User Manual

K-BUS KNX GPS Weather Station Pro_V1.2

CSWSP-07/00.1.00

KNX/EIB Home and Building Control System

Attentions

1.Please keep devices away from strong magnetic field, high temperature, wet environment;

2.Do not fall the device to the ground or make them get hard impact;

3.Do not use wet cloth or volatile reagent to wipe the device;

4.Do not disassemble the devices.

Contents

Chapter 1 Summary

The KNX GPS Weather Station Pro for the KNX building bus system measures temperature, wind speed, wind direction, brightness air humidity and air pressure. It recognizes precipitation and receives the GPS signal for time and location. In addition, using location coordinates and the time, it calculates the exact position of the sun (azimuth and elevation).

All values can be used for the control of limit dependent switching outputs. States can be linked via AND logic gates and OR logic gates. Multi-function modules change input data as required by means of calculations, querying a condition, or converting the data point type.

The integrated shade control system allows intelligent sun protection control of up to 12 facades.

Functions are summarized as followed:

- Brightness measurement (current light strength). Measurement with 5 separate sensors, output of the current highest value (one maximum value). Separate limit values for night.
- GPS receiver, outputting the current time and location coordinates. The KNX GPS Weather Station Pro also computes the position of the sun (azimuth and elevation).
- Shade control for up to 12 facades with slat tracking and shadow edge tracking.
- Wind measurement: Measurement of wind strength and wind direction (0°- 360°) by ultrasound.
- Precipitation detection: The sensor surface is heated, so that only drops and flakes are recognised as precipitation, but not mist or dew. When the rain or snow stops, the sensor is soon dry again and the precipitation warning ends.
- Temperature measurement. Calculation of the felt temperature (considering wind strength and air humidity).
- Frost protection for shading systems.
- Air humidity measurement (relative, absolute).
- Bus message, whether the values of temperature and humidity are within the comfort field (DIN 1946). Calculation of the dew point.
- Air pressure measurement.

- Weekly and calendar time switch: All time switching outputs can be used as communication objects. The weekly time switch has 24 periods. Each period can be configured either as an output or as an input. If the period is an output, then the switching time is set per parameter or per communication object. The calendar time switch has 4 periods. Two on/off switching operations, which are executed daily, can be set for each period.
- Switching outputs for all measured and computed values. Threshold values can be adjusted per parameter or via communication objects.
- 8 AND and 8 OR logic gates, each with 4 inputs. All switching events as well as 16 logic inputs (in the form of communications objects) can be used as inputs for the logic gates. The output of each gate can be configured optionally as 1-bit or 2 x 8-bit.
- 8 multi-function modules (computers) for changing the input data by calculations, by querying a condition or by converting the data point type.
- Summer compensation for cooling systems. A characteristic curve matches the target temperature in the room to the external temperature and sets the minimum and maximum target temperature values.

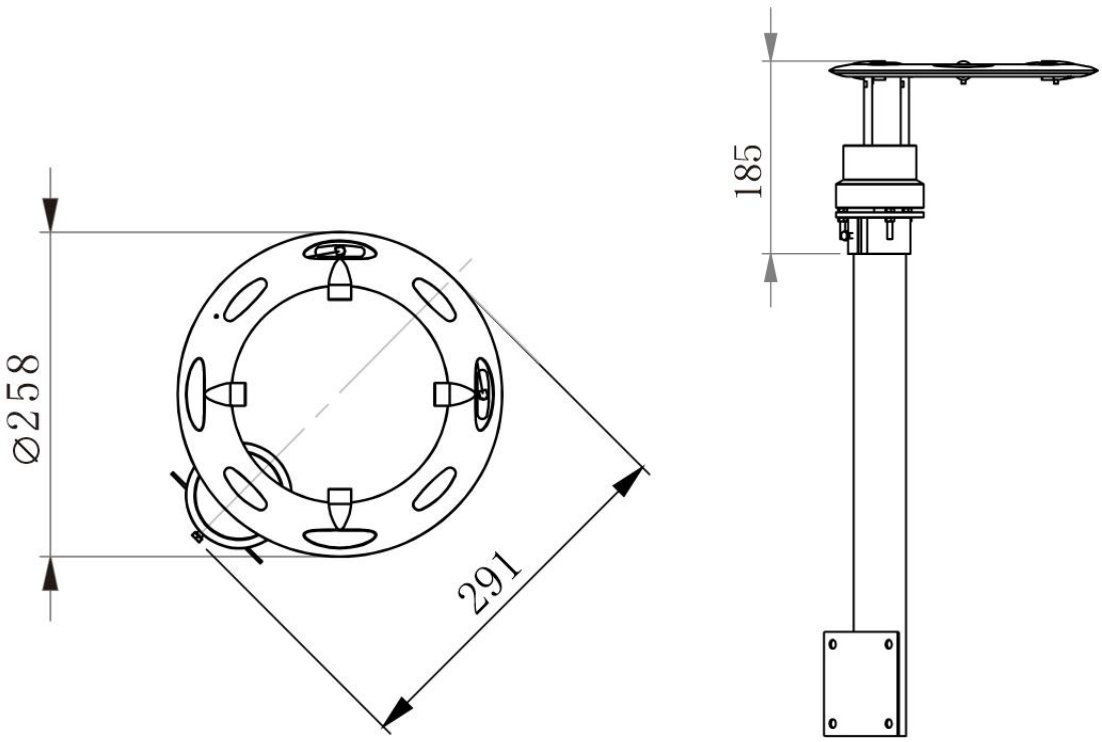
Chapter 2 Technical date

General	Installation	Pole mounting
	Degree of protection	IP44
	Dimensions(W x H x D)	258*185*291mm
	Total weight	≈600g
	Ambient temperature	-25...+50℃
	Storage temperature	-30...+70℃
KNX bus	Bus voltage	21-30V DC, via the KNX bus
	Bus current	⩽18mA/24V DC, ⩽15mA/30V DC
	Bus consumption	⩽450mW
	Duration after bus voltage restoration until data is received	≈8s
	Medium	TP1-256
	Configuration mode	S-Mode
Auxiliary supply	Voltage	21.6~26.4V DC
	Current [at]	⩽250mA/24V DC [t > 7.5°C] ⩽1.6A/24V DC [t⩽ 7.5°C]
	consumption [at]	⩽6 W [t > 7.5°C] ⩽40 W [t⩽ 7.5°C]
Sensors	Measurement range temperature	-25...+50℃
	Measurement range air humidity (rH)	0%...100%
	Measurement range wind speed	0...35 m/s
	Measurement range wind direction [from wind speed]	0...360° [v>0.5m/s]
	Measurement range pressure	300 mbar....1100 mbar
	Measurement range brightness	0 Lux...150000 Lux

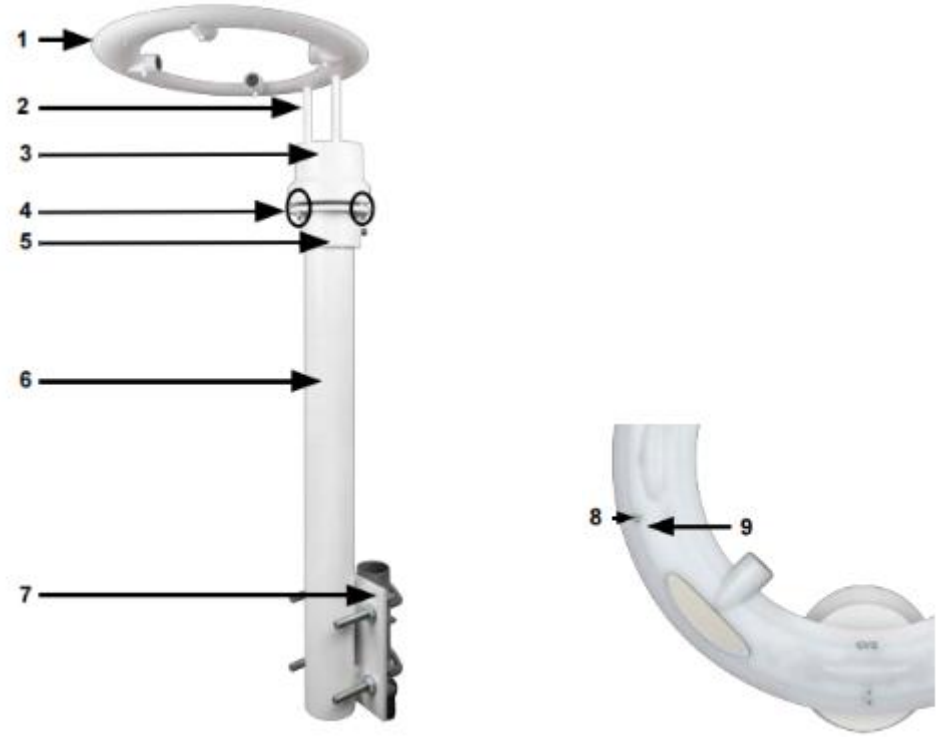
Application	Maximum of communication objects	Maximum number of group addresses	Maximum number of associations
KNX GPS Weather Station Pro/1.0	**1414**	**2000**	**2000**

Chapter 3 Dimension and structural diagram

3.1 Dimension diagram



3.2 Structural diagram



1 Ring with sensors

2 Ring – base connector

3 Base with temperature and humidity sensor, control electronics and bus connection socket

4 Threaded rods with self-locking nuts for setting the angle

5 Base holder

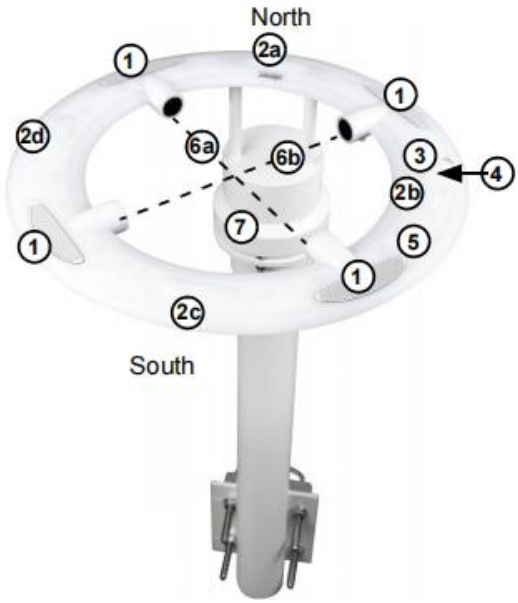
6 Mast extension

7 Mast holder with fastening brackets

8 PRG magnetic switch (can be triggered with the enclosed magnet)

9 Programming LED

3.3 Position of the sensors



1 Precipitation sensors (4 surfaces with conductor tracks)

2 Brightness sensors under plastic domes, directed to wards:

a - North b - East c - South d - West and up (sky)

3 Pressure sensor

4 Magnet PRG button (magnetic switch) for addressing the device

5 GPS module

6 Wind sensor with ultrasonic measuring sections

a - North-east/South-west

b - South-east/North-west

7 Temperature and humidity sensor in the base

3.4 Installation instructions

CAUTION!

Live voltage!

There are unprotected live electric components inside.

Installation and commissioning may only be handled by an electrician.

• Only operate devices if they are free from damage.

• Comply with country-specific standards, directives, specifications and provisions for electrical installation.

• Switch off voltage to the system during installation.

• Place out of reach of persons.

• Select an installation position on the building where the sensors can measure wind, rain and sunshine without hindrance.

• Do not install below construction parts from which water can still drip onto the rain sensor even after it has stopped raining or snowing.

• Avoid installation locations that are heated or cooled by sources of interference (solar radiation on building structure etc.)

• Do not place near magnetic fields, transmitters and interference fields from electrical consumers (e.g. fluorescent lamps, neon signs, switching power supplies, etc.) as this may interfere with GPS reception.

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

Improper use, modifications to the device or failure to observe this manual will void any warranty and guarantee claims.

The networks connected to the device (KNX and supply voltage) must be entirely within the same earthing system.

Fig.1:

Fig.2:

Leave a distance of at least 60 cm below, to the sides and to the front from other elements (building structure, construction parts, etc.).

