 50
Object value limit (min.)\r\n in %	0…100; 30
Object value limit (max.)\r\n in %	0…100; 70
Type of setpoint change	Absolute value • Increase/decrease
Interval *(upon increase/decrease change)*	1% • 2% • 5% • 10%

In the "Humidification and dehumidification" control mode, a dead zone is specified so that a direct chageover from humidification to dehumidification can be avoided.

Dead zone between humidification and dehumidification in % *(only if both humidification and dehumidification are used)*	0…50; 10

Humidification starts when the relative air humidity is below or equal to the setpoint - dead zone value.

Dehumidification and/or humidification

Depending on the control mode, settings sections for humidification and dehumidification will appear (stages 1/2).

For two-stage dehumidification, the setpoint difference between the two stages must be defined, i.e. at which setpoint undercut the second stage is then added.

Setpoint difference between levels 1 and 2 in % *(for Level 2 only)*	0...50; 10

Determine the deviation from the setpoint at which the maximum variable value is reached, i.e. the point at which maximum output is used.
The reset time shows how quickly the controller responds to deviations from the setpoint. In case of a short reset time, the control responds with a fast increase of the con-

trol variable. In case of a long reset time, the control responds somewhat less urgently and needs longer until the necessary control variable for the setpoint deviation is reached.
You should set the time appropriate for the humidification/dehumidification system at this point (note manufacturer instructions).

Maximum control variable is reached at target/actual difference of %	1...50; 5
Reset time in minutes	1...255; 3

Now specify what should be sent when the control is blocked.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not send anything • send a value
Value in % (*only if a value is sent)*	0...100

3.5.14. CO_2 Measured value

Select whether to send an **interference object** if the sensor is defective.

Use malfunction object	No • Yes

Use **Offsets** to adjust the readings to be sent.

Offset in ppm	-100…100; 0

The unit can calculate a **mixed value** from its own reading and an external value. Set the mixed value calculation if desired. If an external portion is used, all of the following settings (threshold values, etc.) are related to the overall measured value!

Use external measured value	No • Yes
Ext. Measured value portion of the total reading	5% • 10% • ... • 50% • ... • 100%
Send behaviour for internal and total measured value	• not • periodically • on change • on change and periodically
On change of (relative to the last measured value) *(if sent on change)*	2% • 5% • ... • 50%
Send cycle *(if sent periodically)*	5 s • 10 s • ... • 2 h

The **maximum measured value** can be saved and sent to the bus. With the objects "Reset CO2 maximum value" the value can be reset to the current measured value. The values are not retained after a reset.

Use maximum value	No • Yes

3.5.15.CO_2 threshold values

Activate the required CO_2 threshold values. The menus for the further setting of the threshold values are then displayed.

Use threshold value 1/2/3/4	Yes • No

300 ppm ... 1000 ppm: fresh air
1000 ppm ... 2000 ppm: stale air

1000 ppm = 0.1 %

Threshold value 1, 2, 3, 4

Threshold value

Decide in which cases **threshold values and delay times** received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
received by the communication object should be retained	• not • after restoration of power • after power restoration and programming
.	

Set the threshold values directly in the application program using parameters, or define them via the bus using a communication object.

Threshold value setpoint using parameter:

Set the threshold values and hysteresis directly.

Threshold value setpoint using	**Parameter** • Communication objects
Threshold value in ppm	0 ... 2000; 1200

Threshold value setpoint using a communication object:

Beforehand, enter how the threshold value will be received from the bus. Basically, a new value can be received, or simply a command to increase or decrease.

During initial commissioning, a threshold value must be defined which will be valid until the first call with a new threshold value. For units which have already been taken into service, the last communicated threshold value can be used. Basically, a range is given in which the threshold value can be changed (object value limit).

A set threshold value will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

Threshold value setpoint using	Parameter • **Communication objects**
Start threshold value in ppm valid until first communication	0 ... 2000; 1200
Limitation of object value (min) in ppm	1...2000
Limitation of object value (max) in ppm	1...2000; 1000
Type of threshold value change	Absolute value • Increase/decrease
Step size in ppm *(upon increase/decrease change)*	1 • 2 • 5 • 10 • 20 • ... • 200

Set the **hysteresis** independently of the type of threshold value setting.

Hysteresis setting	in % • absolute
Hysteresis in ppm	0...2000; 500
Hysteresis in % of the threshold value	0 ... 50; 20

Switching output

Set the behaviour of the switching output when a threshold value is exceeded/undercut. The output switching delay can be set using objects or directly as a parameter.

When the following conditions apply, the output is (TV = Threshold value)	• TV above = 1 | TV - Hyst. below = 0 • TV above = 0 | TV - Hyst. below = 1 • TV below = 1 |TV + hysteresis above = 0 • TV below = 0 |TV + hysteresis above = 1
Delays can be set via objects (in seconds)	No • Yes
Switching delay from 0 to 1 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching delay from 1 to 0 *(if delay is adjustable via objects: valid until 1st communication)*	None • 1 s • 2 s • 5 s • 10 s • ... • 2 h
Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(is sent only if "periodically" is selected)*	5 s • 10 s • 30 s... • 2 h

Block

The switching output can be blocked using an object.

Use switching output block	No • Yes

If the block is activated, specify the behaviour of the output during the block here.

Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first communication	0 • 1
Action when locking	• Do not send message • 0 send • 1 send
Action upon release (with 2 seconds release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	• Do not send message • Send switching output status
Switching output sends on change to 1	• Do not send message • if switching output = 1 ➔ send 1
Switching output sends on change to 0	• Do not send message • if switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	if switching output = 1 ➔ send 1
Switching output sends on change to 0 and periodically	if switching output = 0 ➔ send 0

3.5.16.CO_2 PI controller

If you activate air quality control, you can use the following settings to define control type, setpoint values, and ventilation.

Use CO_2 controller	**Yes** • No

General control

The **Room Controller KNX MultiController TWIN** can be used to control one or two-stage ventilation.

Type of control	• One-stage ventilation • Two-stage ventilation

Configure a block for the ventilation control using the blocking object.

Behaviour of the blocking object with value	• 1 = Block | 0 = release • 0 = block | 1 = release
Value of the blocking object after reset	0 • 1

Specify when the current control variables are to be sent to the bus. Periodic transmission is safer if a message does not reach a recipient. You may also set up periodic monitoring using an actuator with this setting.

Send control variable	• on change • on change and periodically
at and above change of (in ppm)	1...20; 2
Cycle (*if sent periodically)*	5 s • ... • 10 s • ... • 2 h

The status object shows the current status of the output variable (0 = OFF, >0 = ON) and can for example be used for visualisation.

Send status object(s)	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle (*if sent periodically)*	5 s • 10 s • ... • 2 h

Controller setpoint

Enter how the setpoint value will be received from the bus in advance. Basically, a new value can be received, or simply a command to increase or decrease.

During initial commissioning, a set point value must be defined which will be valid until the 1st Communication of a new setpoint value. For units which have already been taken into service, the last communicated setpoint value can be used. Basically, a CO_2 range is given in which the threshold value can be changed (object value limit).

A set setpoint value will be retained until a new value or a change is transferred. The current value is saved in so that it is retained in the event of a power supply failure and will be available again once the power supply is restored.

The setpoint received by communication object	
is to be retained	• nicht • after restoration of power • after power restoration and programming
.	
Start setpoint value in ppm valid until first communication *(not upon saving the setpoint value after programming)*	400... 2000; 800
Limitation of object value (min)\r\n in ppm	400...2000; 400

Limitation of object value (max)\r\n in ppm	400…2000; 1500
Type of threshold value change	Absolute value • Increase/decrease
Step size in ppm *(upon increase/decrease change)*	1 • 2 • 5 • ... • 20 • ... • 100 • 200

Ventilation control

Depending on the control mode, one and/or two setting sections for the ventilation stages are displayed.

For two-stage ventilation, the setpoint difference between the two stages must be defined, i.e. at which setpoint undercut the second stage is then added.

Setpoint difference between levels 1 and 2 Stage in ppm *(for Level 2 only)*	100...2000; 400

Determine the deviation from the setpoint at which the maximum variable value is reached, i.e. the point at which maximum output is used.
The reset time shows how quickly the controller responds to deviations from the setpoint. In case of a short reset time, the control responds with a fast increase of the control variable. In case of a long reset time, the control responds somewhat less urgently and needs longer until the necessary control variable for the setpoint deviation is reached.
You should set the time appropriate to the ventilation system at this point (follow the manufacturer's instructions).

Maximum control variable is reached at setpoint value/actual difference of (in ppm)	100...2000
Reset time in minutes	1...255; 30

Now specify what should be sent when the control is blocked.
On release, the control variable follows the rule again.

When blocked, the control variable should	• not send anything • send a value
Value in % (*only if a value is sent)*	0...100

3.5.17.Brightness measurement value

The sensor detects the room brightness, for example for lighting control.

Set the **send behaviour** for the measured brightness.

Send behaviour	• not • periodically • on change • on change and periodically
at and above change in % *(if sent on change)*	1 ... 100; 20
Send cycle *(if sent periodically)*	5 s ... 2 h

The measured brightness value can be **corrected** to compensate for a rather dark or very bright installation location of the sensor.

Use measured value correction	No • Yes

Set the cases in which the correction factor received by the object is to be retained. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).
Then set the start correction factor.

The setpoint received by communication object	
Correction factor is	• not to be retained • after restoration of power • after power restoration and programming
.	
Start correction factor in 0.001 valid to 1st communication	1 ... 10000; 1000

Examples:
With a factor of 1.234, the parameter value is 1234.
At factor 0.789, the parameter value is 789.
At factor 1.2 and measured value 1000 lux, the transmitted value is 1200 lux.

3.5.18.Brightness threshold values

Activate the required brightness threshold values. The menus for the further setting of the threshold values are then displayed.

Threshold value1/2/3/4	No • Yes

Threshold value1/2/3/4

Set, in which cases threshold values and delay times received are to be kept per object. The parameter is only taken into consideration if the specification/ setting by object is activated further down. Please note that the setting "After power restoration and pro-

gramming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
received by the communication object should be retained	• not • after restoration of power • after power restoration and programming
.	

Select whether the threshold value is to be specified per parameter or via a communication object.

Threshold value setpoint using	Parameter • Communication objects

When the **threshold value per parameter** is specified, then the value is set.

Threshold value in kLux	1 ... 5000; 200

When the **threshold value per communication object** is specified, the starting value, object value limit and type of change to the threshold value are then set.

Start threshold value in Lux valid until first communication	1 ... 5000; 200
Object value limit (min.) in Lux	1 ... 5000
Object value limit (max.) in Lux	1 ... 5000
Type of threshold value change	Absolute value • Increase/decrease
Increment in Lux *(upon increase/decrease change)*	1 • 2 • 5 • 10 • 20 • 50 • 100 • 200 • 500 • 1000

With both of the methods for specifying the threshold values the hysteresis is set.

Hysteresis setting	in % • absolute
Hysteresis in % of the threshold value *(for setting in %)*	0 ... 100; 50
Hysteresis in Lux *(for absolute setting)*	0 ... 5000; 200

Switching output

Define which value the output transmits if the threshold value is exceeded or undercut. Set the delay for the switching and in which cases the switch output transmits.

When the following conditions apply, the output is (TV = Threshold value)	• TV above = 1 | TV - Hyst. below = 0 • TV above = 0 | TV - Hyst. below = 1 • TV below = 1 | TV + Hyst. above = 0 • Below TV = 1 | Above TV + Hyst. = 0
Delays can be set via objects (in seconds)	No • Yes
Delay from 0 to 1	none • 1 s ... 2 h
Delay from 1 to 0	none • 1 s ... 2 h

Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Cycle *(if sent periodically)*	5 s ... 2 h

Block

If necessary, activate the switching output block and set what a 1 or 0 at the block entry means and what happens in the event of a block.

Use switching output block	No • Yes
Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first communication	0 • 1
Action when locking	• Do not send message • 0 send • 1 send
Action upon release (with 2 second release delay)	[Dependent on the "Switching output sends" setting]

The behaviour of the switching output on release is dependent on the value of the parameter "Switching output sends" (see "Switching output")

Switching output sends on change	do not send message • Status object/s send/s
Switching output sends on change to 1	do not send message • if switching output = 1 ➔ send 1
Switching output sends on change to 0	do not send message •
	if switching output = 0 ➔ send 0
Switching output sends on change and periodically	Send switching output status
Switching output sends on change to 1 and periodically	if switching output = 1 ➔ send 1
Switching output sends on change to 0 and periodically	if switching output = 0 ➔ send 0

3.5.19.Night

Set whether you want to use night recognition.

Use night recognition	No • Yes

Set, in which cases **delay times** received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
Delays should	• not send • after restoration of power • after power restoration and programming
.	

Set the brightness at which the night is to be detected and the hysteresis.

Night is recognised below Lux	1 ... 1000; 10
Hysteresis in Lux	0 ... 500; 5
Delays can be set via objects (in seconds)	No • Yes
Delay by night	none • 1 s ... 2 h
Delay by day	none • 1 s ... 2 h
Switching output sends	• on change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Send cycle *(is sent only if "periodically" is selected)*	5 s ... 2 h
Object value at night	0 • 1

3.5.20.Motion detector

The motion sensor detects motion based on temperature differences. Note that the message "no movement" is only sent to the bus with a delay of approx. 5 seconds. After applying the operating voltage and after reset, approx. 15 seconds elapse before the sensor is ready for operation.

Activate the **test object** if you want to test the motion detection during commissioning.

When the test object is active, you can make settings for evaluating the enable object, the value before the first communication, and the type and value of the test object.

Use test object	No • Yes
If the test object is used:	

Release object evaluation	• • at value 1: block | at value 0: block • at value 0: release | at value 1: block
Value prior to initial communication	0 • 1
Test object type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 1 byte (0...63) scene call-up • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Test object value in motion	e.g. 0 • 1 [depending on test object type]
Test object value without motion	e.g. 0 • 1 [depending on test object type]

Select whether the motion detector should work as **master or slave**.
For a Master device, the reactions to motion detection are stored in the Master settings 1 to 4. The master controls up to four different lights, scenes, etc. and optionally also takes into account incoming motion detections from slave devices.
A slave device sends a motion signal to a master via the bus.

Mode	Slave • Master

Motion detector as slave:

Activate the slave to use it.

Use slave	No • **Yes**

When movement is detected, the device cyclically sends a 1 to the master via the bus.

Information on setting the slave transmission cycle and cycle reset can be found in the chapter *Coordinating communication between master and slave*, pag111.

Set the **transmission cycle** shorter than the switch-off delay of the master.

Transmission cycle in motion (in seconds)	1...240; 2

Set the **object type and value** for the cycle reset input of the slave the same as the slave cycle reset output of the master.

Cycle reset object type	• 1 bit • 1 byte (0%...100%)
Cycle reset at value	0 • 1 or 0...100; 1

The slave can be **blocked** via the bus.

Use block	No • **Yes**
Assessment of the block object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to initial communication	0 • 1

Master 1/2/3/4

If the device is set as master, additional settings Master 1 to 4 appear. This allows the sensor to perform four different motion detection control functions. Activate the master to use it.

Use master 1/2/3/4	No • Yes

Decide in which cases **threshold values and delay times** received are to be kept per object. The parameter is only taken into consideration if the setting by object is activated further down. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
received by the communication object should be retained	• not send • after restoration of power • after power restoration and programming
.	

Select whether motion should **always be detected or brightness dependent**.

Motion detection	always • depending on brightness

Settings for brightness-dependent motion detection:

Brightness-dependent motion detection can be used via separate switch-on and switch-off threshold values or daylight-dependent. The separate threshold values are ideal for controlling light in rooms that are only lit with artificial light. The daylight-dependent control is ideal for rooms with daylight and artificial light.

Motion detection	**Brightness-dependent**
Type of brightness dependency	• Separate values for switching on and off • Day-light dependent

For **brightness-dependent motion detection with separate switch-on and switch-off threshold values**, activate the objects for setting the threshold values as required. Then enter the switch-on and switch-off values (brightness range). The switch-on value is the value below which the room is to be illuminated during move-

ment. The switch-off value should be higher than the brightness value of the artificially illuminated room.

Type of brightness dependency	**• Separate values for switching on and off**
Threshold values adjustable via objects	No • Yes
Switch on sensor below lux	1...5000; 200
Switch off sensor below lux	1...5000; 500

For **daylight-dependent motion detection**, activate the objects for setting threshold values/hysteresis and waiting time as required. Then set the switch-on value. This is the value below which the room is to be illuminated during movement.

The switch-off value results from a brightness measurement made by the sensor after the waiting time has elapsed. Set the waiting time so that all lights are then dimmed up to final brightness. The hysteresis is added to the measured brightness value. If the room brightness later exceeds this total value because the room is further illuminated by daylight, the motion control is switched off.

Type of brightness dependency	**• Day-light dependent**
Threshold value and hysteresis adjustable via objects	No • Yes
Delays adjustable via objects	No • Yes
Switch on sensor below lux	1...5000; 200
Earliest sensor switch-off after a waiting time of seconds	0...600; 5
after motion detection and above measured brightness plus hysteresis in lux	1...5000; 200

Settings for all types of motion detection:

The following settings can be made independently of the type of motion detection, i.e. for motion detection "always" and "brightness-dependent".

Specify the **output type and value**. The different types can be used to control switchable lights (1 bit), dimmers (1 byte 0-100%), scenes (1 byte 0...63 scene call) and other functions.

Output type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 1 byte (0...63) scene call-up • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Output value in motion	e.g. 0 • 1 [depending on output type]
Output value without motion	e.g. 0 • 1 [depending on output type]
Output value when blocked	e.g. 0 • 1 [depending on output type]

Select whether delays can be set via objects and then define the **switching delays**. The **blocking time** after switching off prevents the sensor from perceiving a lamp switching off in its detection range as a temperature change and reporting it as a movement.

Delays can be set via objects (in seconds)	No • Yes
Switch-on delay (for setting via objects: valid up to the 1st communication)	0 s • 5 s • 10 s • ... 2 h *(with daylight-dependent motion detection: fixed value 0s)*
Switch-off delay (for setting via objects: valid up to the 1st communication)	0 s • 5 s • 10 s • ... 2 h
Blocking time for motion detection after switch-off delay in seconds	0...600 ; 2

Set the master output **send behaviour**.

Send behaviour	• If there is a change • on change to motion • on change to no motion • on change and periodically • on change to motion and periodically • on change to no motion and periodically
Cycle *(if sent periodically)*	1s • 5 s • ... 2 h

In addition, you can add a **slave signal**, i.e. a signal from another motion detector, to the control.

Use slave signal	No • Yes

The slave device cyclically sends a 1 to the bus as long as a movement is detected. The master receives this at the input object "Master: Slave message" and evaluates the slave message as a separate sensor message.

In addition, the master has the option of triggering a reset of the slave transmission cycle.

Information on setting the slave transmission cycle and cycle reset can be found in the chapter *Coordinating communication between master and slave*, pag111.

Set the **object type and value** for the slave cycle reset output of the master the same as the cycle reset input of the slave.

Slave cycle reset object type	• 1 bit • 1 byte (0%...100%)
Cycle reset at value	0 • 1 or 0...100; 1

The master can be **blocked** via the bus.

Use block	No • **Yes**
Assessment of the block object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to initial communication	0 • 1
Output behaviour	
when blocking	• not send anything • Send value
when releasing	• as for send behaviour • send current value immediately

Coordinating communication between master and slave

Send cycle Slave – switch-off delay Master

Set the **transmission cycle** shorter than the switch-off delay of the slave. This ensures that the master does not perform a switch-off action if the slave still detects a movement.

Cycle reset of the slave

The cycle reset of the slave is required if a master switch-off action is performed by the object "Master: Central Off" has been triggered.

If the master executes a switch-off action, it simultaneously transmits via the object "Master: Slave cycle reset" sends a message to the bus. The slave can send this message via the object "Slave: Cycle Reset" object to *immediately* send a message to the bus when motion is detected. The master receives the motion detection without having to wait for the next slave transmission cycle.

Note that the object type and value for the cycle reset input of the slave and the cycle reset output of the master must be the same.

Application example:

A person enters a corridor, the master detects this movement and switches on the corridor lighting. When leaving the corridor, this person wants to switch off the light using a push-button.

In the meantime, however, there is another person in the corridor who is only detected by a slave. This person would be in the dark and would have to wait for the next transmission cycle of the slave until the light comes on again.

To prevent this, the push-button command is given with the object "Master: Central Off" is connected. This causes the master to send a cycle reset command to the slave when the light is manually switched off. In the example, the master would switch the light on again immediately.

3.5.21.Light control

For light control, the sensor detects the brightness in the room. Enable light control

Use controller	No • Yes

Set the cases in which the **data** received per object, setpoint, setpoint/actual difference, dimming step size and times are to be retained. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first Communication, the factory settings must always be used.

The data received via object:	
Setpoint value, target-actual difference, dimming increment size and times are to be maintained	• not • after restoration of power • after power restoration and programming
.	

Set the **setpoint for room brightness**.

Target value in Lux	0...60000; 500

Define whether light control is activated **by motion and/or a start/stop object**. For control after motion, the device's internal motion detector is evaluated.

Set the object evaluation and the object value before the first communication. Define how many seconds the control continues to run after the end of the movement.

At the end of control, either "nothing" can be sent (status remains unchanged), an OFF or ON command (via the switch object activated below) or a dimming value.

Control starts at	• motion • Reception Start/stop object • Reception Start/Stop object or Motion
Control stops at	• Motion end • Reception Start/stop object • Reception Start/Stop object or Motion end
Object evaluation	• 1 = Start | 0 = Stop • 0 = Start | 1 = Stop
Object value prior to initial communication	0 • 1
Stop delay in seconds after motion end	0...1800; 120
Behaviour at stop	• send nothing • send Off command • send On command • send value
Value in % (*if value is sent*)	0...100
Send switching object	No • Yes

Set the deviation from the setpoint at which a **dimming command is to be sent**. Enter the **dimming increment size** and the **repetition cycle** for the dimming command.
Define the **feedback value** of the dimming actuator up to which a brighter or darker command is sent. This defines on the one hand the range of use of the lights and on the other no more messages are sent unnecessarily to the bus once the minimum or maximum value has been reached.