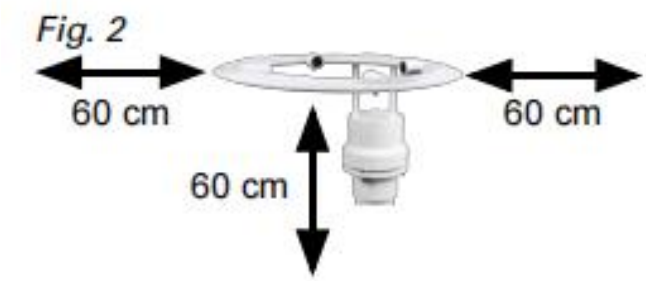
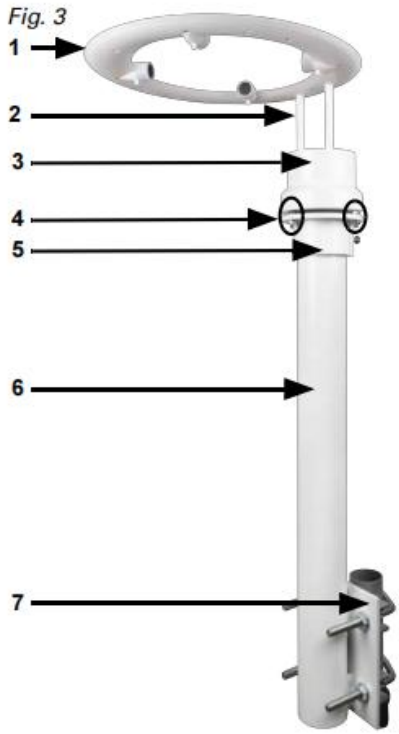


Fig.3: Device setup



1 Ring with sensors

2 Ring – base connector

3 Base with temperature and humidity sensor, control electronics and bus connection socket

4 Threaded rods with self-locking nuts for setting the angle

5 Base holder

6 Mast extension

7 Mast holder with fastening brackets

ATTENTION!

Sensitive sensors!

• Only hold the device by the base.

• Do not mechanically load (bend) the ring and connections. Caution Lever effect!

Fig.4+5

The connection to the KNX bus and the supply voltage is via the bushing in the base. To do this, screw the base by the base holder. Screw the M8 plug connector on the connection cable to the connection socket (A). The cable can be passed through the mast extension (Fig. 5a) or out between base and base holder (Fig. 5b).Fasten the device with the mast extension to a vertical mast or a horizontal railing.

Fig. 4

Fig. 5a

Fig. 5b

Fig.5b-7

Place the weather station with the base and the base holder on the mast extension.

Align the device along the north south axis. The base (C) must be in the north, the ring must face south.

For the next steps, use the enclosed fork wrenches and the circular level.

Use the screw to fix the weather station in the base holder (B).

Place the ring horizontally by adjusting the angle using the 3 threaded rods and the 3 nuts between the base and base holder. Then fix the base with the 3 nuts, which are located on the bottom end of the threaded rods.

Wind can only be recorded correctly if the ring is horizontal.

Fig. 6

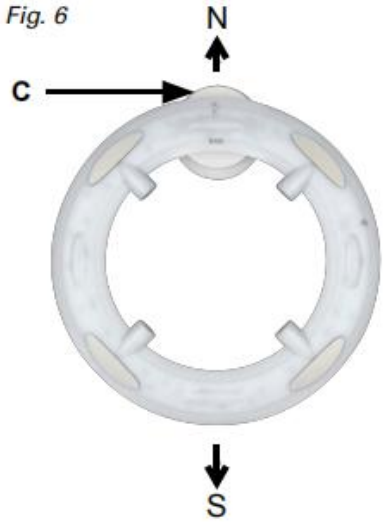


Fig. 7

Fig.8 Connection to KNX bus

Use the supplied junction box and terminals to connect the loose end of the connection cable to the KNX bus and the mains unit (supply voltage).

KNX	Supply voltage
+ Red - Black	+ Yellow - White

Set the voltage to 24 V DC b turning the adjusting screw on the mains unit (D) fully to the left. Over voltage protection installed on site is recommended.

Fig. 8

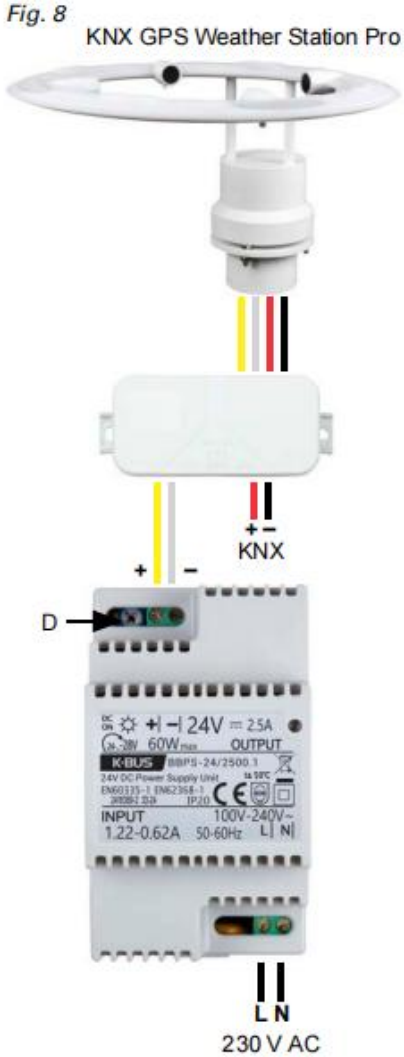
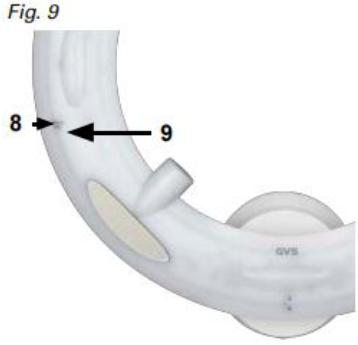


Fig.9 Addressing the equipment

8 PRG magnetic switch (can be triggered with the enclosed magnet)

9 Programming LED

Fig. 9



Chapter 4 Parameter setting description in the ETS

4.1 Parameter window “General settings”

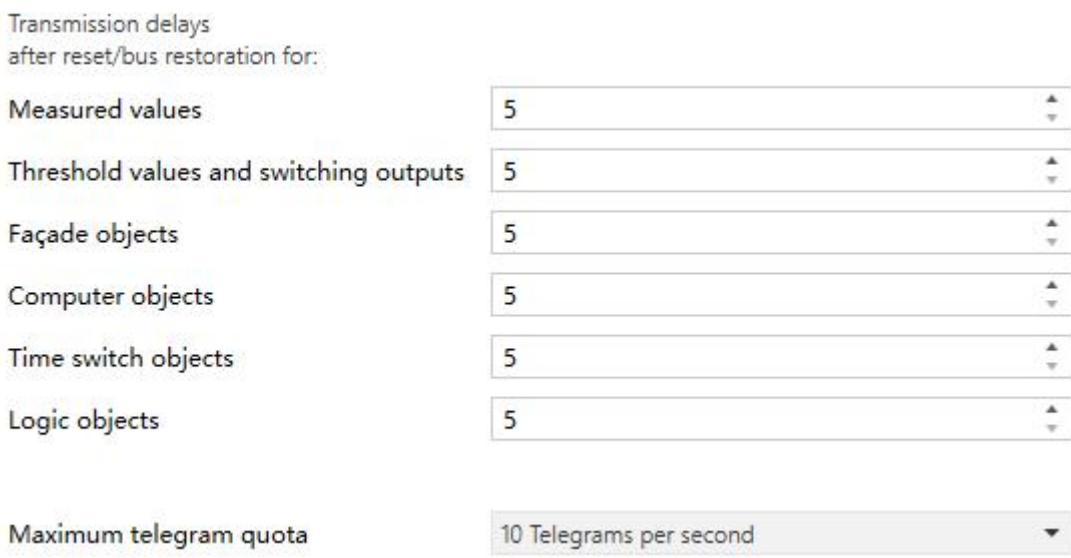


Fig.4.1 Parameter window “General settings”

Transmission delays after reset/bus restoration for:

Parameter “Measured values”

Parameter “Threshold value and switching outputs”

Parameter “Facade object”

Parameter “Computer object”

Parameter “Time switch object”

Parameter “Logic outputs”

Parameter “Maximum telegram quota”

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

Options: **5sec/.../2h**

Options: **1 telegram per second/.../50 telegram per second**

4.2 Parameter window “GPS settings”

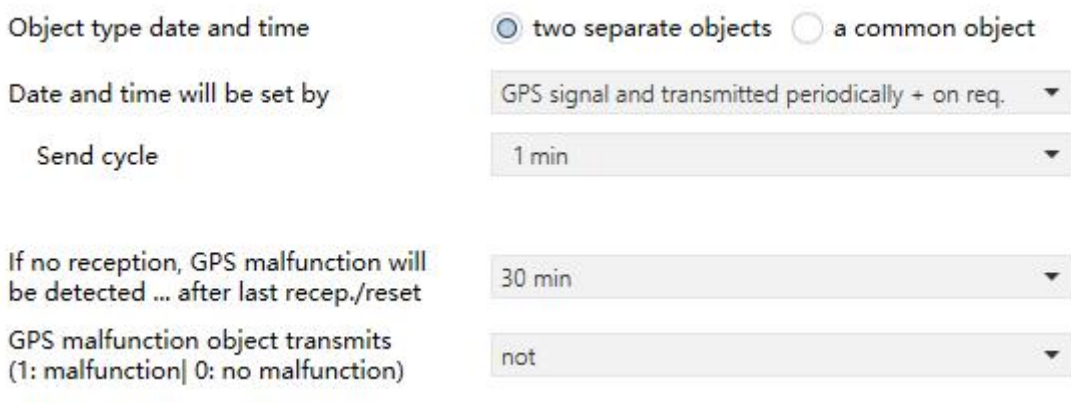


Fig.4.2 Parameter window “GPS settings”

Parameter “Object type date and time”

Set whether the time and date are to be sent as separate objects or as one common object.

Options:

two separate objects

a common object

If time and date are set by two objects, then only a maximum of 10 seconds 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.

Parameter “Date and time will be set by”

Specify whether the time and date are to be set by the GPS signal or objects.

If time and date are set by the GPS-Signal, the data is available as soon as a valid GPS signal is received.

If time and date are set by the GPS-Signal, the data is available as soon as a valid GPS signal is received.

Options:

GPS signal and not transmitted

GPS signal and sent transmitted periodically

GPS signal and transmitted on request

GPS signal and transmitted periodically + on req.

Object(s) and not transmitted

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "Object(s) and not transmitted" and "GPS signal and transmitted on request and periodically".

When sending periodically, the date and time are sent on the bus in a fixed cycle that can be set here.

Note: The device has an integrated real-time clock. Therefore, time keeps on running internally and can be sent to the bus, even when no GPS coverage is available or no time object has been received for some time. The internal clock can show a time drift of up to ±6 seconds per day.

Options:

5sec

10s

...

1.5h

2h

Parameter "If there is no reception, GPS malfunction will be detected ... after last recep./reset"

After the bus voltage is applied or restored, it can take up to 10 minutes until the GPS signal is received, sometimes even longer at locations with poor GPS reception. Therefore, a longer duration should be chosen in such cases.

Options:

20min

30min

...

1.5h

2h

Parameter "GPS malfunction object transmits(1=Malfunction | 0=no Malfunction)"

The information of the GPS fault can be used by other bus participants for monitoring. The transmission behaviour can be set here to match this.

Options:

not

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

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "on change and periodically " , "on change to 1 and periodically " and "on change to 0 and periodically".

When sending periodically, the GPS fault is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

4.3 Parameter window “Location”

The location data is required in order to be able to calculate the position of the sun with the help of the date and time.

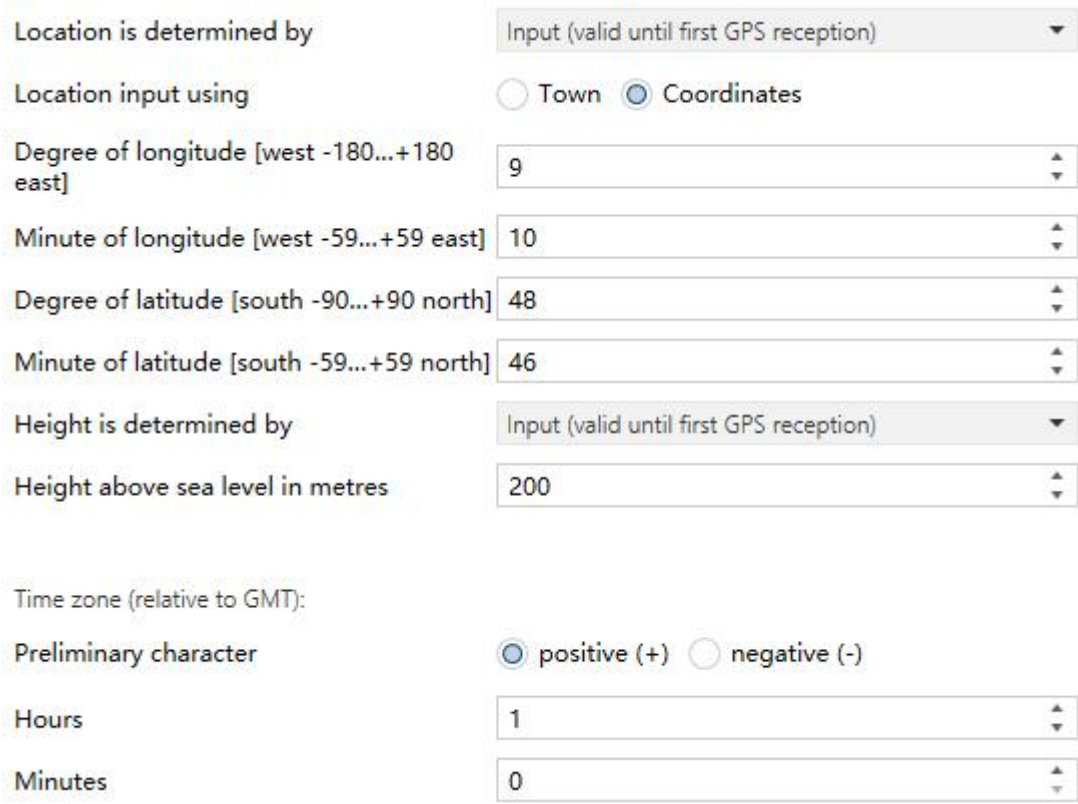


Fig.4.3 Parameter window “Location”

Parameter “Location is determined by”

The location is received via GPS or entered manually (selection of the nearest town or by entering coordinates).