Send Dim command if	• actual value deviates by more than X % from the setpoint value : • Actual value deviates by more than X % from the setpoint value .
Target / actual difference in % *(in % for deviation)*	1...100; 20
Target/actual difference in Lux *(In lux for deviation)*	1...2500; 100
Dimming increment size	100.00% • 50.00% • 25.00% • 12.5% • 6.25% • 3.13% • 1.56%
Repetition of the dimming command in seconds	1...600; 6
Dim up to feedback value in %	1...100
Dim down up to feedback value in %	0...99

Light control can be interrupted by feedback objects from **switches or dimmers**, i.e. nothing is sent via the dimming output. This gives priority to manual light operation.

Set which objects are to be interrupted and when control is to be continued.

Use interruption	No • **Yes**
Interrupt control at	
Receipt of feedback switching object	No • Yes
Receipt of feedback dimming object	No • Yes
Continue control	• after a waiting time • on motion after waiting time • on receipt of object after waiting time • on receipt of object or after waiting time • on motion after receipt of object • on receipt of object or motion after waiting time
Waiting time in seconds	5...7200 *(default value depends on setting for "Continue control")*
Object	0 • 1 • 0 or 1

Note: If the criteria for continued control are met, but the control is currently stopped or blocked by an object, the end of the interruption has no effect on the behaviour of the light.

The light control can be **blocked** via the bus. In contrast to the interruption, a switching command or brightness value can be sent when the control is blocked. When released, the output behaviour follows the control.

Use block	No • **Yes**
Assessment of the block object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Value prior to initial communication	0 • 1
Output behaviour	
when blocking	• send nothing • send Off command • send On command • send value
Value in % (*if value is sent*)	0...100

3.5.22. Actuator

Enter the function of the actuator here.

Function	• Do not use • Blind • Shutters • Awning • Window • Double switch function

The setting options then appear:

Settings for drives (blind/roller shutter/awning/window):

- General specifications for the connected drive (see *Channel settings – Drives*, page 115)
- Control functions: Travel range limitation, locking, automatic type (see *Control (drives)*, page 117)
- Scenes: Movement position (see *Automatic - internal for shades (drives)*, page 125)
- Button inputs: Configuration as actuator push-button, bus push-button or for zero position sensor (see *Automatic - internal for shades (drives)*, page 125)

Settings for switch functions (Channel is divided into two switches 1|2):

- General specifications for the switch function (see *Channel settings – Switch functions*, page 134)
- Linking various communication objects (see *Linking (switch functions)*, page 134)
- On/off delays or time switching (see *On/off delay, time switching (switch functions)*, page 135)
- Block function (see *Blocking function (switch functions)*, page 136)
- Button input: Configuration as actuator push-button or bus push-button (see *Button input (switch function) - Input as bus button*, page 136)

Channel settings – Drives

If a drive is connected to the output channel, first set the general specifications for the drive here.

Direction of movement

Up/down, retract/extend, opening/closing can be swapped.

Swap UP/DOWN *(Shutters, roller blinds)* Swap RETRACT/EXTEND *(awning)* Swap OPEN/CLOSE *(window)*	No • Yes

Runtime:

The runtime between the end positions is the basis for approaching intermediate positions (e.g. for movement range limits and scenes). You can enter the runtime numerically (in seconds) or have the runtime determined automatically. The actuator then determines the end positions using the higher current at the drive output. For this purpose, regular reference movements (see below) should be set.

Use automatic runtime measurement	No • Yes

Runtime DOWN in s *(Shutters, roller blinds)* Runtime EXTEND in s *(awning)* Runtime OPEN in s *(window)*	1 ... 320; 60
Runtime UP in s *(Shutters, roller blinds)* Runtime RETRACT in s *(awning)* Runtime CLOSE in s *(window)*	1 ... 320; 65

If a dead time is observed while starting the curtain, then this can be entered manually at this point or calculated automatically. Obey the manufacturer's instructions for the curtain.

Use dead times	• no • yes, enter by hand • yes, calculate automatically
during the position travel from closed position in 10 ms *(only for manual input)*	0 ... 600
for position movement from all other position in 10 ms *(only for manual input)*	0 ... 600
for slat movement from closed position in 10 ms *(only for manual input)*	0 ... 600
for movement with change of direction in 10 ms *(only for manual input)*	0 ... 600
for slat movement from all other position in 10 ms *(only for manual input)*	0 ... 600

Runtime zero position and slat step setting:

(Only for shutters)
Different curtain lengths or mounting positions of the limit switches can be compensated for by the running time which the drive continues to run in the zero position (i.e. after reaching the upper end position). The shades of a facade are all completely retracted by adjusting the zero position running times and thus result in a better overall picture.
Step time x number of steps results in the turning time of the slats.

Runtime zero position in 0.1 s	0 ... 255
Step time in 10 ms	1 ... 100; 20
Number of steps slats	1 ... 255; 5

If the short time command for shutters (step command) is used only for slat adjustment, but not for positioning the curtain, the following parameter is set to "Yes". The parameter appears only for shutters.

Allow step commands only for slat adjustment	no • yes

Pause time:

The required pause times when changing the direction of the drive should be set according to the motor manufacturer's specifications.

Pause time for direction change in 0.1 s	5 ... 100; <u>10</u>

Reference movement

Running time and zero position are readjusted by the regular approach of both end positions. This is particularly important for automatic runtime determination. This is why it is possible to set the number of movements after which a reference movement is to be carried out before a position movement. The reference movement always takes place in the direction of the safe position (retract for shades, close for windows).

Complete reference movement	<u>no</u> • yes

Complete reference movement	**yes**
for more than Runs before auto.positioning run	1 ... 255; <u>10</u>

Slat turning

(Only for shutters)

Slat turning should be set in accordance with the specifications of the engine manufacturer.

Turn slats	• <u>never</u> • only after position movement • after every movement

Status object and drive position:

Status and current position can be sent to the bus. By sending 1, the status object indicates that the retracted or closed position has been left and is suitable, for example, for monitoring windows.

The exact drive position can be sent on the bus if required. The variable delay ensures that the bus is not blocked by too many data packets during a longer movement. The position can also be transmitted cyclically.

Use status object	<u>no</u> • yes
Use drive position feedback	<u>no</u> • yes
Position transmit delay after change in 0.1 s *(only for feedback)*	0...50; <u>10</u>
Transmit drive position cyclically *(only for feedback)*	<u>no</u> • 5 s • 10 s • ... • 2 h

Control (drives)

Set the behaviour of the drive here.

Motion range limit:

The motion range limit is used to prevent two devices from colliding (e.g. an awning and an opening window).

From two drives, one takes precedence and is parameterised as master, the other as slave. Zero position sensors enable both actuators to know their own current status and that of the other. This is either "in safe position" or "not in safe position". The safe position is reached when the drive is in an area where no collision is possible (this could be the case with an awning e.g.
0 to 30 % must be extended). In order to signal the safe position of the drive, a zero position sensor (e.g. end position switch or light barrier) can be connected to the inputs of the actuator, or the actuator receives the signal of its zero position sensor via the bus.

Before the drive of the master actuator is moved, the slave actuator receives the command to move its drive into the safe position. The slave drive then remains in the safe position or moves back if it is not in the safe zone.

Through the communication object "Slave zero position status", the master actuator knows whether the drive connected to the slave actuator is already in the safe position (then the master moves immediately) or not (then it waits). Only when the master actuator receives the message that the slave drive is in a safe position does it move its drive beyond its own safe position.

For example:

Ventilation through a window should have priority over shading through an awning. The window is therefore parameterised as master, the awning as slave. Both have a zero position sensor which indicates whether the drive is in a safe position or not.

Now the awning is extended and the window is to be opened. The window knows the status of the awning ("not safe position") and therefore transmits a master command to the awning, for the awning the signal to retract a bit. When the awning has reached the safe position, the zero position sensor of the awning gives a corresponding feedback. Only now does the window open.

Master and slave regularly swap their positions ("safe" or "not safe"). How often the information is queried can be set with the monitoring period. The time selected here should be shorter than the time required by the monitored drive to move from the limit of the safe area (last reported safe position) to a position where there is a risk of collision.

If a master/slave status or zero position object is not received, the drive moves to the safe position, also in the event of bus voltage failure or in the event of a fault message from the zero position sensor (valid for parameterisation as master and slave).

Set whether you want to use motion range limit.

Use motion range limit	No • Yes

Without motion range limit:

Behaviour on bus voltage restoration and after programming	• no action • Up command (or retract/close) • Down command (or extend/open)

Reference travel direction

Direction of reference travel	• In safe position • in closed position *(move out shading)* • move to open position (window) • shortest route

Block object:

The output channel can be blocked in case of rain, wind or other events. Manual operation is no longer possible. The blocks and the monitoring are configured here first. Separate menu items "Block X" then appear for setting the individual blocks (see Chapter *Type of automatic:*, pag121, *Blocking – Wind block*, pag122 and *Blocking – rain block*, pag123).
The priorities of the blocking objects correspond to the sequence listed (block 1 has the highest priority, block 5 the lowest).

Use block 1 (high priority)	• no • yes, with blocking object • yes, as wind block • yes, as rain block
Use block 2	• no • yes, with blocking object • yes, as wind block • yes, as rain block
Use block 3	• no • yes, with blocking object • yes, as wind block • yes, as rain block
Use block 4	• no • yes, with blocking object • yes, as wind block • yes, as rain block
Use block 5 (low priority)	• no • yes, with blocking object • yes, as wind block • yes, as rain block
Priority is	• Block 5 before manual • Manual before block 5
Use monitoring of the blocking objects	No • Yes
Monitoring period for blocking objects *(if blocking object monitoring is used)*	5s... • 2 h; 5 min
Behaviour if a blocking object is not received *(if blocking object monitoring is used)*	• Stop • Up command • Down command *(Shutters/roller blinds)* • Retract command • Extend command *(Awning)* • Close command • Open command *(Window)*

Use movement limit 1/2:

The movement limits are activated here, and can them be configured in their own menu items. See "Motion limits" on page 124.

Short time restriction (for shutters):

If short time restriction is active, only short time movement commands are still possible manually. If the function "Allow step commands only for shutter adjustment" is activated simultaneously, (see *Channel settings – Drives*, page 115)only the slats can still be adjusted by hand but no longer the movement position of the shutter.
The limit is active for object value 1.

Use short time limit	no • yes
Value of the object before 1st communication and bus voltage restoration *(if short time restriction is used)*	0 • 1

Automatic reset:

Manual operation deactivates the automatic operation of the drive. Here you can set when the automatic system is to be reactivated.

Manual switches to automatic after	• Expiry of a waiting period • Reception of an object • Reception of an object or expiry of waiting time
Waiting time in min. *(if "Expiry of a waiting time" has been selected)*	1...255; 20
Switch to automatic for object value *(If "Reception of an object" was selected)*	0 • 1 • 0 or 1

Automatic blocking object:

The automatic lock object can be used to deactivate the automatic function for a short time (e.g. when present or during presentations in conference rooms).
Here you can also specify the mode in which the channel will be in when the power returns, e.g. after a power failure. The mode (manual or automatic) is sent to the bus as a status object.

Use automatic blocking object	no • yes
Automatic is blocked when *(If "yes" was selected)*	0 • 1
Value of the blocking object after resumption of power *(If "yes" was selected)*	0 • 1
Operating mode after power restoration	Automatic • Manual

Sends status object	• 1 for automatic | 0 for manual • 0 for automatic | 1 for manual
Transmission delay of the status output Automatic or manual in 0.1 s	0...50

Type of automatic:

Select the type of automatic. The settings for the automatic are made in the separate menu item "Automatic - internal/external".

Type of Automatic	external automatic • internal automatic

Blocking – Blocking object

menu item appears only if a movement limit was activated in 'Control'. Here you define what happens with object values 1 and 0. A fire alarm scene, for example, can be configured via the free blocking objects (creating escape routes by retracting the shades, smoke extraction via windows). Locking out on the terrace can also be prevented by a blocking object (open window contact of the terrace door blocks the blind in front of the door).

Identification	[Block 1 ... 5] Enter an identification here!
If blocking object value = 1	• no action • Stop • Move into position • Up command • Down command *(Shutters/roller blinds)* • Retract command • Extend command *(Awning)* • Close command • Open command *(Window)*
Position in % *(only when blocking a position is being moved to)*	0...100
Slat position in % *(only with only if a position is approached with blinds when blocking)*	0...100
If blocking object value = 0	
For manual operation before and after blocking	• No action • move into last position
For automatic operation after blocking	Follow automatic
Value of the object before 1st communication and bus voltage restoration	0...1

Blocking – Wind block

The menu item only appears if a wind barrier has been configured for "Control". The "Wind block" input object is linked to the output object of a wind sensor. The input can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value).

Identification	[Wind block] Enter an identification here!
Type of input object	1 bit • 16 bit

1 bit input object:

Type of input object	**1 Bit**
If blocking object value = 1	• no action • Stop • Move into position • Up command • Down command *(Shutters/roller blinds)* • Retract command • Extend command *(Awning)* • Close command • Open command *(Window)*
Position in % *(only when blocking a position is being moved to)*	0...100
Slat position in % *(only with only if a position is approached with blinds when blocking)*	0...100
Waiting period in safe position in min after block	0...255; 5
Behaviour after waiting period	
For manual operation before and after blocking	• no action • move into last position
For automatic operation after blocking	Follow automatic

16 bit input object:

Type of input object	**16 Bit**
From wind speed in m/s block	2...30; 5
If block is active	• no action • Stop • Move into position • Up command • Down command *(Shutters/roller blinds)* • Retract command • Extend command *(Awning)* • Close command • Open command *(Window)*

Waiting period in safe position in min after block	0...255; 5
Behaviour after waiting period	
For manual operation before and after blocking	• no action • move into last position
For automatic operation after blocking	Follow automatic
Send current block status	no • yes

Blocking – rain block

The menu item only appears if a rain block has been configured for "Control". The "Rain block" input object is linked to the output object of a rain sensor.

Identification	[Rain block] Enter an identification here!
If blocking object value = 1	• No action • Stop • Approach position • Up command • Down command *(Shutters/roller blinds)* • Retract command • Extend command *(Awning)* • Close command • Open command *(Window)*
Position in % *(only when blocking a position is being moved to)*	0...100
Slat position in % *(only with only if a position is approached with blinds when blocking)*	0...100
Waiting period in safe position in min after block	0...255; 5
Behaviour after waiting period	
For manual operation before and after blocking	• no action • move into last position
For automatic operation after blocking	Follow automatic

Motion limits

The menu item appears only if a movement limit was activated in 'Control'. Movement limits can be used to restrict manual movement. The limit is active for object value 1.

Limitation type	• full • movement position • slat angle (for shutters) • Allow only UP • Allow only DOWN
Value of the object before 1st communication and bus voltage restoration	0 • 1

If limiting the movement position:

Limitation type	• movement position
Movement allowed in the position range	
from (in %)	0...100
to (in %)	0...100

If limiting the slat angle (shutters only):

Limitation type	• slat angle
Movement allowed in the angle range	
from (in %)	0...100
to (in %)	0...100

Manual

Position memory for the manual movement can be activated here. The position set here can be overwritten via a learning object at any time. The memorised position can be retrieved again at a later time.

For shutters, both the movement and the slat position can be stored.

Use position memory	no • yes

Use different positions for Object value 0 and 1	no • yes (If "yes" is selected, the position for object value 0 and for object value 1 is split)
Position in %	0...100
Call up via command sequence Long-term=1, short-term=1 allow	no • yes
Use learning object for new position	no • yes
Transfer when programming *(when learning object is used)*	• all parameters • changed parameters only

Automation – external

The 'External automation' menu item appears if the external automation is selected in 'Control'. In this case, the position memory can be activated for the automatic movement. The position set here can be overwritten via a learning object at any time. The memorised position can be retrieved again at a later time. For configuration options, see Chapter "Manual" on page 124.

Automatic - internal for shades (drives)

The "Internal automatic" menu item appears if the internal automatic is selected in "Control". The internal automatic functions take into account the brightness/sun position, outside temperature and inside temperature and also enable time and twilight control. A shading position can be preset or taught-in.

In order to make full use of the internal automatic shading system, the bus system must have information on brightness/twilight, outside and inside temperature, time and position of the sun.

Outdoor temperature block:

The "Outdoor temperature lock" input object is linked to the output object of a temperature sensor. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value).

Use outdoor temperature block	no • yes

Use outdoor temperature block	**yes**
Type of temperature input object	1 bit • 16 bit

1 bit input object:

Type of temperature input object	**1 Bit**

Shading is permitted if the bit is 0 and blocked if the bit is 1.

16 bit input object:

Type of temperature input object	**16 Bit**
Threshold in 0.1°C	-300 ... 800; 50
Hysteresis in 0.1°C	1 ... 100; 20
Send current block status	no • yes

Shading is permitted
if the measured value is greater than the threshold value + hysteresis
and disabled
if the measured value is less than or equal to the threshold value.

Use twilight/time control:

Time control is performed via a communication object. The "Twilight control" input object is linked to the output object of a brightness sensor. Both a 1 bit object (smaller or

larger than a threshold value) and a 16 bit object (measured value) can be used for twilight control.

Use twilight/time control	• no • only twilight control • only time control • both (OR linking)

Use twilight/time control	**Only twilight control / both**
Type of twilight object	1 bit • 16 bit

16 bit input object:

Type of twilight object	**16 Bit**
Twilight threshold value in kLux	1 ... 1000; 10
Switching delay	1 minute
Send current twilight status	no • yes

Inside temperature release

The "Inside temperature release" input object is linked to the output object of a temperature sensor. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value or setpoint and actual value).

Use inside temperature release	no • yes

Type of input object	1 bit • 16 bit • 16 bit setpoint/actual temperature

16 bit input object:

Type of input object	**16 Bit**
Threshold in 0.1°C	-300 ... 800; 200
Hysteresis in 0.1°C	0 ... 100; 20
Send current block status	no • yes

16-bit input object (setpoint/actual temperature):
With this function, the setpoint and actual value (measured value) are read in from the 16-bit object and evaluated.

Type of input object	**16 bit setpoint/actual temperature**
Setpoint (SP) - Actual value (MV) Difference in 0.1°C	1 ... 100; 20
Hysteresis in 0.1°C	0 ... 100; 20
Send current block status	no • yes

Shading is permitted
if the measured value is greater than or equal to setpoint+difference
and disabled
if the measured value is less than the setpoint+difference hysteresis.

Shading automatic:

Automatic shading evaluates the input objects "Brightness" and "Sun position" of a weather station. The movement position for automatic shading is also defined here.

Use shading automatic	no • yes

Brightness:

For brightness control, a 1-bit object (smaller or larger than a threshold value) as well as one, two or three 16-bit objects (measured values, e.g. east, south and west sun) can be used.16-bit input object (setpoint/actual temperature):

Type of shading input	1 x 1 bit • 1 x 16 bit • 2 x 16 bit • 3 x 16 bit

1 x 1 bit input object:
Set the shading delay times (prevents continuous opening and closing in rapidly changing lighting conditions).

Type of shading input	**1 x 1 bit**
Move up delay in min	0 ... 255; 12
Move down delay in min	0 ... 30; 1

1 x 16 bit, 2 x 16 bit or 3 x 16 Bit as input object:
The brightness threshold value may be defined via parameters or communication objects. With several brightness measured values (2 x 16 bit or 3 x 16 bit), only the maximum brightness value is compared with the threshold value.

Type of shading input	**1 x 16 bit • 2 x 16 bit • 3 x 16 bit**
Shading threshold value specification per	Parameter • Communication object

Threshold value using parameter:
Set the threshold value and the delay times for shading (prevents constant opening and closing in rapidly changing lighting conditions).

Shading threshold value specification per	**Parameter**
Shading threshold value in kLux	0 ... 100; 30
Hysteresis threshold value in	Percent (%) • in kLux
Hysteresis (in %)	0 ... 100; 10
Hysteresis (in kLux)	1 ... 120; 20
Move up delay in min	0 ... 255; 12
Move down delay in min	0 ... 30; 1
Send current shading status	No • Yes

Threshold value per communication object:
The threshold value is received via the communication object and can also be changed (e.g. push-button for "more sensitive" and "less sensitive"). Here you can also set the

delay times for shading (prevents constant opening and closing in rapidly changing lighting conditions).

Shading threshold value specification per	**Communication object**
The last communicated value should	• not send • after restoration of power • after power restoration and programming
Start threshold in kLux valid until first communication	0 ... 100; 30
type of threshold value change	• Absolute value with a 16-bit com. object • increase / decrease with one comm. object • Increase / Decrease with two comm. objects
Incrementally in kLux *(only with "Increase/decrease with com.object")*	1 ... 5; 2
Hysteresis threshold value in	Percent (%) • in kLux
Hysteresis (in %)	0 ... 100; 10
Hysteresis (in kLux)	1 ... 120; 20
Move up delay in min	0 ... 255; 12
Move down delay in min	0 ... 30; 1
Send current shading status	no • yes

Sun position:

Evaluate sun elevation	no • yes

Evaluate sun elevation	**yes**
Sun elevation is defined via	• discreet values of azimut and elevation • cardinal point (in terms of azimut and elevation)

Sun elevation definition via the values:
Enter the area (direction and height) in which the sun must be in order for the shading to be active.

Sun elevation is defined via	**Discreet value of azimut and elevation**
Azimuth from	0 ... 360
Azimuth to	0 ... 360
Elevation from	0 ... 90
Elevation to	0 ... 90

Sun elevation via cardinal points:
Enter the cardinal point in order for the shading to be active.