Also when using the GPS signal coordinates can be entered manually for the initial commissioning. This data is used as long as no GPS reception exists. For this you select the option "Input (only valid until the first GPS reception)".

options: **Input/Input (valid until first GPS reception)/GPS reception**

——Parameter "Location input using"

This parameter is visible when previous parameter is selected "input" or "Input (valid until first GPS reception)".

This parameter is used to set location input using town or coordinates.

options:

Town

Coordinates

Parameters as follow are visible when "Location input using" is selected "Town".

——Parameter "Country"

——Parameter "Town"

This parameter is used to set the country and town.

options: **Belgium/.../USA**

options: **Antwerp/.../Oostende**

Parameters as follow are visible when "Location input using" is selected "Coordinates".

——Parameter "Degree of longitude [west -180…+180 east]"

——Parameter "Minute of longitude [west -59…+59 east]"

——Parameter "Degree of latitude [south -90…+90 north]"

——Parameter "Minute of latitude [south -59…+59 north]"

This parameter is used to set the latitude and longitude position.

options: **-180...180**

options: **-59...59**

options: **-90...90**

options: **-59...59**

——Parameter "Height is determined by"

——Parameter "Height above sea level in metres"

The location-height above sea level is used to calculate the normal air pressure (see chapter 4.22 pressure measure threshold).

The height is received per GPS or entered manually.

When using the GPS signal a height can be entered manually for the initial commissioning. This data is used as long as no GPS reception exists. For this you select the option "Input (only valid until the first GPS reception)".

options: **Input/Input (valid until first GPS reception/)/GPS reception**

options: **-1000...10000**

Time zone(relative to GMT):

Parameter "Preliminary character"

Parameter "Hours"

Parameter "Minutes"

Parameter "Summertime Rule"

All the following times are to be entered as winter time=standard time

Start/End of summer time

Parameter "On"

Parameter "From (day)"

Parameter "(Month)"

Parameter "(Minute)"

Parameter "(Hours)"

Parameter "(Minutes)"

In order to be able to output the local time, the time zone (difference to world time (Coordinated Universal Time)) and the summer time rules must be defined. Specify the hours and minutes after winter time (standard time).

Options:**Positive(+)/Negative(-)**

Options: **0...13**

Options: **0...59**

Options:**Europe/USA/User-defined/None**

Options: **Monday/.../Sunday/Date**

Options: **1...31**

Options: **1...12**

Options: **0...23**

Options: **0...59**

Options: **-12...12**

Options: **0...59**

Parameter "Transmit coordinates"

The standard coordinates can be transmitted from the device to the bus and thus be used in other applications, no matter whether they have been received via GPS or specified manually.

Options:

Not

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "Periodically" and "On change and periodically".

When sending periodically, the position coordinates are sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “On change” and “On change and periodically”.

When sending on change, the location coordinates are sent on the bus as soon as they change by the value set here.

Options:

0.5°

1°

...

10°

4.4 Parameter window “Rain”

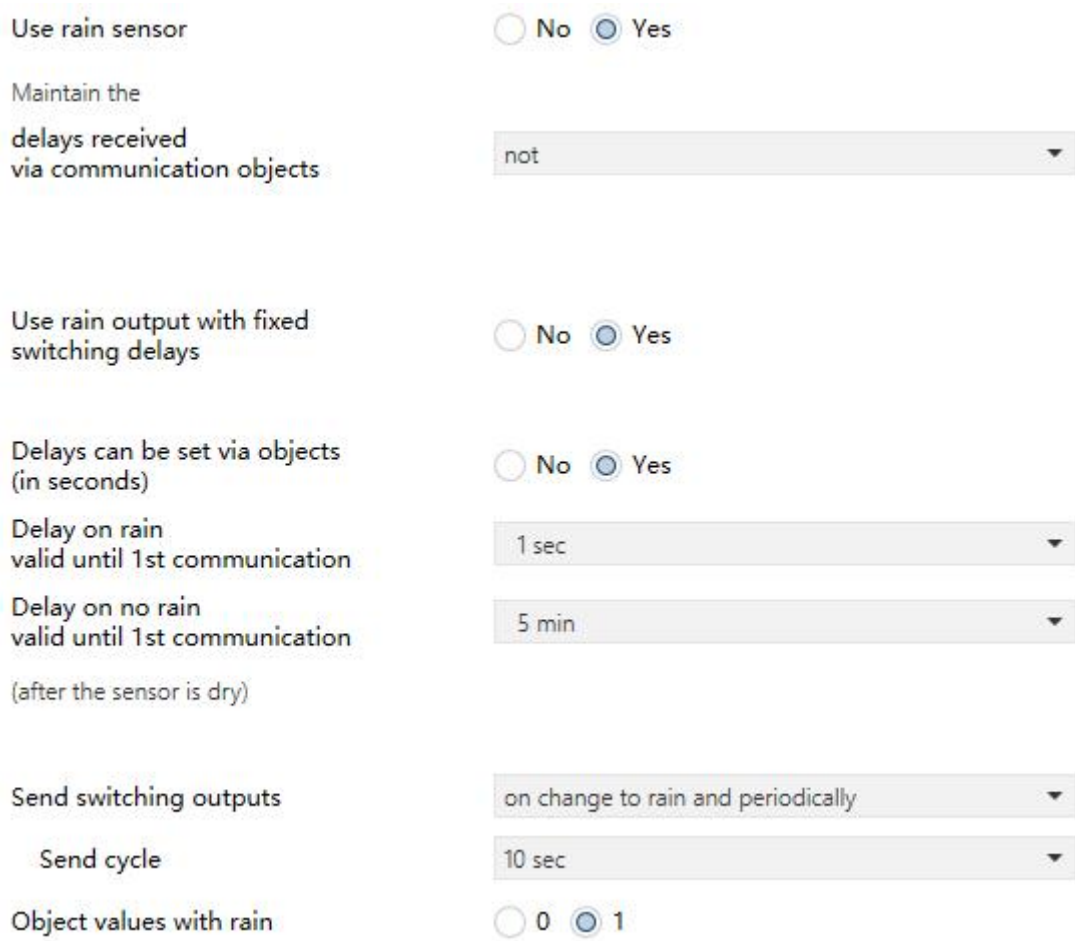


Fig.4.4 Parameter window “Rain”

Parameter “Use rain sensor”

This parameter is used to set whether use rain sensor.

Options:

No

Yes

Parameters as follow are visible when “use rain sensor” is selected “yes”.

Parameter “delays received via communication objects”

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.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note: 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).

Parameter "Use rain output with fixed switching delays"

Select whether the special rain output is to be used with fixed switching delay. This switching output has no delay on rain recognition and 5 minutes delay after it is dry again.

Options:

No

Yes

Parameter "Delays can be set via objects(in seconds)"

Parameter "Delay on rain valid until 1st communication"

Parameter "Delay on no rain valid until 1st communication"

Set the delay times. If the delays are defined using objects, then the times set here are only valid up to the first call.

Options: **none/5 sec/10s/.../1.5h/2h**

Options: **5 min/10s/.../1.5h/2h**

(after the sensor is dry)

Parameter "Switching output sends"

Here you set when the switching output is to be sent to the bus.

Options:

on change

on change to rain

on change to no rain

on change and periodically

on change to rain and periodically

on change to no rain and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "on change and periodically " , "on change to 1 and periodically " and "on change to 0 and periodically".

When sending periodically, the rain switching output is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

Parameter "Object values with rain"

Define the object value for the rain.

Options:

0

1

4.5 Parameter window “Temperature”

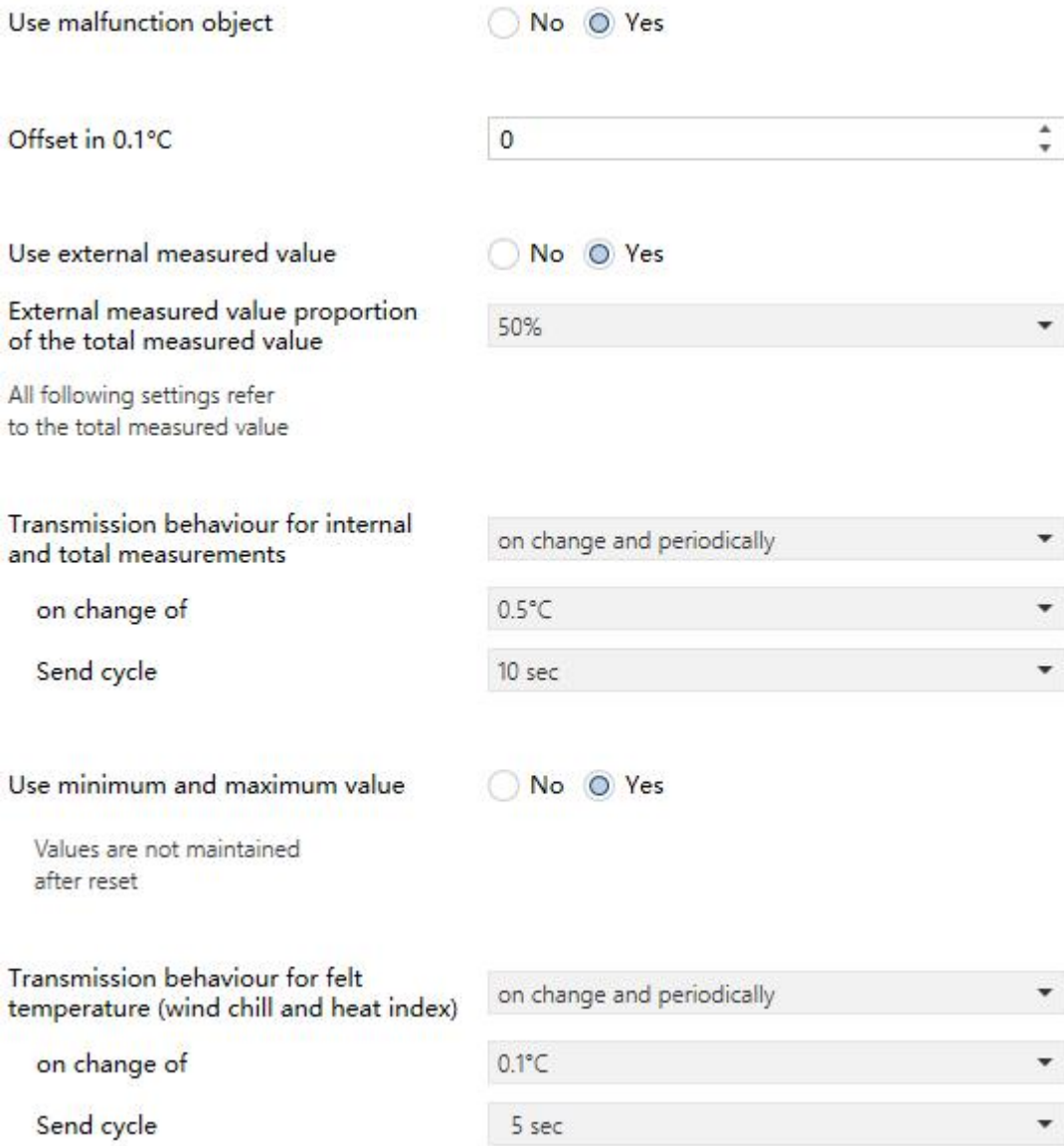


Fig.4.5 Parameter window “Temperature”

Parameter “Use malfunction object”

First of all set whether the temperature sensor malfunction object is to be used and correct.

Options:

No

Yes

Parameter "Offset in 0.1℃"

The output temperature value can be corrected here by an offset value if required. In this way, deviations caused by sources of interference can be compensated for, e.g. dark surfaces that heat up.

Options: **-50...50**

Parameter "Use external measured value"

This parameter is used to set whether use external measured value.

Options:

No

Yes

——Parameter "External measured value proportion of the total measured value"

This parameter is visible when previous parameter is selected "yes" .

This parameter is used to set the external measured value proportion of the total measured value.

Options:

5%

10%

...

95%

100%

All following settings refer to the total measured value

Parameter "Transmission behaviour for internal and total measurements "

This parameter is used to set the transmission behavior for the internal and total measurements.

Options:

Not

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically” and “on change and periodically” .

When sending periodically, the temperature value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically” .

When sending on change, the temperature value is sent on the bus as soon as it changes by the value set here.

Options:

0.5℃

0.2℃

...

2.0℃

5.0℃

Parameter "Use minimum and maximum values"

Select whether the minimum and maximum value should be used.

Options:

No

Yes

Values are not maintained after reset

Yes

Parameter "Transmission behaviour for felt temperature (wind chill and heat index)"

Define the transmission behavior for the felt temperature.

Options:

Not

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically" .

When sending periodically, the temperature value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically” .

When sending on change, the temperature value is sent on the bus as soon as it changes by the value set here.

Options:

0.5℃

0.2℃

...

2.0℃

5.0℃

4.6 Parameter window “Temperature threshold value”

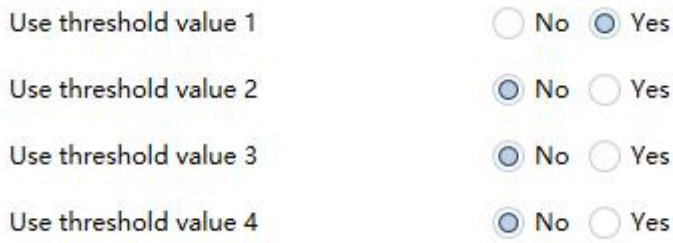


Fig.4.6 Parameter window “Temperature threshold value”

Parameter “Use threshold value 1/2/3/4”

This parameter is used to set whether use temperature threshold value.

Options:

No

Yes

4.6.1 Parameter window “Threshold value 1/2/3/4”

Threshold value:

Maintain the

threshold values and delays received via communication objects	not
Threshold value setpoint per	(•) Parameter ( ) Communication object
Threshold value in 0.1°C	200
Setting the switching distance (hysteresis)	( ) in % (•) absolute
Switching distance (hysteresis) in 0.1°C	50

Swiching output:

Output is at (TV = threshold value) (SD = Switching distance)	TV above = 1 | TV - SD below = 0
Delays can be set via objects (in seconds)	( ) No (•) Yes
Delay from 0 to 1 invalid until 1st communication	1 sec
Delay from 1 to 0 invalid until 1st communication	1 sec
Send switching outputs	on change and periodically
Cycle	5 sec

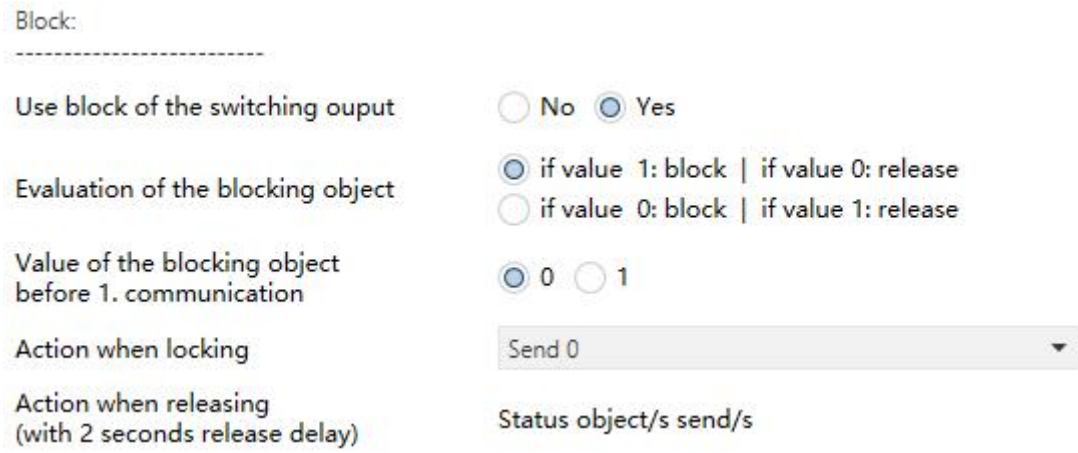


Fig.4.6.1 Parameter window “Temperature threshold value 1/2/3/4”

Threshold value:

Maintain the

Parameter “Threshold value and delay received via communication objects”

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.

Options:

not

After power supply restoration

After power supply restoration and programming

Note: 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).

Parameter “Threshold value setpoint per”

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

Options:

Parameter

Communication object

——Parameter “Threshold value in 0.1℃”

The parameter is visible when previous parameter is selected “parameter” .

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

Options: **-300...800**

Parameter “Setting the switching distance (hysteresis) ”

Parameter “Switching distance (hysteresis) in %”

With both of the methods for specifying the threshold values the switching distance (hysteresis) is set.

The switching distance prevents the switching output of the threshold value from changing too often in the event of temperature fluctuations. When the temperature drops, the switching output does not react until the switching distance falls below the threshold value. When the temperature rises, the switching output only reacts when the switching distance falls below the threshold value.

Options:**In %/absolute**

Options: **0...50/0...1100**

These parameter is visible when “threshold value setpoint per” is selected “communication object” .

——Parameter “Start threshold value in 0.1℃ valid until 1.communication”

If the threshold value is set by a communication object, during the initial commissioning a threshold value must be specified which is valid until the 1st communication of a new threshold value. With weather stations that have already been taken into service, the last threshold value communicated is used.

From the 1st communication, the threshold value corresponds to the value of the communication object and is not multiplied by the factor 0.1.

Once a threshold value is set via parameter or communication object, the last set threshold value remains until a new threshold value is transmitted by a communication object.

The last threshold values set by communications objects are saved in the device, so that they are retained during a power outage and are available once again when power is restored.

Options: **-300...800**

——Parameter "Object value limit (min) in 0.1℃"

——Parameter "Object value limit (max) in 0.1℃"

This parameter is used to set the object value limit.

Options: **-300...800**

——Parameter "Type of threshold change"

This parameter is used to set the type of change to the threshold value .

Options:

Absolute value

Increment/decrement

——Parameter "Step size"

This parameters are visible when previous parameter is selected "Increment/decrement".

This parameter is used to set the set the increment/decrement step size

Options:

0.1℃

0.2℃

...

4℃

5℃

Switching output:

Parameter "Output is at (TV=threshold value)(SD=Switching distance))"

Define which value the output transmits if the threshold value is exceeded or undercut.

Options:

TV above = 1 | TV - SD below = 0

TV above = 0 | TV - SD below = 1

TV below = 1 | TV - SD above = 0

TV below = 0 | TV - SD above = 1

Parameter "Delays can be set via objects (in seconds)"

This parameter is used to set whether delays can be set via objects.

Options:

No

Yes

——Parameter "Switch delay from 0 to 1"

——Parameter "Switch delay from 1 to 0"

These parameters are visible when previous parameter is selected "no".

This parameter is used to set the switch delay from 0 to 1/ 1 to 0.

Options: **none/5 sec/10s/.../1.5h/2h**

Options: **none/5 sec/10s/.../1.5h/2h**

——Parameter "Delay from 0 to 1 invalid until 1st communication"

——Parameter "Delay from 1 to 0 invalid until 1st communication"

These parameters are visible when previous parameter is selected "yes".

This parameter is used to set the delay from 0 to 1/1 to 0 invalid until 1st communication.

Options: **none/5 sec/10s/.../1.5h/2h**

Options: **none/5 sec/10s/.../1.5h/2h**

Parameter "Switching output sends"

This parameter is used to set in which cases the switch output transmits.

Options:

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

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "on change and periodically " , "on change to 1 and periodically " and "on change to 0 and periodically".

When sending periodically, the temperature threshold value switching output is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

Blocking:

Parameter "Use block of the switching output"

With the help of the "Blocking" input object, the switching output can be blocked, e.g. by a manual command (push button).

Options:

No

Yes

Parameters as follow are visible when "Use block of the switching output" is selected "yes".

Parameter "Evaluation of the blocking object"

This parameter is used to set what a 1 or 0 at the block entry means.

Options:

If value 1:block | if value 0:release

If value 0:block | if value 1:release

Parameter "Value of the blocking object before 1. communication"

An object value up to the 1st communication is specified here.

Options:

0

1

Parameter "Action when locking"

Parameter "Action when releasing:(with 2 seconds release delay)"

The behaviour of the switching output during locking can be set.

Options: **do not send telegram/Send 0/Send 1**

Options: **dependent on the value of the parameter "Switching output sends"**

4.7 Parameter window “Frost alarm”

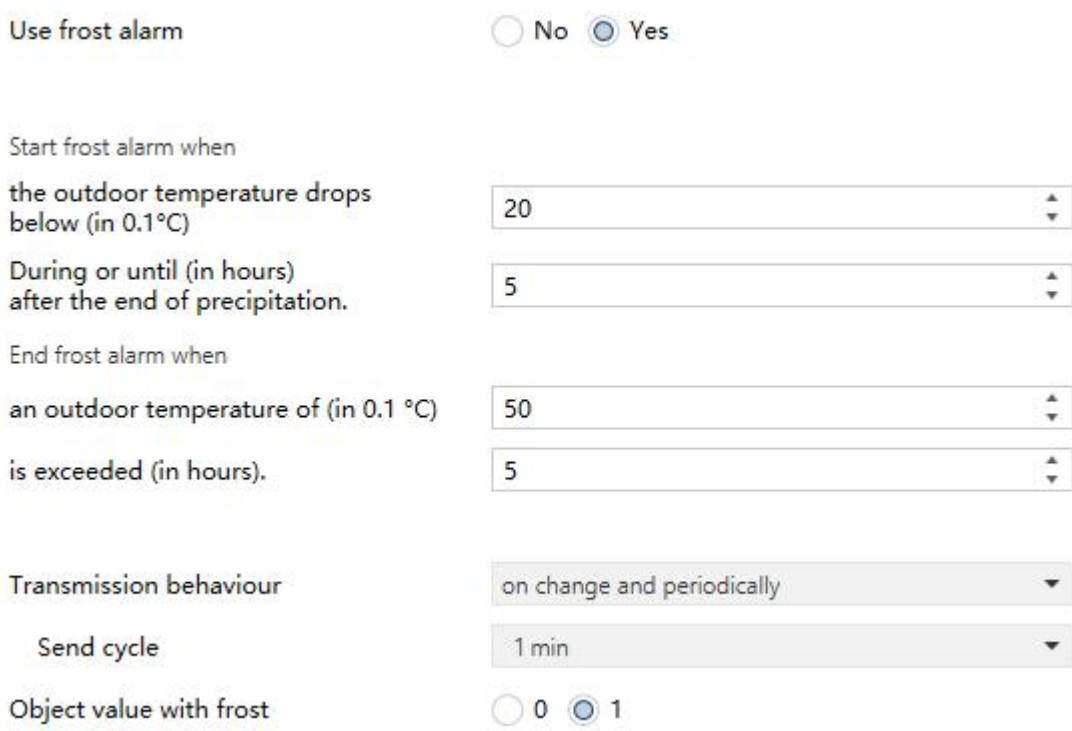


Fig.4.7 Parameter window “Frost alarm”

Parameter “Use frost alarm”

This parameter is used to set whether use frost alarm.

Options:

No

Yes

Parameters as follow are visible when “Use frost alarm” is selected “yes”.

Start frost alarm when/End frost alarm when

Parameter “the outdoor temperature drops below(in 0.1 °C)”

Parameter “During or until (in hours) after the end of precipitation”

Parameter “an outdoor temperature of (in 0.1°C)”

Parameter "is exceeded (in hours)."

Set which conditions are valid for the frost alarm. The frost alarm is active in cold outdoor temperatures in combination with precipitation.

Options: **-50...40**

Options: **1...10**

Options: **30...1000**

Options: **1...10**

Parameter "Transmission behaviour"

This parameter is used to set the transmission behavior of the frost alarm.

Options:

On change

On change to frost

On change to no frost

On change and periodically

On change to frost and periodically

On change to no frost and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "on change and periodically " , "on change to frost and periodically " and "on change to no frost and periodically".

When sending periodically, the frost alarm is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

Parameter "Object value with frost"

Define the object value with frost.