Sun elevation is defined via	**cardinal points (in terms of azimut and elevation)**
Cardinal point	• East (azimuth: 0° ... 180°) • South-east (azimuth: 45° ... 225°) • South (azimut: 90° ... 270°) • South-West (azimuth: 135° ... 315°) • West (azimuth: 180° ... 360°)

Slat and movement position (for blinds)

For blinds, the angle of the slats can be fixed or the slats can automatically follow the elevation. The following applies: Slats are closed at 100% and horizontal at 50%.

Should the slats follow the elevation	no • yes

The slats should **not** follow the elevation (fixed reversing angle):
Set the desired position of the slats and the curtain.

Should the slats follow the elevation	**No**
Slat position in %	0 ... 100; 75
Shutter position in %	0 ... 100; 75
Use learning object for new shading positions *(Curtain and slat position are stored, see info below)*	no • yes

Slats should follow elevation:
Three different elevation ranges can be set, for each of which a fixed curtain and slat position is defined.

Should the slats follow the elevation	**yes**
For elevation smaller (in degrees)	0 ... 90; 10
Slat position in %	0 ... 100; 95
For elevation smaller (in degrees)	0 ... 90; 30
Slat position in %	0 ... 100; 80
For elevation smaller (in degrees)	0 ... 90; 45
Slat position in %	0 ... 100; 65
For elevation smaller (in degrees)	90
Slat position in %	0 ... 100; 50
Shutter position in %	0 ... 100; 75
Use learning object for new shading positions *(Curtain position is saved, see info below)*	no • yes

Movement position (for awnings and roller shutters)

Awning position in % or Roller shutter position in %	0 ... 100; 75
Use learning object for new shading positions	no • yes

Use learning object for new shading positions: The curtain position can be preset numerically or taught in manually. To teach in, "Use learning object: Yes" is set and the "Channel X Shading position learning object" is used to save the approached position. The storage takes place with value = 1 and can, for example, be realised via a button linked to the learning object. Numeric defaults that have already been set are overwritten by the learning object.

Automatic functions for windows (drives)

The "Internal automatic" menu item appears if the internal automatic is selected in "Control". The internal automatic functions take into account the outdoor temperature, indoor temperature and room humidity settings and enable forced ventilation via a communication object.

In order to make full use of the internal automatic ventilation system, the bus system must have information on the outside and inside temperatures and interior humidity.

Cold air intake block:

The "Cold air intake block" input object is linked to the output object of a temperature sensor. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value).

Use cold air intake block	no • yes

Use cold air intake block	**yes**
Type of temperature input object	1 bit • 16 bit

1 bit input object:

Type of temperature input object	**1 Bit**

Ventilation is permitted if the bit is 0 and disabled if the bit is 1.

16 bit input object:

Type of temperature input object	**16 Bit**
Threshold in 0.1°C	-300 ... 800; 50
Hysteresis in 0.1°C	1 ... 100; 20
Send current block status	no • yes

Ventilation is permitted
if the measured value is greater than the threshold value + hysteresis
and disabled
if the measured value is less than or equal to the threshold value.

Forced ventilation:

Use forced ventilation	no • yes

When forced ventilation is active ("Use forced ventilation: Yes"), is ventilated as soon as the communication object "Forced ventilation" = 1.

Warm air intake block:

The "Warm air intake block" input object is linked to the output object of one or more temperature sensors. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value indoor/outdoor or setpoint and actual value).

Use warm air supply block	no • yes

Use warm air supply block	**yes**
Type of input object	1 bit • 16 bit • 16 bit setpoint/actual temperature

1 bit input object:

Type of input object	**1 Bit**

Ventilation is permitted if the bit is 0 and disabled if the bit is 1.

16 bit input object:

Type of input object	**16 Bit**
Threshold in 0.1°C	-100 ... 200; 50
Hysteresis in 0.1°C	1 ... 100; 20
Send current block status	no • yes

Ventilation is permitted
if the outdoor measured value is smaller than the indoor measured value+difference hysteresis
and disabled
if the external measured value is greater than or equal to the internal measured value + difference.

16-bit input object (setpoint/actual temperature):
With this function, the setpoint and actual value (measured value) are read in from the 16-bit object and evaluated.

Type of input object	**16 bit setpoint/actual temperature**
Close if outdoor temperature exceeds the setpoint value by (in 0.1?)	0...255; 50
Hysteresis in 0.1 °C	1...100; 20
Send current block status	no • yes

Ventilation is permitted
if the outdoor measured value is smaller than the setpoint value+difference-hysteresis and disabled

if the outdoor measured value is greater than or equal to the setpoint value + difference.

Open according to temperature/humidity:

Open window	• never • for too high temperature • for too high room humidity • for too high temperature or room humidity

Indoor temperature:

These parameters appear when "too high temperature" / "too high temperature or room humidity" is ventilated. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value or setpoint and actual value).

Type of temperature input object	1 bit • 16 bit • 16 bit setpoint/actual temperature

1 bit input object:

Type of temperature input object	**1 Bit**

Ventilation is activated if the bit is 0 and disabled if the bit is 1.

16 bit input object:
The threshold value can be set via parameter or communication object.

Type of temperature input object	**16 Bit**
Indoor temperature threshold value requirement per	Parameter • Communication object

Threshold value using parameter:

Indoor temperature threshold value requirement per	**Parameter**
Indoor temperature threshold value\r\nin 0.1°C	100 ... 500; 300
Hysteresis in 0.1°C	0 ... 100; 20
Send current temperature status	no • yes

Threshold value per communication object:
The threshold value is received via the communication object and can also be changed (e.g. push-button for "more sensitive" and "less sensitive").

Indoor temperature threshold value requirement per	**Communication object**
The last communicated value should	• not send • after restoration of power • after power restoration and programming

Start threshold value in 0.1°C valid until first communication	100 ... 500; 300
type of threshold value change	• Absolute value with a 16-bit com. object • increase / decrease with one comm. object • Increase / Decrease with two comm. objects
Interval *(only with "Increase/decrease with com.object")*	0.1°C ... 5°C; 1°C
Hysteresis in 0.1°C	0 ... 100; 20
Send current temperature status	no • yes

16-bit input object (setpoint/actual temperature):
With this function, the setpoint and actual value (measured value) are read in from the 16-bit object and evaluated.

Type of temperature input object	**16 bit setpoint / actual temperature**
Open if actual value exceeds the setpoint value by (in 0.1°C)	0...255; 20
Hysteresis in 0.1 °C	0...100; 20
Send current block status	no • yes

Indoor air humidity:

These parameters appear when "too high room humidity" / "too high temperature or room humidity" is ventilated. The input object can be both a 1-bit object (smaller or larger than a threshold value) and a 16-bit object (measured value).

Type of humidity input object	1 bit • 16 bit

1 bit input object:

Type of humidity input object	**1 Bit**

Ventilation is activated if the bit is 0 and disabled if the bit is 1.

16 bit input object:

Type of humidity input object	**16 Bit**
Inside humidity threshold value in %	0 ... 100; 60
Hysteresis in 0.1°C	0 ... 100; 5
Send current humidity status	no • yes

Window opening:

If the ventilation is controlled according to temperature or humidity via a 1-bit input object, enter the opening position in %.

Window opening in %	1...100

If ventilation according to temperature and humidity is controlled via 16-bit input objects, you can either set an opening position or open the windows step by step. In step mode, the temperature/humidity deviation is checked after a specified time and, if necessary, moved up/down one step further.

Window opening	absolute in % • step-wise
Window opening in % *(only if "absolute window opening in %")*	1...100
Incrementally by (in%) *(only if "window opening step-wise")*	1...100; 25
every (in minutes) *(only if "window opening step-wise")*	1...60; 3

Channel settings – Switch functions

If two switchable devices are connected to the output channel, two separate channels appear (e.g. "Channel 1 - switching function" and "Channel 2 - switching function"). First set the general settings for the connected device and, if necessary, activate logic operations, time functions and blocking objects. You will find a diagram of this in the chapter *Relationship between logic operation – timer switch – Block*, pag136.

Relay operation	Closer • Opener
Behaviour after reset and ETS download	• opened • closed
Use status object	• no • as an active feedback object • as a passive status object
Use linking function (see *Linking (switch functions)*, page 134)	no • yes
Use time function (see *On/off delay, time switching (switch functions)*, page 135)	• no • as a switch on delay • as a switch off delay • as a switch on and off delay • as a staircase time switch
Use blocking object	no • yes

Linking (switch functions)

The "Link" menu item only appears if in the settings for the switch function channel "Use linking functions: yes" is selected.

In the logic object ("Channel X link"), various communication objects can be linked with AND or OR. Z. B. a light can only be switched on if button input active AND twilight active.

Link type	AND • OR
Value of link object after restoration of bus voltage	0 • 1

On/off delay, time switching (switch functions)

The menu item only appears if the time function is selected in the settings for the switch function channel. The menu item has the same name as the selected function.

With the switch on and switch off delay, for example, a switch for ventilation device and light can be used. However, due to the switch on delay, the ventilator does not start until the light has been on for a few minutes. The switch off delay causes the ventilator to run after the switch has been pressed again and the light is already off.

The staircase light time function ensures, for example, that light is on for a while and then switches itself off.

Switch-on delay

The switch on delay is set with time base and time factor (e.g. 1 min × 4 corresponds to 4 minutes). In addition, it is determined whether the time span is extended when a switch on message is received again ("can be retriggered", e.g. by pressing the switch again) and what happens if a switch off message arrives from the bus.

Time basis	0.1 s • 1 s • 1 min • 1 h
Time factor	4...255; 10
Switch on delay is	cannot be retriggered• can be retriggered
Off message during switch on delay causes	nothing • Cancellation of the switch on delay

Switch-off delay

The switch off delay is set with time base and time factor (e.g. 1 min × 4 corresponds to 4 minutes). In addition, it is determined whether the time span is extended when a switch off message is received again ("can be retriggered", e.g. by pressing the switch again) and what happens if a switch on message arrives from the bus.

Time basis	0.1 s • 1 s • 1 min • 1 h
Time factor	4...255; 10
Switch off delay is	cannot be retriggered• can be retriggered
On message during switch on delay causes	nothing • Cancellation of the switch off delay

Staircase time switch

With staircase light timer switching, the time base and time factor are used to set how long the light remains on (e.g. 1 s × 10 corresponds to 10 seconds). In addition, it is determined whether the time span is extended when a switch on message is received again ("can be retriggered", e.g. by pressing the switch again) and what happens if a switch off message arrives from the bus.

Time basis	0.1 s • 1 s • 1 min • 1 h
Time factor	4...255; 10

Staircase light time	cannot be retriggered• can be retriggered
Off message during staircase light time causes	nothing • direct switch off

Blocking function (switch functions)

The "Block function" menu item only appears if "Use blocking object" is selected in the settings for the switch function channel: yes' is selected.

The output channel can be blocked by a blocking message. Here it is defined what happens during the block, when bus voltage is restored and after the block. Manual operation is not possible when the block is active.
The function can be used, for example, for a light that switches on when a "panic button" (= trigger for blocking function) is pressed and can no longer be switched off.