Options:

0

1

4.8 Parameter window “Humidity measured value”

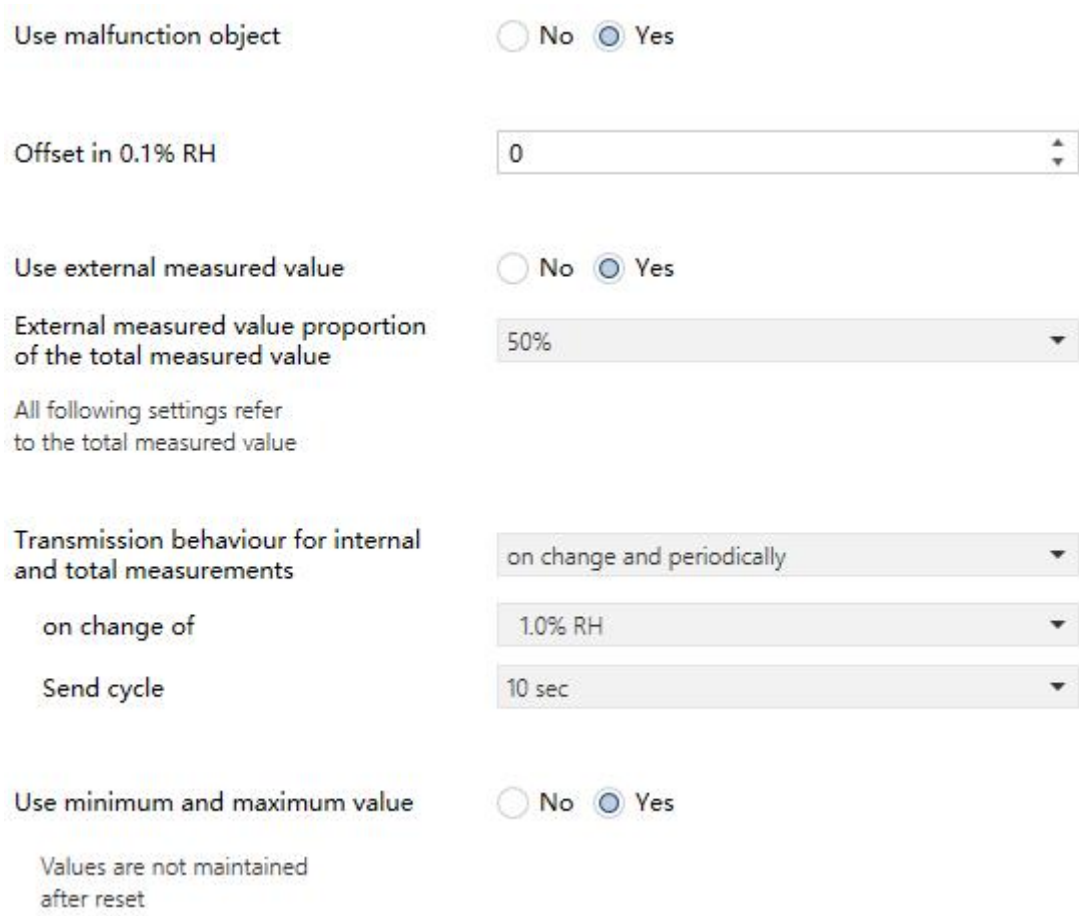


Fig.4.8 Parameter window “Humidity measured value”

Parameter “Use malfunction object”

Select, whether a malfunction object is to be sent if the sensor is faulty.

Options:

No

Yes

Parameter “offset in 0.1% RH”

Use Offsets to adjust the readings to be sent.

Options: **-100...100**

Parameter "Use external measured value"

This parameter is used to set whether use external measured value.

Options:

No

Yes

Parameter "External measured value proportion of the total measured value"

This parameter is used to set external measured value proportion of the total measured value.

Options:

5%

10%

...

95%

100%

All following settings refer to the total measure value

Parameter "Transmission behaviour for internal and total measurements"

This parameter is used to set the transmission behavior of the frost alarm .

Options:

Not

Periodically

On change/

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically " .

When sending periodically, the humidity measured value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter "on change of"

This parameter is visible when previous parameter is selected "on change" and "on change and periodically " .

When sending on change, the humidity measured value sent on the bus as soon as it changes by value set here.

Options:

0.1% RH

0.2% RH

...

10.0% RH

20.0% RH

Parameter "Use minimum and maximum value"

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

Options:

No

Yes

4.9 Parameter window “Humidity threshold value”

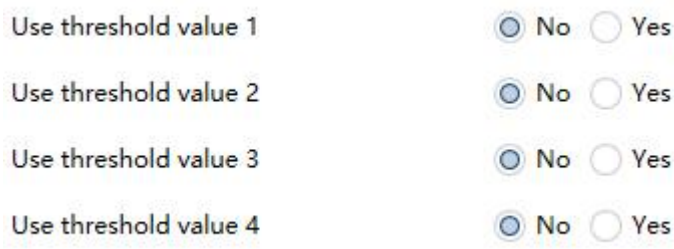


Fig.4.9 Parameter window “Humidity threshold value”

Parameter “Use threshold value 1/2/3/4”

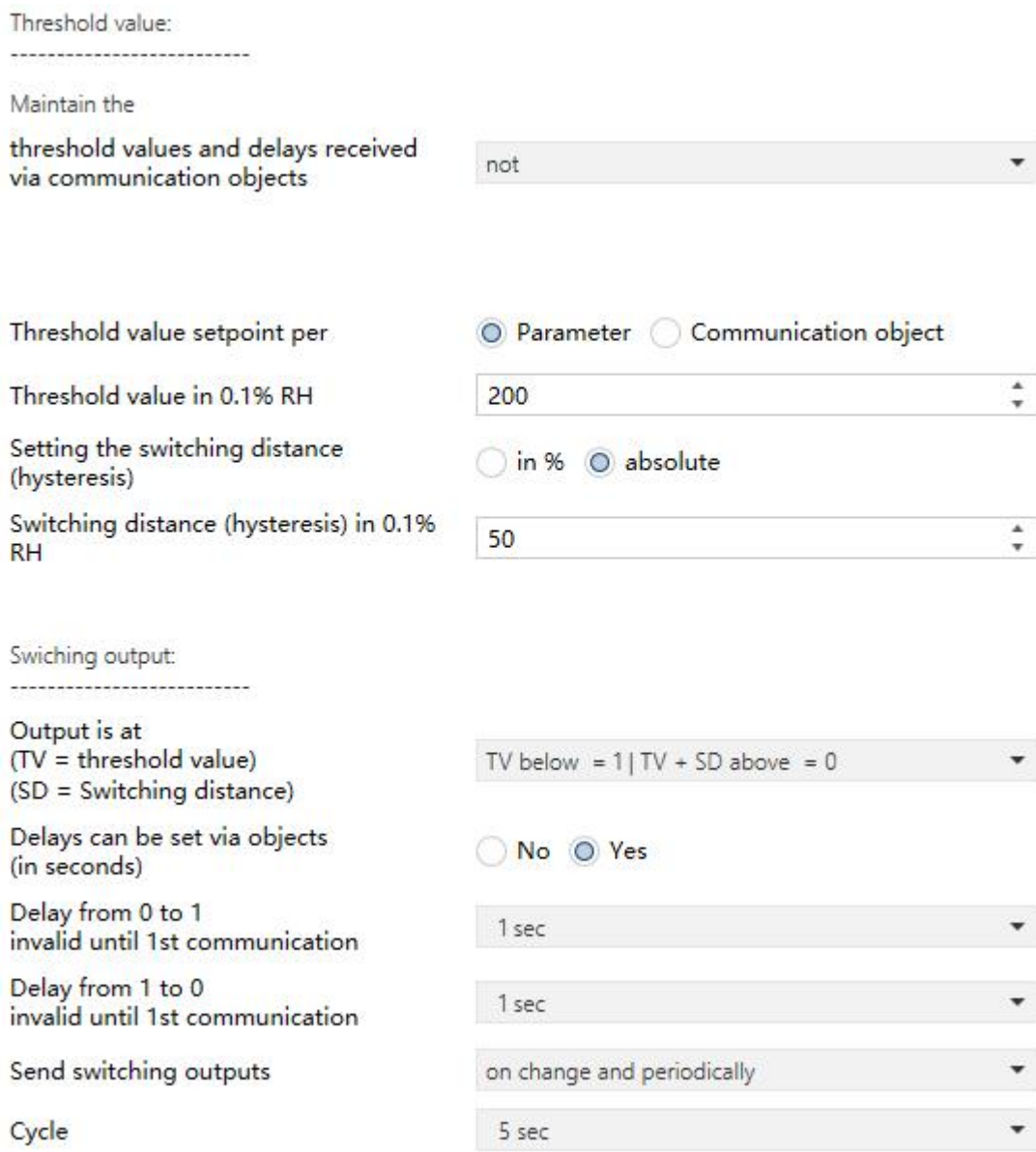
This parameter is used to set whether use air humidity threshold values.

Options:

No

Yes

4.9.1 Parameter window “Threshold value 1/2/3/4”



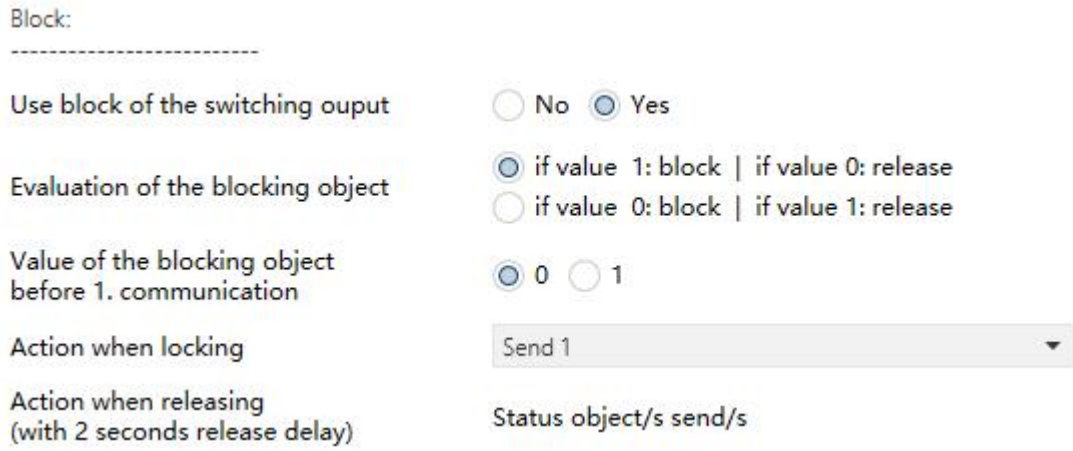


Fig.4.9.1 Parameter window “Threshold value 1/2/3/4”

Parameter “Threshold value in 0.1% RH”

Each threshold value can be set individually.

Options: **1...1000**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.10 Parameter window “Dew point measured value”

The KNX GPS Weather Station pro calculates the dew point temperature and can output the value to the bus.

Fig.4.10 Parameter window “Dew point measured value”

Parameter “Transmission behaviour”

This parameter is used to set the transmission behavior of the dew point measured value.

Options:

Not

Periodically

on change

on change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically ” , “on change and periodically ” .

When sending periodically, the dew point measured value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter "On change of"

This parameter is visible when previous parameter is selected "on change of " , "on change and periodically " .

When sending on change, the dew point measured value sent on the bus as soon as it changes by the value set here.

Options:

0.1°C

0.2°C

...

2.0°C

5.0°C

Parameter "Use monitoring of the cooling medium temperature"

Activate the monitoring of the coolant temperature if required.

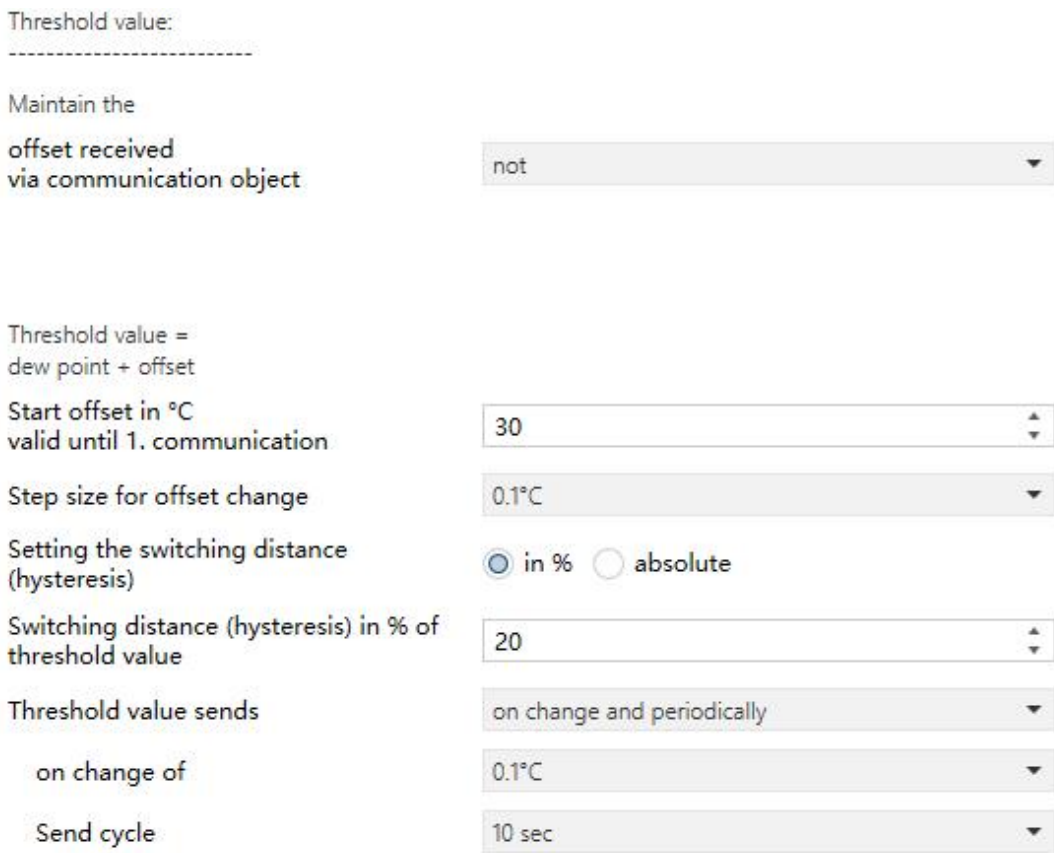
Options:

No

Yes

4.10.1 Parameter window “Cooling medium temp.monitoring”

A threshold value can be set for the temperature of the coolant, which is based on the current dewpoint temperature (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.



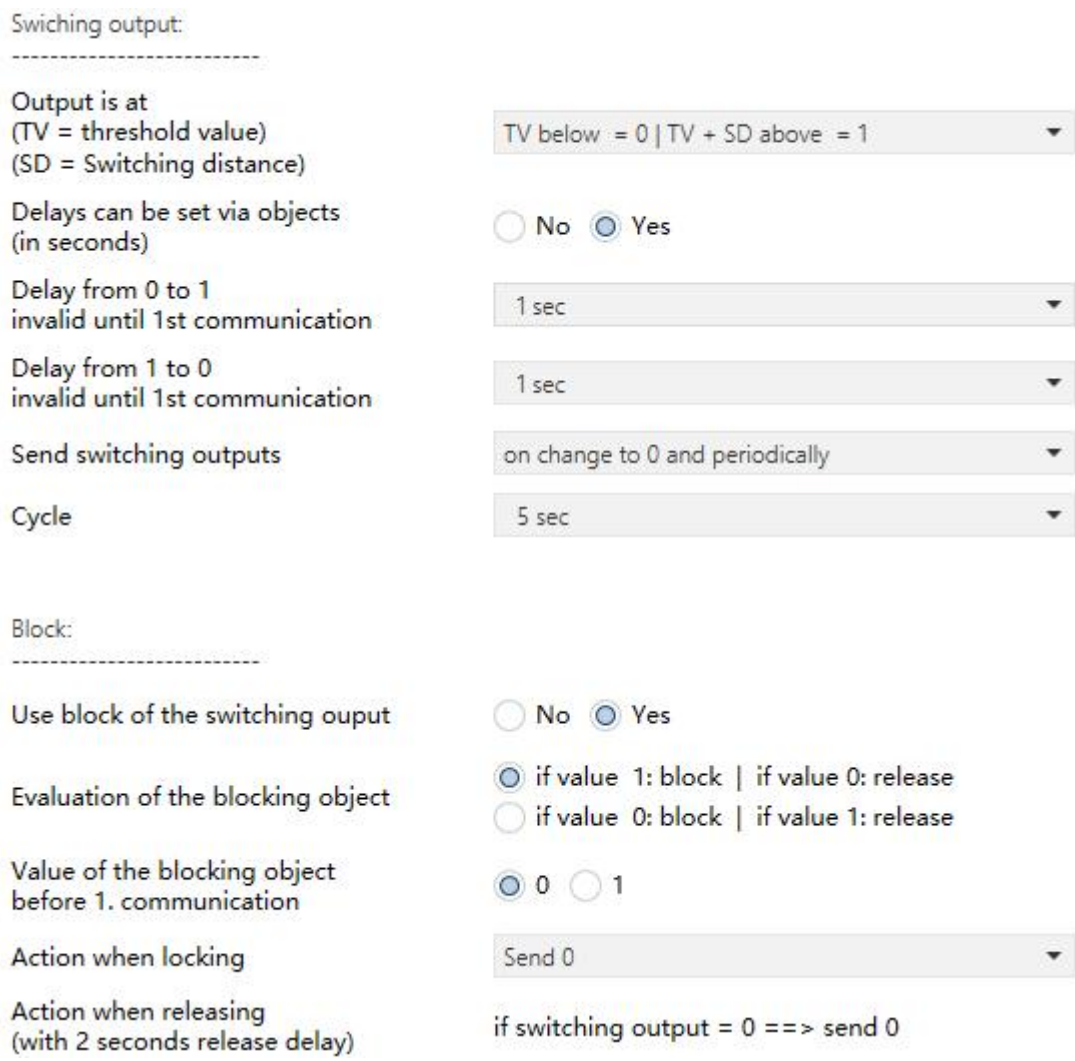


Fig.4.10.1 Parameter window “Cooling medium temp.monitoring”

Parameter “offset received via communication objects”

Set, in which cases offset received via object is to be retained.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note: The setting "After power supply restoration and programming" should not be used for the initial start-up, as the factory settings are always used until the first communication (setting via objects is ignored).

Threshold value = dewpoint temperature + offset

Parameter "Start offset in °C valid until 1.communication"

During initial commissioning, an offset must be defined which is valid until the first communication of 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, so that it is retained in the event of a power supply failure and will be available once the power supply is restored.

Options: **0...200**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.11 Parameter window “Absolute humidity”

The absolute air humidity value is detected by the KNX GPS Weather pro and can be output to the bus.

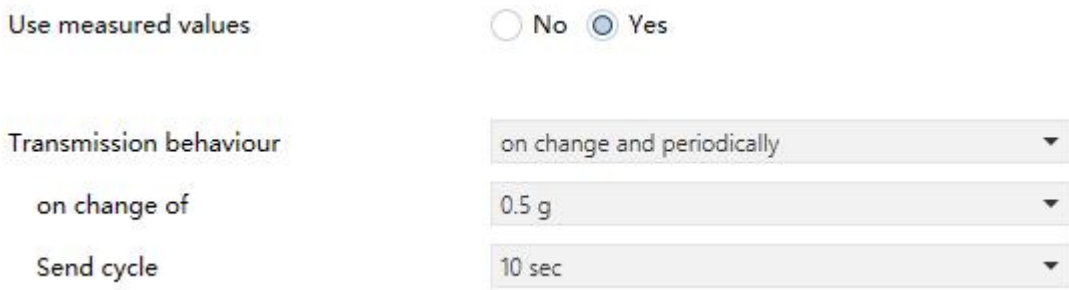


Fig.4.11 Parameter window “Absolute humidity”

Parameter “Use measured values”

This parameter is used to set whether use absolute humidity measured values.

Options:

No

Yes

Parameter “Transmission behaviour”

This parameter is used to set the transmission behavior of the absolute humidity.

Options:

Not

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically ” and “on change and periodically ” .

When sending periodically, the absolute humidity is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “On change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically ” .

When sending on change, the absolute humidity sent on the bus as soon as it changes by the value set here.

Options:

0.1g

0.2g

...

4g

5g

4.12 Parameter window “Comfort field”

The KNX GPS Weather Station pro 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.

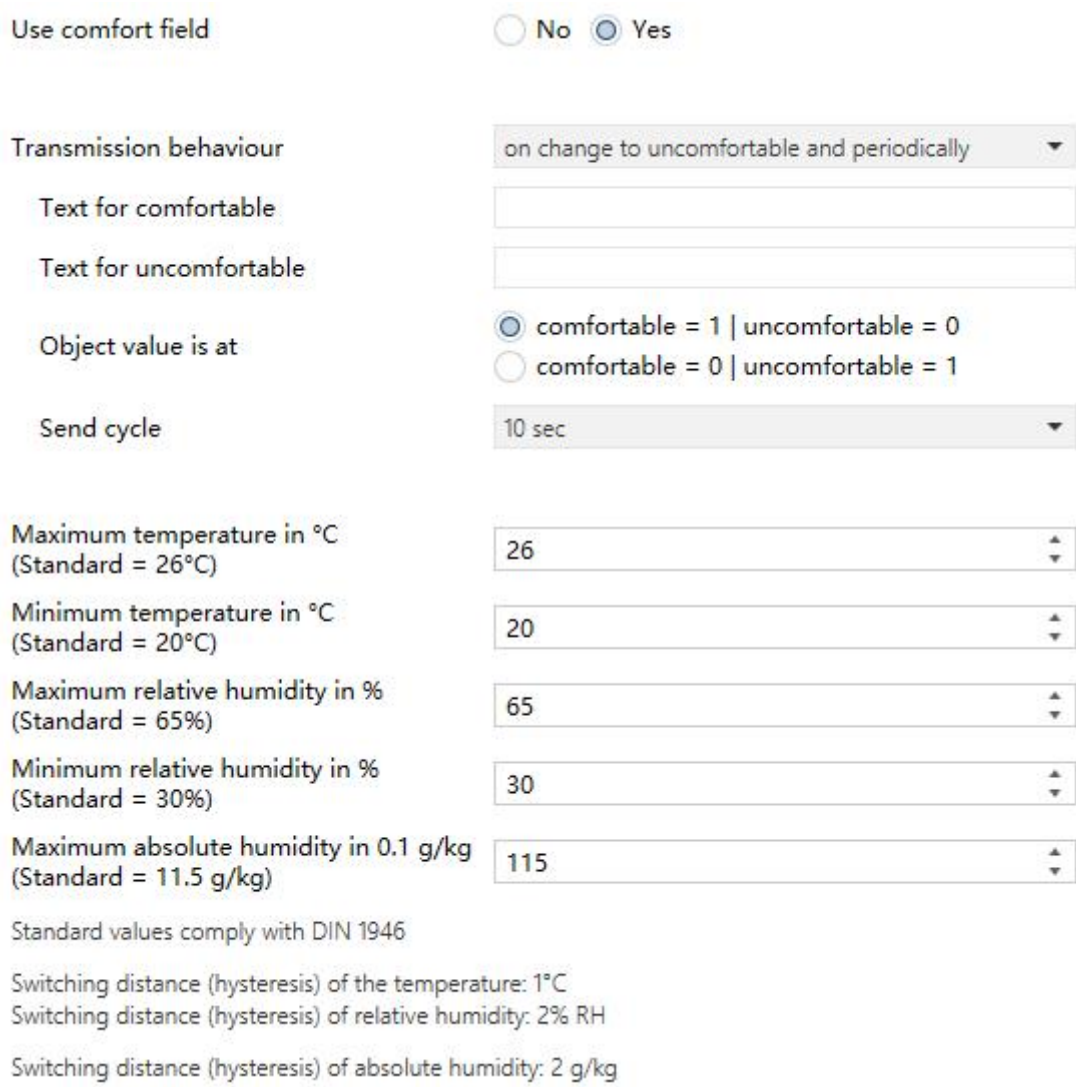


Fig.4.12 Parameter window “Comfort field”

Parameter “Use comfort field”

This parameter is used to set whether use comfort field.

Options:

No

Yes

Parameters as follow are visible when “Use comfort field” is selected “yes”.

Parameter “Transmission behaviour”

This parameter is used to set the transmission behavior of the comfort field.

Options:

Not

On change

On change to comfortable

On change to uncomfortable

On change and periodically

On change to comfortable and periodically

On change to uncomfortable and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “On change and periodically ”, “On change to comfortable and periodically ” and “On change to uncomfortable and periodically” .

When sending periodically, the comfort field is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter "Text for comfortable"

——Parameter "Text for uncomfortable"

Specify the sending text for comfortable and uncomfortable.

Parameters as follow are visible when "Transmission behaviour" is no selected "not".

——Parameter "Object value is at"

Specify the sending how the object value should be.

Options:

Comfortable = 1| uncomfortable = 0

Comfortable = 0| uncomfortable = 1

Parameter "Maximum temperature in °C(Standard = 26°C)"

Parameter "Minimum temperature in °C(Standard = 20°C)"

Parameter "Maximum relative humidity in %(Standard = 26°C)"

Parameter "Minimum relative humidity in %(Standard = 26°C)"

Parameter "Maximum absolute humidity in 0.1 g/kg (Standard = 11.5 g/kg)"

Define the comfort field by specifying the minimum and maximum values for temperature and humidity. The specified standard values comply with DIN 1946

Options: **25...40**

Options: **10...21**Options: **52...90**

Options: **10...43**

Options: **50...2000**

Standard values comply with DIN 1946

Switching distance (hysteresis) of the temperature: 1°C

Switching distance (hysteresis) of relative humidity: 2% RH

Switching distance (hysteresis) of absolute humidity: 2 g/kg

4.13 Parameter window “Brightness”

Set the send pattern for the measured brightness. The highest currently measured value of the five internal sensors is used as the brightness value (since this maximum value is the best basis for shading control, the 5 individual sensor values are not output).

Fig.4.13 Parameter window “Brightness”

Parameter “Transmission behaviour”

This parameter is used to set the transmission behavior of the brightness value.

Options:

Not

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically” and “on change and periodically”.