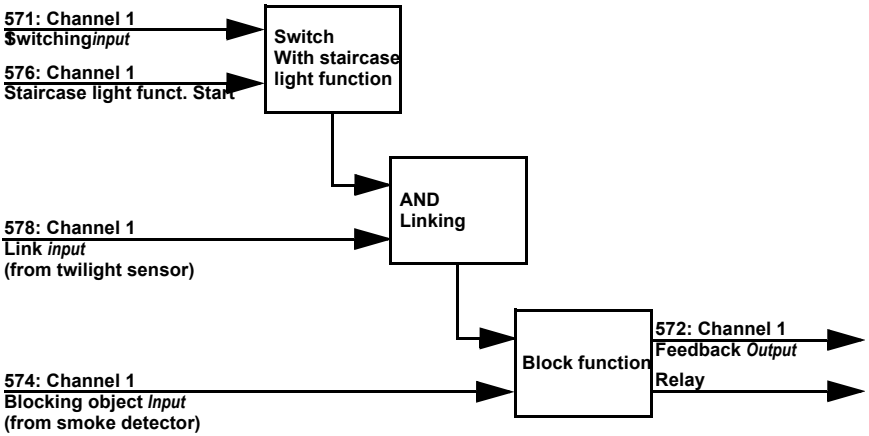
Block function blocks at	0 • 1
Blocking object value after reset and ETS download	0 • 1
Response when blocking	no change • opened • closed
Response at release	Follows the switch command • opened • closed

Button input (switch function) - Input as bus button

See *Automatic - internal for shades (drives)*, pag125.

Relationship between logic operation – timer switch – Block

Application 1: Staircase light at channel 1 that is only to be switched at twilight/night (link) and that is switched on in the event of a fire alarm (block).



When switching via the "Switch channel 1" (571) communication object, the light is switched on or off normally. When switching via the "Channel 1 Staircase lighting function Start" object (576), the staircase lighting time function is activated. The time function has priority, i.e. the status triggered by normal switching is overwritten.

3.5.23.Heating factor

Here you can set whether you use channel 1 or 2. The menus for the other settings of the channels are shown on them.

Channel 1 or 2

The menu item "Channel 1 or 2" only appears if in the settings for the heating actuator "Use channel 1 or 2: yes" is selected.

Use the channel menus to select the controls for the heating or cooling system connected to the respective output channel.

First, select the type of valve, then the valve protection interval. This is the interval after which the valve is opened and closed once to avoid jamming.

Valve type	• normally closed • normally open
Valve protection interval (days) (0=deactivated)	0…255; 14

Select the **control type** for the valve:

Control type	• via object (1 bit) • via object (8 bit ON | OFF) • via object (8 bit PWM) • via temperature controller

When controls are effected via a **1 bit object**, fixed output values are selected for 1 (On) and 0 (Off);

Value of output when object value = 1	0…100
Value of output when object value = 0	0…100

When controls are effected via an **8 bit object**, fixed output values are selected for "not 0" (On) and 0(Off);

Output value if object value is not 0	0…100
Output value if object value is 0	0…100

For controls via an **8 bit object with pulse width modulation (PWM)**, only the basic time for the pulse width modulation is set (next setting).

When controlling via **one of the internal temperature controllers**, the manipulated variable and PWM output value are selected.

Control variable	• Heating level 1 • Heating level 2 • Cooling level 1 • Cooling level 2 • common level 1 • common level 2
PWM output value (in %) If level 2 is a 1 bit object	0...100

Please note that for a reset time of less than 5 minutes, the pulse with modulation may only be modified in degrees of 5%.

For all **control types**, add the basis time for the valve pulse width modulation. The basis time determines the signal duration for 100% open, i.e. a basic time of 100 seconds refers to a signal of 30 seconds (followed by 70 seconds without a signal) 30% opening of the valve.

Valve PWM basis time in seconds	1...6000; 900
PWM output value (in %) in case of bus voltage failure	0...100

The output can also be controlled manually (allow manual operation). Configure the manual function.
The manual mode becomes active when a key is pressed on the device or respective information is received via the "Channel X: .

Allow manual operation	Yes
Object evaluation	• Auto = 0 | Manual = 1 • Auto = 1 | Manual = 0
Object value prior to 1st communication	0 • 1
Output value when On (in %)	0...100
Output value when Off (in %)	0...100
Object "Auto / Manual" sends	• not send • periodically • on change • on change and periodically
Send cycle *(for periodical transmission only)*	5 s ... 2 h; 10 s

Determine when the general channel status (e.g. ON, OFF, percentage) is to be sent.

Object "Control / Status" sends	• not send • periodically • on change • on change and periodically
Send cycle *(for periodical transmission only)*	5 s ... 2 h; 10 s

The channel may be blocked by a **blocking object** (e.g. blocking during ventilation). The output value during the block can be set.

Use block	Yes • No
Output value when blocked (in %)	0...100
Object evaluation	• 1 = Block | 0 = release • 0 = block | 1 = release
Object value prior to 1st communication	0 • 1

3.5.24.Button

Enable the push button The menus for the other settings of the push buttons are shown on them.

Use button 1	No • Yes
Use button 2	No • Yes
Use button 3	No • Yes
Use button 4	No • Yes

Push button 1 / 2 / 3 / 4

Set the function of the push button.

Function	• Switch • Selector switch • Blind • Shutters • Awning • Window • Dimmer • 8-bit encoder • Temperature encoder • Brightness encoder • Scenes

Push button as switch

Specify which value is sent when pressing/holding the push button and when.

Function	**Switch**
Command when pressing the button	• 0 send • 1 send • Do not send message
Command when releasing the button	• 0 send • 1 send • Do not send message

Send value	• If there is a change • on change to 1 • on change to 0 • on change and periodically • on change to 1 and periodically • on change to 0 and periodically
Send all readings (If *sent "periodically"*)	5 s • ... • 1 min • ... • 2 h

Push button as selector switch

Specify whether to toggle when pressing or releasing the button.

Function	**Selector switch**
Command when pressing the button	• Changeover switching • Do not send message
Command when releasing the button	• Switch • Do not send message

Push button as blind, shutter, awning or window control

Specify the push button function and the control mode.

Function	**Blind / shutters / awning / window**	
Command (button function)	Up • Down Up • Down • Up/Down Retract • Extend • Retract/Extend Open • Close • Open/ Close	(Blind) (Shutters) (Awning) (Window)
Control mode*	• Standard • Standard inverted • Comfort mode • Dead man switch	

* For additional setting details, see 📖 "Control modes for drive control" on page 142

Push button as dimmer

If the push button should be used as a dimmer, select the function "Dimmer" and define the push button function, time interval (switching/dimming) and if required, the repeat interval for extended pressing of the push button.

Function	**Dimmer**
Command	• Brighter • Darker • Lighter/Darker
Time between switching and dimming (in 0.1 s)	1 ... 50; 5
Repeat the dim command	No • Yes

Repeat the dim command with a long hold of the button	every 0.1 s • ... • every 1 s • ... • every 2 s
Dim by	100% • ... • 6% • ... • 1.5%

Push button as 8 bit encoder

If the push button is to be used as an 8-bit encoder, select the function "8-bit encoder" and define which value is to be transmitted.

Value	0... 255

Button as temperature value transmitter

If the button is to be used as a temperature value transmitter, select the "Temperature value transmitter" function and define the temperature.

Temperature in 0.1?	-300 ... 800; 200

Button as brightness encoder

If the button is to be used as a brightness value encoder, select the "Brightness value encoder" function and set the brightness.

Brightness in kLux	0 ... 100; 20

Push button as scene control

If a scene is to be recalled and saved with a push button, select the "Scenes" function and specify whether the push button should also be used to save the scene (press longer) Scene 0-63, corresponds to scene no. 1-64.

Button operation	without saving • with saving
Time between call and storage in 0.1 s (*with saving*)	1 ... 50; 20
Scene no.	0 ... 63

Use blocking object:

Activate the block if required.

Use blocking object	No • Yes

For active blocking there is no bus communication.

Control modes for drive control

Behaviour on button actuation in standard control mode:

	short:	**hold**
Blind	Stop/Step	Up or down
Shutters	Stop	Up or down
Awning	Stop	In or out
Windows	Stop	Closed or open

Standard:

Short actuation to move the drive step-wise and to stop it. Hold it longer to move the drive to the end position. The time difference between 'short' and 'long' can be adjusted individually.

Control mode	**Standard**
Behaviour when a button is operated: short = stop/step; extended = up or down	
Time between short and long in 0.1 seconds	1...50; 10

Standard inverted:

Log actuation to move the drive to end position. Short actuation to move the drive step-wise and to stop it. The time difference between 'short' and 'long', as well as the repeat interval can be customised.

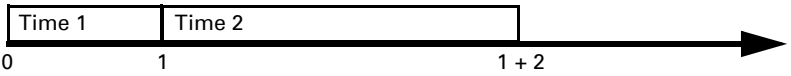
Control mode	**Standard inverted**
Behaviour when a button is operated: short = up or down, long = stop/step	
Time between short and long in 0.1 seconds	1...50; 10
Repetition of the step command on long button press	every 0.1 s... • every 2 s; every 0.5 s

Comfort mode:

In **comfort mode**, pressing the button briefly, slightly longer and longer will trigger different reactions of the drive. The time intervals are configured individually.

By briefly pressing the button (shorter than adjustable time 1), the drive is positioned (or stopped) step by step.
If the drive is to be moved a little further, press the button a little longer (longer than time 1 but shorter than time 1+2). Drive stops immediately when the button is released.
If the actuator is to move automatically to its end position, the button is not released until time 1 + 2 has elapsed. The movement can be stopped with a short tap.

Fig. 16
Comfort mode time interval scheme



Time point 0:	*Touching the button, beginning of Time 1*
Release before Time 1 runs out:	*Step (or stop if the drive is moving)*
Time point 1:	*End of Time 1, beginning of Time 2, Movement command*
Release after Time 1 runs out but before Time 2 is expired:	*Stop*
Release after Time 1+2 runs out:	*Movement to the end position*

Control mode	**Comfort mode**
Behaviour when a button is operated: Push-button is pressed and released before expiry of Time 1 = stop/step held for longer than Time 1 = up or down released between Time 1 and 1 + 2 = stop Released after Time 1 + 2 = no more stop	
Time 1	0 s ... 5 s; 0,4 s
Time 2	0 s ... 5 s; 2 s

Dead man control:

The drive moves as soon as the button is pressed and stops when the button is released.

Control mode	**Dead man control**
Behaviour when a button is operated: Press button = Up or Down command Release button = Stop command	

3.5.25.Dali

If necessary, activate the Dali gateway, which is used for lighting control.

Dali gateway	No • Yes

Set the maximum and minimum output dimming values.

Maximum initial dimming value, in %	51 ... 100
Minimum initial dimming value, in %	0 ... 50; 10

Set the dimming time.

Dimming time 0 to 100%, dimming in sec.	1 ... 255; 10
Dimming time 0 to 100%, value in sec.	1 ... 255; 20

Set the start dimming value and the duration in standby before switching off. If the switch-on dimming value is higher than the maximum output dimming value, the maximum output dimming value is used as the switch-on dimming value.
The parameter "Duration in standby before switching off in min." should only be used for DALI broadcast operation. The DALI groups can be switched off immediately regardless of the duration in the standby parameter.