When sending periodically, the brightness measurement value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “at and above change in %”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically”.

When sending on change, the brightness measurement value sent on the bus as soon as it changes by the value set here.

Options: **1...100**

4.14 Parameter window “Brightness threshold values”

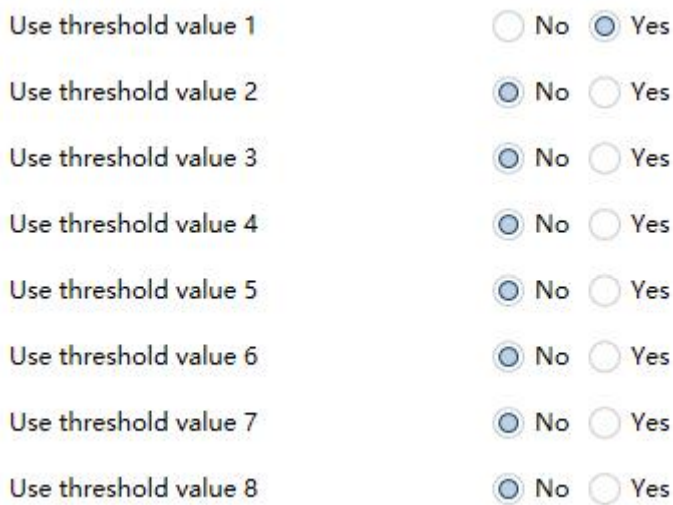


Fig.4.14 Parameter window “Brightness threshold values”

Parameter “Use threshold value 1/2/3/4”

This parameter is used to set whether use brightness threshold values.

Options:

No

Yes

4.14.1 Parameter window “Threshold value 1/.../8”

Threshold value:

Maintain the

threshold values and delays received via communication objects	not
Threshold value setpoint per	Parameter / Communication object
Threshold value in lux	1000
Setting the switching distance (hysteresis)	in % / absolute
Switching distance (hysteresis) in Lux	30000

Swiching output:

Output is at (TV = threshold value) (SD = Switching distance)	TV above = 1 | TV - SD below = 0
Delays can be set via objects (in seconds)	No / Yes
Delay from 0 to 1 invalid until 1st communication	1 sec
Delay from 1 to 0 invalid until 1st communication	1 sec
Send switching outputs	on change and periodically
Cycle	5 sec

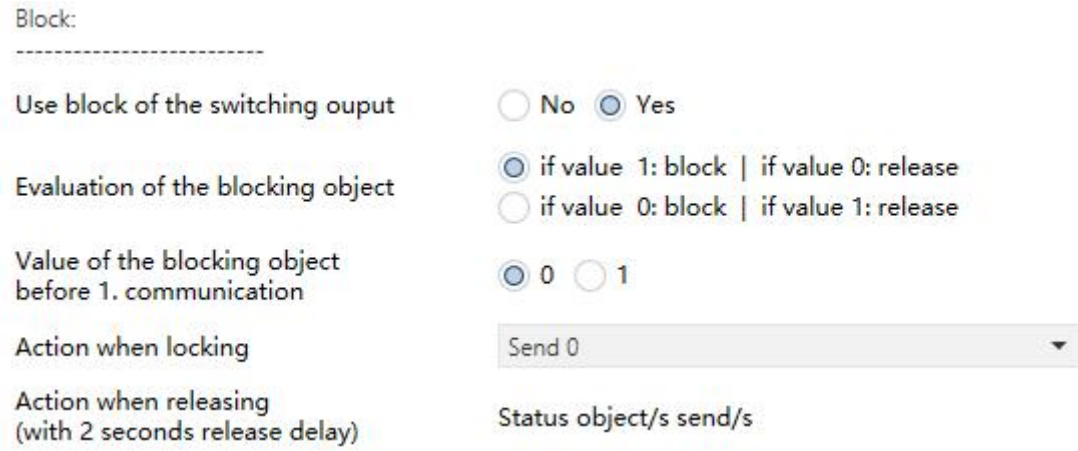


Fig.4.14.1 Parameter window “Threshold value 1/.../8”

Parameter “Threshold value in lux”

Each threshold value can be set individually.

Options: **1000...15000**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.15 Parameter window “Brightness, TV twilight sensor”

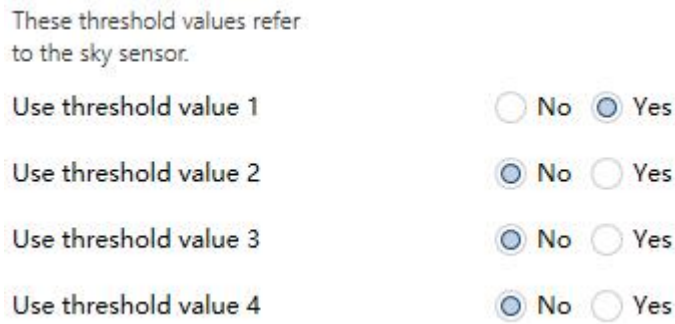


Fig.4.15 Parameter window “Brightness, TV twilight sensor”

These threshold values refer to the sky sensor.

Parameter “Use threshold value 1/2/3/4”

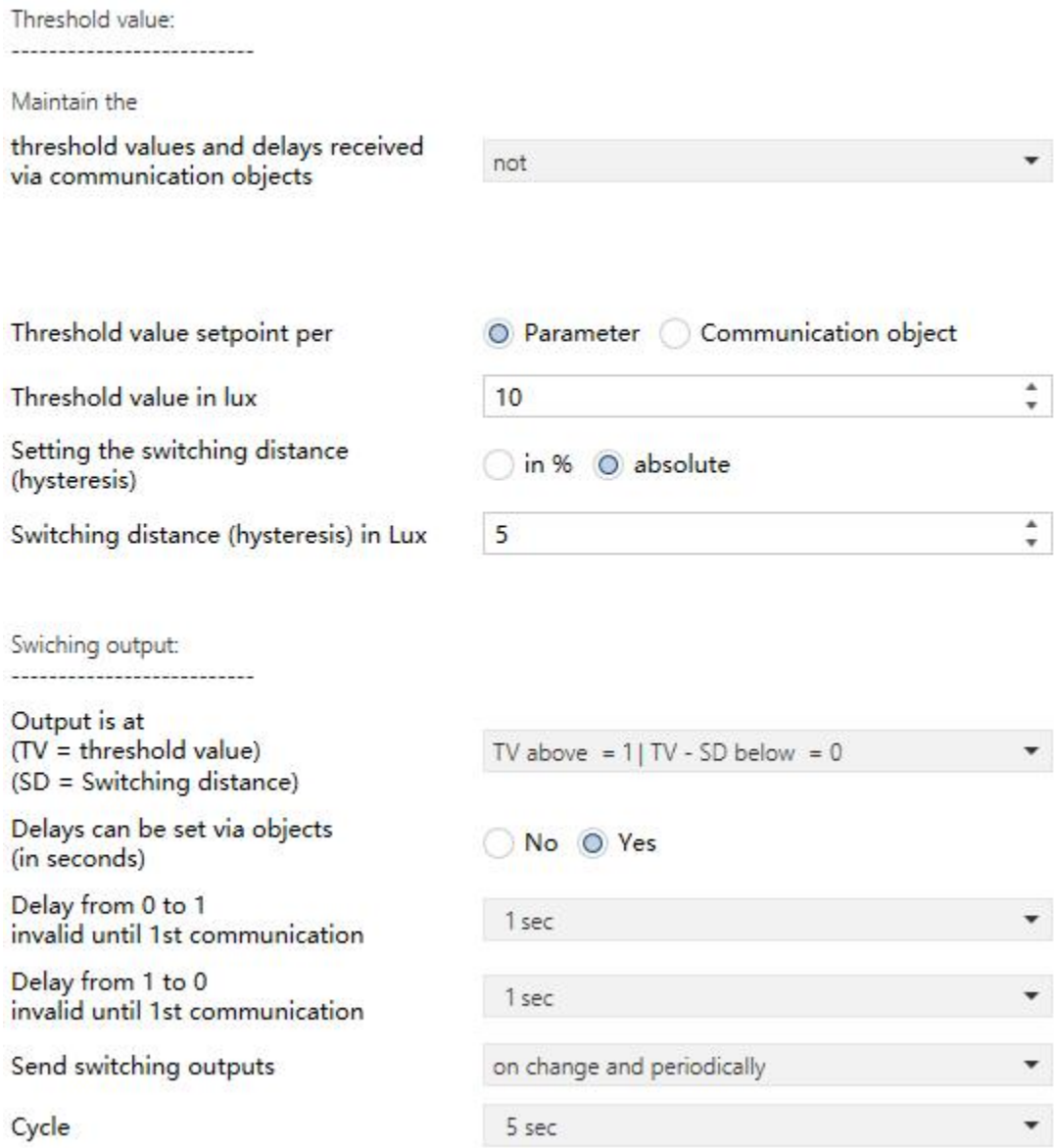
This parameter is used to set whether use twilight brightness threshold value.

Options:

No

Yes

4.15.1 Parameter window “Threshold value 1/2/3/4”



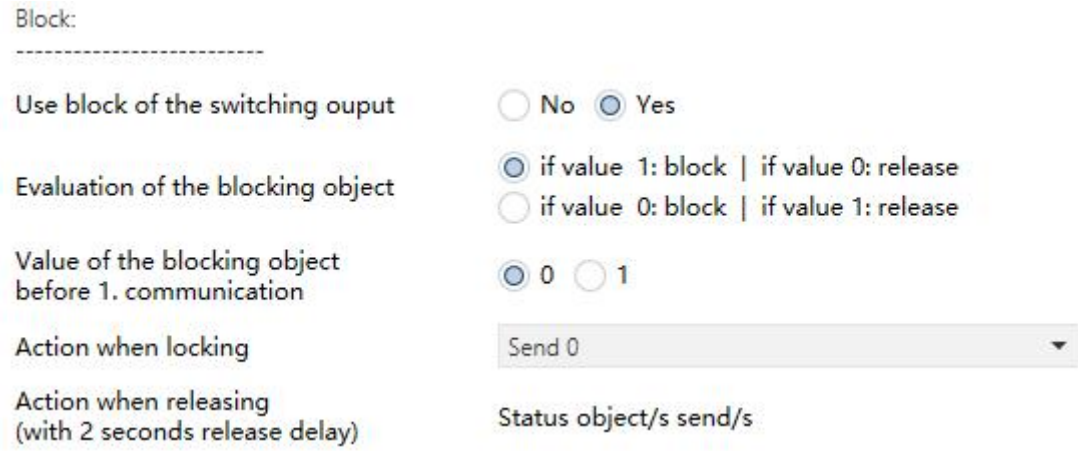


Fig.4.15.1 Parameter window “Threshold value 1/2/3/4”

Parameter “Threshold value in lux”

Each threshold value can be set individually.

Options: **1000...15000**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.16 Parameter window “Night”

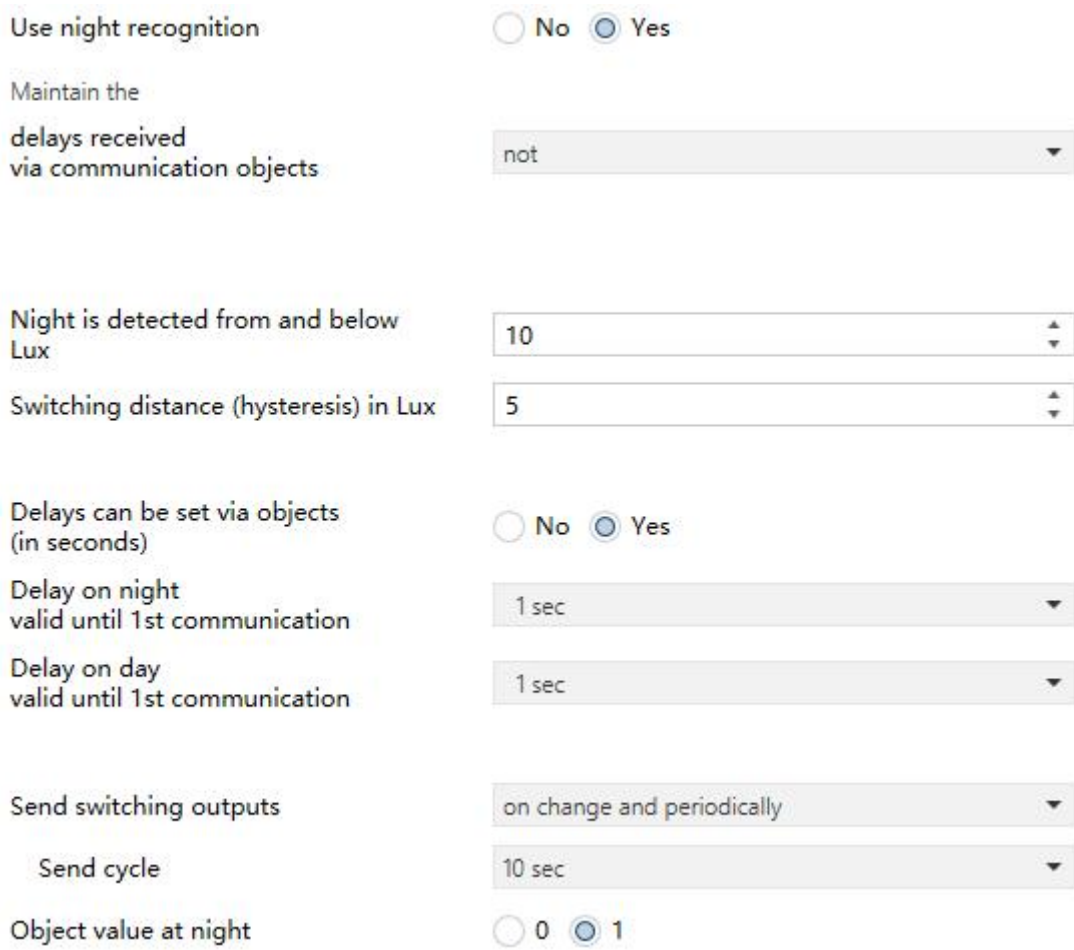


Fig.4.16 Parameter window “Night”

Parameter “Use night recognition”

This parameter is used to set whether use night recognition.