Switch-on dimming value in %	51 ... 100; 80
Duration in standby before switching off in min.	0 ... 255

Set the power-on and power-off behaviour.

Switch off by value possible	No • Yes
Switch on by value possible	No • Yes
Switch off by dimming possible	No • Yes
Switch on by dimming possible	No • Yes

Set the control of DALI groups and the DALI addressing of new EVGs during commissioning.
It is possible to use up to four DALI groups (group 0 to 3) to control lamps. The DALI lamps must be assigned to group 0 to 3 via an external DALI programming interface in order to use the group addressing mode.

Controlling DALI groups (0-3)	No • Yes
Dali addressing (short address) of new ECGs during commissioning	No • Yes

Set the Dali dimming curve type and the HCL (Human Centric Lighting) control.

Dali dimming curve type	• Raw value • Logarithmic • Optimised linear
Adjustable white / HCL Control	No • Yes

Adjustable white

Here you can make settings for the factory temperature.

Function	• Local control (remember last value) • Local control (fixed start value) • Global control (2 byte value from the GLT system)
Start colour temperature in Kelvin (*with local control (fixed start value)*)	1000 ... 16000; 3000
Maximum colour temperature in Kelvin	1000 ... 16000; 6500
Minimum colour temperature in Kelvin	1000 ... 16000; 2700
Adjustable white decay time for dimming in sec (4 bit)	0 ... 255; 10

Adjustable white decay time for value in sec (1 byte)	0 ... 255; 10
Adjustable white decay time factor (2 byte)	0 ... 255; 20
Adjustable white decay time basis (2 byte)	1 sec. • 1 min.

3.5.26.MP Bus

Activate the MP bus devices. The menus for the other settings of the devices are shown on them.

Use device 1	No • Yes
Use device 2	No • Yes
Use device 3	No • Yes
Use device 4	No • Yes

MP bus device 1 / 2 / 3 / 4

Up to 4 devices can be connected to one MP Bus: MFT, VAV and MPL actuators.

Device with MP bus address	1 / 2 / 3 / 4
Device type	• MFT actuator • VAV actuator • MPL actuator
Live monitoring for objects target position	No • Yes
Monitoring period (in minutes) (Only*only for live monitoring*)	1 ... 255; 5
Position when time exceeded (in %) (Only*only for live monitoring*)	0 ... 255

Set the send behaviour of the actual position and whether objects are to be used for forced control and service info. Forced control is used for service purposes and for commissioning and the commands for the actuator are converted 1 to 1.

Send behaviour Actual position (in %)	• do not send • on change • on change and periodically
From change (in %) (Only*only for change*)	1 ... 50; 5
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h
Use objects for forced control	No • Yes
Objects for service info	Do not use • use

Device type: MFT actuator

Set whether the min/mid/max values are to be read out and specified via objects.

Use Min/Mid/Max objects	No • Yes
Objects for service info	• Do not use • combine to a bit object • with separate bit objects
Sensor type	• No sensor • Active sensor (0 ... 32V) • Switch contact • PT1000 temperature sensor • NTC10K (010K2) temperature sensor • NTC10K Pre (10K3) temperature sensor

Device type: VAV actuator

Set whether the volume flow per object is readable.

Volume flow nominal (in m³/s) per object readable	No • Yes
Use Min/Mid/Max objects	No • Yes
Objects for service info	• Do not use • combine to a bit object • with separate bit objects
Sensor type	• No sensor • Active sensor (0 ... 32V) • Switch contact • PT1000 temperature sensor • NTC10K (010K2) temperature sensor • NTC10K Pre (10K3) temperature sensor

Sensor type (for MFT and VAV actuator)

One sensor per MFT or VAV actuator can be connected to the MP Bus (Multi Point). An active sensor (0 ... 32V), a switch contact or a temperature sensor (passive resistance sensor) can be connected.

• Active sensor (0 ... 32V):

Set the output type and the send behaviour.

Output type	• **Sensor value in mV** • Sensor value scaled Sensor value scaled in %
Send behaviour	• If there is a change • on change and periodically
from change (in mv)	1 ... 5000; 200
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h

Set the coordinates for the scaled sensor value.

Output type	• Sensor value in mV • **Sensor value scaled** Sensor value scaled in %
Point X1 for formula (in mV)	0 ... 32000
Point Y1 for formula	-5000 ... 5000; 1
Point X2 for formula (in mV)	0 ... 32000
Point Y2 for formula	-5000 ... 5000; 100
Send behaviour	• If there is a change • on change and periodically
from change (in mv)	1 ... 5000; 200
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h

Set the coordinates for the scaled sensor value in %.

Output type	• Sensor value in mV • Sensor value scaled • **Sensor value scaled in %**
Point X1 for formula (in mV)	0 ... 32000
Point Y1 for formula (in %)	0 ... 100
Point X2 for formula (in mV)	0 ... 32000
Point Y2 for formula (in %)	0 ... 100
Send behaviour	• If there is a change • on change and periodically
From change (in %)	1 ... 50; 10
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h

Switch contact:

Then set the send behaviour.

Send behaviour	• If there is a change • on change and periodically
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h

Temperature sensor PT1000/NTC10K (10K2)/NTC10K Pre (10K3):

Then set the send behaviour.

Send behaviour	• If there is a change • on change and periodically
from change of (in 0,1°C)	1 ... 200; 5
Send cycle (*if sent periodically*)	5 s • 10 s • ... • 2 h

3.5.27.HCL controls

Activate HCL controls, if required.

HCL controls	No • Yes

General HCL settings

HCL control is interrupted when objects 906-908 switch to Manual (with switching, brightness or colour temperature). These objects can, for example, be linked with switching commands from on-site buttons. You can also switch to Manual in the HCL control menu of the display.

Set the automatic reset, which ensures that the HCL control is restarted. The reset can be triggered via an object or after the time set here has elapsed.

Automatic reset takes place	• by time • on receipt of object • on receipt of object or by time
Reset on value *(for reset on receipt of object)*	0 • 1
Time in seconds *(for reset by time)*	1 ... 36000; 3600

Set the behaviour of the Start/Stop object, which indicates whether the HCL control is active or not. And set the behaviour of the object that indicates whether the automatic control is running or has been interrupted by manual intervention.

Start/Stop object is at value	• 1 = Start | 0 = Stop • 0 = Start | 1 = Stop
Start/Stop object Value after reset	0 • 1
Automatic/manual status object is with value	• 1 = Automatic | 0 = Manual • 0 = Manual | 1 = Automatic
Automatic/Manual object value after reset	0 • 1

Set whether and in which cases changed times, brightness and colour temperatures should be stored on the display. And specify the change from which brightness and colour temperature should be sent and thus the change should take effect.

Changed times, brightness and colour temperatures must be saved	• not send • after restoration of power • after power restoration and programming
Send brightness values when change from	1...50%; 5
Send colour temperature values when changed from	1...500 K; 50

Sequence 1/2/3/4/5/6/7/8

Activate as many sequences as you need. If the start and stop times are the same (e.g. 0:00 - 0:00), the sequence is skipped. Sequence 1 starts with the stop values of se-

quence 8, therefore the values of sequence 8 should always be set. Sequences 2-8 always start with the stop value of the previous sequence.

First, set whether or not the sequence should be enabled for use after a reset. Sequences that are not enabled are skipped.Automatic/Manual object value after reset Each sequence can be enabled or disabled for use directly on the **KNX MultiController TWIN** display.

Release after reset	No • Yes

Set a start time, time, brightness and colour temperature for the end of the sequence.

Start time	
Hour	0...23
Minute	0...59
Second	0...59
Stop time	
Hour	0...23
Minute	0...59
Second	0...59
Brightness at stop time in %	0...100; 50
Colour temperature at stop time in Kelvin	1500...6500; 2700

3.5.28.Variable comparator

The two integrated control variable comparators can output maximum, minimum and median values.

Use comparator 1/2/3/4	No • Yes

Control variable comparator 1/2/3/4

Determine what the control variable comparator should output, and activate the input objects to be used. Send behaviour and blocks can also be set.

Output delivered	• Maximum value • Minimum value • Average value
Use input 1/2/3/4/5	No • Yes
Output sends	• on change of output • on change of output and periodically • when receiving an input object • when receiving an input object and periodically
Send cycle *(if sent periodically)*	5 s • 10 s • 30 s • ... • 5 min • ... • 2 h

On change of *(if sent on change)*	1% • 2% • 5% • 10% • 20% • 25% • 50%
Assessment of the block object	• at value 1: block | at value 0: release • at value 0: block | at value 1: release
Blocking object value before first communication	0 • 1
Switching output behaviour	
On blocking	• do not send message • Send value
Value in % (*if a value is sent*)	0 ... 100
on release, output is sent (with 2 second release delay)	• the current value • the current value after receipt of an object

3.5.29.Computer

Activate the multi-functional computer, with which the input data can be changed by calculation, querying a condition or converting the data point type. The menus for the further setting of the computer are then displayed.

Use computer 1/2/3/4/5/6/7/8	No • Yes

Computers 1-8

Set, in which cases input values received are to be kept per object. Please note that the setting "After power restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first call (setting via objects is ignored).

The nominal values and delay times	
should	• not send • after restoration of power • after power restoration and programming
.	

Select the function set the input mode and starting values for input 1 and input 2.

Function (I = Input)	• Prerequisite: E1 = E2 • Prerequisite: E1 > E2 • Prerequisite: E1 >= E2 • Prerequisite: E1 < E2 • Prerequisite: E1 <= E2 • Prerequisite: E1 - E2 >= E3 • Prerequisite: E2 - E1 >= E3 • Prerequisite: E1 - E2 amount >= E3 • Calculation: E1 + E2 • Calculation: E1 - E2 • Calculation: E2 - E1 • Calculation: E1 - E2 Amount • Calculation: Output 1 = E1 × X + Y | Output 2 = E2 × X + Y | • Transformation: General
Input type	[Selection options depending on the function] • 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Starting value E1 / E2 / E3	[Input range depending on the type of input]

Prerequisites

When querying the prerequisites set the output type and output values at different statuses:

Output type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 1 byte (0...63) scene call-up • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Output value *(if applicable output value A1 / A2)*	
if the condition is met	0 [Input range depending on the type of output]

if the condition is not met	0 [Input range depending on the type of output]
if the monitoring time period is exceeded	0 [Input range depending on the type of output]
if blocked	0 [Input range depending on the type of output]

Set the output send behaviour.

Output sends	• If there is a change • on change and after reset • on change and periodically • when receiving an input object • when receiving an input object and cyclically
Type of change *(is only sent if "on change" is selected)*	• on each change • on change to condition met • on change to condition not met
Send cycle *(if sent periodically)*	5 s ... 2 h; 10 s

Set the text to be displayed for conditions met / not met.

Text if the condition is met	[Free text max. 14 chars.]
Text if the condition is not met	[Free text max. 14 chars.]

If applicable set the send delays.

Send delay in the event of change to the condition is met	none • 1 s • ... • 2 h
Send delay in the event of change to the condition is not met	none • 1 s • ... • 2 h

Calculations and transformation

For calculations and transformations set the output values to the various conditions:

Output value (if applicable A1 / A2)	
if the monitoring time period is exceeded	0 [Input range depending on the type of output]
if blocked	0 [Input range depending on the type of output]

Set the output send behaviour.

Output sends	• If there is a change • on change and after reset • on change and periodically • when receiving an input object • when receiving an input object and cyclically
on change of *(only if calculations are transmitted for changes)*	1 ... [Input range depending on the type of input]
Send cycle *(if sent periodically)*	5 s ... 2 h; 10 s

For **Calculations of the form output 1 = E1 × X + Y | output 2 = E2 × X +Y** define the variables X and Y. The variables can have a positive or negative sign, 9 digits before and 9 digits after the decimal point.

Formula for output A1: A1 = E1 × X + Y	
X	1.00 [free input]
Y	0.00 [free input]
Formula for output A2: A2 = E2 × X + Y	
X	1.00 [free input]
Y	0.00 [free input]

Further settings for all formulas

If necessary, activate the input monitoring. Set which inputs are to be monitored, at which intervals the inputs are to be monitored and what value the "monitoring status" should have, if the monitoring period is exceeded without feedback.

Use input monitoring	No • Yes
Monitoring of	• E1 • E2 • E3 • E1 and E2 • E1 and E3 • E2 and E3 • E1 and E2 and E3 [depending on the function]
Monitoring period	5 s • ... • 2 h; 1 min
Value of the object "monitoring status" if period is exceeded	0 • 1

If necessary, activate the computer block and set what a 1 or 0 at the block entry means and what happens in the event of a block.

Use block	No • Yes
Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release

value before first communication	0 • 1
Output behaviour when blocking	• not send anything • Send value
when released	• as send behaviour [see above] • send current value immediately

3.5.30.Logic

The device has 16 logic inputs, eight AND and eight OR logic gates.

Activate the logic inputs and assign object values up to 1st communication.

Use logic inputs	Yes • No
Object value prior to 1st communication for	
- Logic input 1 ... 16	0 • 1

Activate the required logic outputs

AND logic

AND logic 1 ... 8	not active • active

OR logic

OR logic 1 ... 8	not active • active

AND logic 1-8 and OR logic outputs 1-8

The same setting options are available for AND and OR logic.

Each logic output may transmit one 1-bit or two 8-bit objects. Determine what the out put should send if logic = 1 and = 0.

1. / 2. / 3. / 4. Input	• Do not use - Logic inputs 1...16 - Logic inputs 1...16 inverted • all switching events that the device provides (see the chapter *Connection inputs for AND or OR logic*)
Output type	• a 1-bit-object • sends two 8-bit objects

If the **output type is a 1-bit object**, set the output values for the various conditions.

Output value if logic = 1	1 • 0
Output value if logic = 0	1 • 0
Output value If block is active	1 • 0
Output value if monitoring time exceeded	1 • 0

If the **output type is two 8-bit objects**, set the type of object and the output values for the various conditions.

Object type	• value (0…255) • Percent (0…100%) • Angle (0…360°) • Scene call-up (0…63)
Output value object A if logic = 1	0 … 255 / 100% / 360° / 63; 1
Output value object B if logic = 1	0 … 255 / 100% / 360° / 63; 1
Output value object A if logic = 0	0 … 255 / 100% / 360° / 63; 0
Output value object B if logic = 0	0 … 255 / 100% / 360° / 63; 0
Output value object A if block active	0 … 255 / 100% / 360° / 63; 0
Output value object B if block active	0 … 255 / 100% / 360° / 63; 0
Output value object A if monitoring time exceeded	0 … 255 / 100% / 360° / 63; 0
Output value object B if monitoring time exceeded	0 … 255 / 100% / 360° / 63; 0

Set the output send behaviour.

Send behaviour	• on change of logic • on change of logic to 1 • on change of logic to 0 • on change of logic and periodically • on change of logic to 1 and periodically • on change of logic to 0 and periodically • on change of logic+object receipt • on change of logic+object receipt and cyclically
Send cycle *(if sent periodically)*	5 s • 10 s • ... • 2 h

Block:

If necessary, activate the block for the logic output and set what a 1 or 0 at the block input means and what happens in the event of a block.

Use block	No • Yes
Assessment of the block object	• At value 1: block | At value 0: release • At value 0: block | At value 1: release
Blocking object value before first Communication	0 • 1
Output behaviour when blocking	• Do not send message • Send block value [see above, output value if block active]
when released (with 2 second release delay)	[send value for current logic status]

Monitoring:

If necessary, activate the input monitoring. Set which inputs are to be monitored, at which intervals the inputs are to be monitored and what value the "monitoring status" should have, if the monitoring period is exceeded without a feedback being given.

Use input monitoring	No • Yes
Input monitoring	• 1 • 2 • 3 • 4 • 1 + 2 • 1 + 3 • 1 + 4 • 2 + 3 • 2 + 4 • 3 + 4 • 1 + 2 + 3 • 1 + 2 + 4 • 1 + 3 + 4 • 2 + 3 + 4 • 1 + 2 + 3 + 4
Monitoring period	5 s • ... • 2 h; 1 min
Output behaviour on exceeding the monitoring time	• Do not send message • Send value exceeding [= value of the parameter "Monitoring period"]

AND logic connection inputs

do not use
Logic input 1
Logic input 1 inverted
Logic input 2
Logic input 2 inverted
Logic input 3
Logic input 3 inverted
Logic input 4
Logic input 4 inverted
Logic input 5
Logic input 5 inverted
Logic input 6
Logic input 6 inverted
Logic input 7
Logic input 7 inverted

Logic input 8
Logic input 8 inverted
Logic input 9
Logic input 9 inverted
Logic input 10
Logic input 10 inverted
Logic input 11
Logic input 11 inverted
Logic input 12
Logic input 12 inverted
Logic input 13
Logic input 13 inverted
Logic input 14
Logic input 14 inverted
Logic input 15
Logic input 15 inverted
Logic input 16
Logic input 16 inverted
Cala temperature sensor malfunction ON
Cala temperature sensor malfunction OFF
Cala humidity sensor malfunction ON
Cala humidity sensor malfunction OFF
Cala CO2 sensor malfunction ON
Cala CO2 sensor malfunction OFF
Sewi temperature sensor malfunction ON
Sewi temperature sensor malfunction OFF
Sewi humidity sensor malfunction ON
Sewi humidity sensor malfunction OFF
Switching output 1 Temperature
Switching output 1 Temperature inverted
Switching output 2 Temperature
Switching output 2 Temperature inverted
Switching output 3 Temperature
Switching output 3 Temperature inverted
Switching output 4 Temperature
Switching output 4 Temperature inverted
Switching output 1 Humidity
Switching output 1 Humidity inverted
Switching output 2 Humidity
Switching output 2 Humidity inverted
Switching output 3 Humidity
Switching output 3 Humidity inverted
Switching output 4 Humidity
Switching output 4 Humidity inverted
Switching output coolant temperature
Switching output coolant temperature inv.
Room temperature is comfortable
Room temperature is uncomfortable

Switching output 1 CO2
Switching output 1 CO2 inverted
Switching output 2 CO2
Switching output 2 CO2 inverted
Switching output 3 CO2
Switching output 3 CO2 inverted
Switching output 4 CO2
Switching output 4 CO2 inverted
Comfort temperature controller active
Comfort temperature controller inactive
Standby temperature controller active
Standby temperature controller inactive
Eco temperature controller active
Eco temperature controller inactive
Frost protection temperature controller active
Frost protection temperature controller inactive
Heating 1 temperature controller active
Heating 1 temperature controller inactive
Heating 2 temperature controller active
Heating 2 temperature controller inactive
Cooling 1 temperature controller active
Cooling 1 temperature controller inactive
Cooling 2 temperature controller active
Cooling 2 temperature controller inactive
Humidity controller de-humidification 1 active
Humidity controller de-humidification 1 inactive
Humidity controller de-humidification 2 active
Humidity controller de-humidification 2 inactive
Humidity controller humidification active
Humidity controller humidification 1 inactive
CO2 controller ventilation 1 active
CO2 controller ventilation 1 inactive
CO2 controller ventilation 2 active
CO2 controller ventilation 2 inactive
Switching output 1 brightness
Switching output 1 brightness inverted
Switching output 2 brightness
Switching output 2 brightness inverted
Switching output 3 brightness
Switching output 3 brightness inverted
Switching output 4 brightness
Switching output 4 brightness inverted
Switching output night
Switching output inverted
Motion detector Test Output
Motion detector Test Output inverted
Motion detector Slave Output
Motion detector Slave Output inverted

Motion detector Master 1 Output
Motion detector Master 1 Output inverted
Motion detector Master 2 Output
Motion detector Master 2 Output inverted
Motion detector Master 3 Output
Motion detector Master 3 Output inverted
Motion detector Master 4 Output
Motion detector Master 4 Output inverted
Heating actuator channel 1 active
Heating actuator 1 inactive
Heating actuator 2 active
Heating actuator 2 inactive

OR LOGIC connection inputs

The OR logic connection inputs are the same as those for the AND logic. Additionally, the following inputs are available for the OR logic:

Switching output AND logic 1
Switching output AND logic 1 inverted
Switching output AND logic 2
Switching output AND logic 2 inverted
Switching output AND logic 3
Switching output AND logic 3 inverted
Switching output AND logic 4
Switching output AND logic 4 inverted
Switching output AND logic 5
Switching output AND logic 5 inverted
Switching output AND logic 6
Switching output AND logic 6 inverted
Switching output AND logic 7
Switching output AND logic 7 inverted
Switching output AND logic 8
Switching output AND logic 8 inverted

3.5.31.Scenes

A group address for scenes must be filed in the KNX system to control the scenes. The input object "Scene X" of **KNX MultiController TWIN** is linked to this group address.

A scene is **called**, then the **scene number** is communicated to the **KNX MultiController TWIN** . The movement position saved for this scene number in the **KNX MultiController TWIN** is then taken. If the scene **saving** function is used, then the current movement position is saved for this scene number in the button.

Set the number of scenes to use.

Use scenes	No • Yes
Use scene object 1 ... 16	No • Yes

Set the mode.

Mode	• Call via 1 bit object (value 1 or 0) • Call via 8 bit scene object • Call and save via 8-Bit scene object

Scene object 1 ... 16

Set the object type and whether stored values should be retained.

Object type	• 1 bit • 1 byte (0...255) • 1 byte (0%...100%) • 1 byte (0°...360°) • 2 byte counter without math. symbol • 2 byte counter with math. symbol • 2 byte floating point • 4 byte counter without math. symbol • 4 byte counter with math. symbol • 4 byte floating point
Last saved value should	• not • after restoration of power • after power restoration and programming
be retained.	

Activate the scene numbers you want to use and set the respective object value.

Use scene number 1 ... 16	No • Yes
Value	0 [Input range depending on the type of output]