Options:

No

Yes

Parameters as follow are visible when “use night recognition” is selected “yes”.

Parameter “Night is detected from and below Lux”

Parameter “Switching distance (hysteresis) in Lux”

Specify below which brightness the device should recognise "night" and with which switching distance this is to be outputted.

Options: **1...1000**

Options: **0...500**

Parameter “Delays can be set via objects(in seconds)”

The delay times in seconds can be defined via objects.

Options:

No

Yes

——Parameter “Delay on night”

——Parameter “Delay on day”

These parameters are visible when previous parameter is selected “NO”.

Set the delay time for switching night/day.

Options: **none/5 sec/10s/.../1.5h/2h**

——Parameter “Delay on night valid until 1st communication”

——Parameter “Delay on day valid until 1st communication”

These parameters are visible when previous parameter is selected “yes”.

Set the delay time for switching night/day valid until 1st communication.

Options: **none/5 sec/10s/.../1.5h/2h**

Parameter “Switching output sends ”

Here you set when the switching output is to be sent to the bus.

Options:

on change

on change to night

on change to day

on change and periodically

on change to night and periodically

on change to day and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “on change and periodically ” , “on change to night and periodically ” and “on change to day and periodically”.

When sending periodically, the night switching output is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

Parameter “Object value at night”

Define the object value at night.

Options:

0

1

4.17 Parameter window “Sun position”

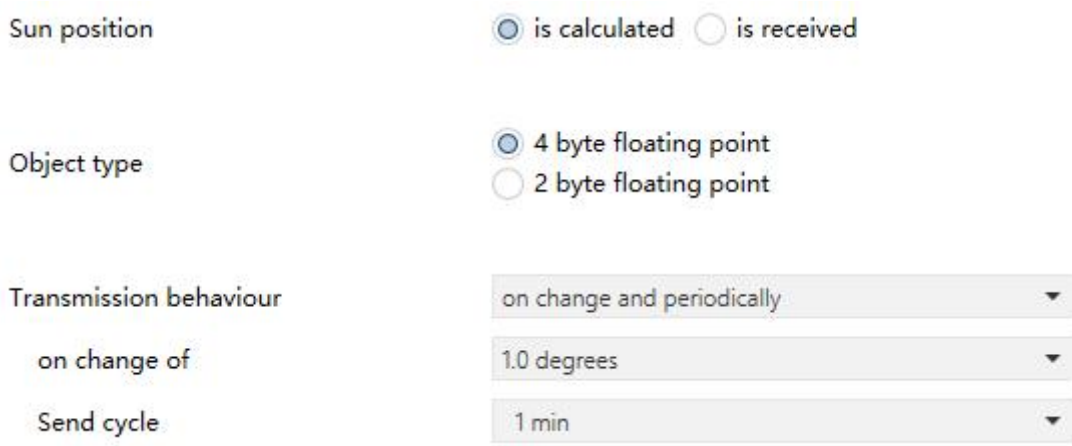


Fig.4.17 Parameter window “Sun position”

Parameter “Sun position”

Select whether the device should calculate the sun position itself or if the values are received via the bus.

Options:

Is calculated

Is received

Parameter “Object type”

This parameter is used to set the object type.

Options:

4 byte floating point

2 byte floating point

Parameter “Transmission behaviour”

This parameter is visible when parameter “Sun position” is selected “is received”.

This parameter is used to set the transmission behavior of the sun position.

Options:

Not

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically” and “on change and periodically ”.

When sending periodically, the sun position is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “On change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically ”.

When sending on change, the sun position sent on the bus as soon as it changes by the value set here.

Options:

0.1 degrees

0.2 degrees

...

5.0 degrees

4.18 Parameter window “Wind measurement”

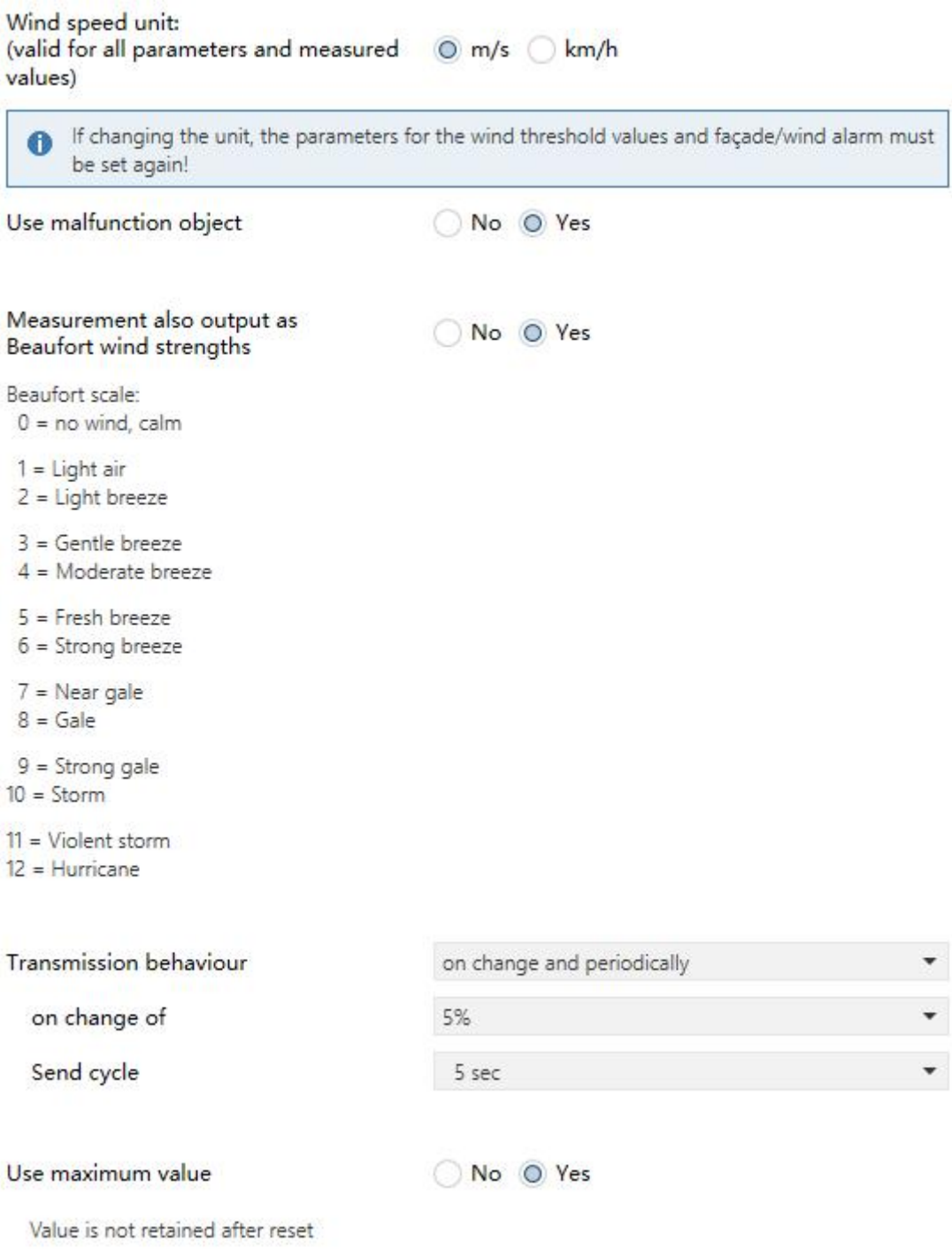


Fig.4.18 Parameter window “Wind measurement”

Parameter "Wind speed unit: (valid for all parameters and measured values)"

This parameter is used to set the wind speed unit.

Options:

M/s

Km/h

Parameter "Use malfunction object"

This parameter is used to set whether use malfunction object.

Options:

No

Yes

Parameter "Measurement also output as Beaufort wind strengths"

This parameter is used to set whether measurements are output as beaufort wind strengths.

Options:

No

Yes

Beaufort scale:

0=no wind,calm

1=Light air

2=Light breeze

3=Gentle breeze

4=Moderate Breeze

5=Fresh Breeze

6=Strong Breeze

7=Near gale

8=Gale

9=Strong gale

10=Storm

11=Violent storm

12=Hurricane

Parameter "Transmission behaviour"

This parameter is used to set the transmission behavior of the wind measurement.

Options:

Not

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically".

When sending periodically, the wind measurement value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically”.

When sending on change, the wind measurement value is sent on the bus as soon as it changes by the value set here.

Options:

2%

5%

...

25%

50%

Parameter “Use maximum values”

This parameter is used to set whether use maximum values.

Options:

No

Yes

4.19 Parameter window “Wind threshold value”

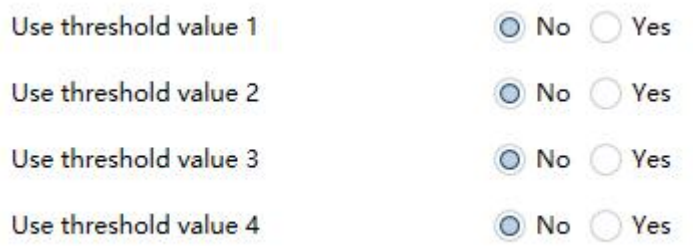


Fig.4.19 Parameter window “Wind threshold value”

Parameter “Use threshold value 1/2/3/4”

This parameter is used to set whether use wind threshold value.

Options:

No

Yes

4.19.1 Parameter window “Threshold value 1/2/3/4”

Threshold value:

Maintain the

threshold values and delays received via communication objects	not
Threshold value setpoint per	Parameter / Communication object
Threshold value in 0.1 m/s	40
Setting the switching distance (hysteresis)	in % / absolute
Switching distance (hysteresis) in 0.1 m/s	20

Swiching output:

Output is at (TV = threshold value) (SD = Switching distance)	TV above = 1 | TV - SD below = 0
Delays can be set via objects (in seconds)	No / Yes
Delay from 0 to 1 invalid until 1st communication	1 sec
Delay from 1 to 0 invalid until 1st communication	1 sec
Send switching outputs	on change and periodically
Cycle	5 sec

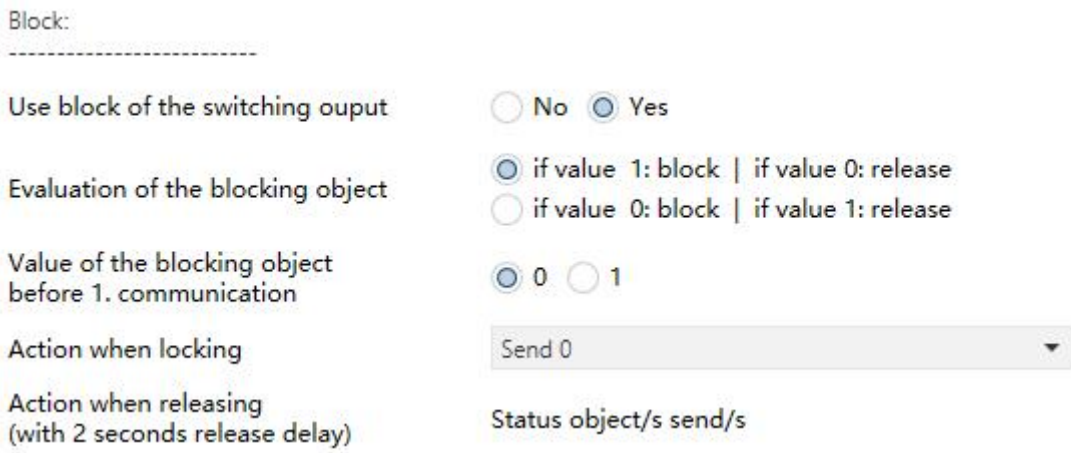


Fig.4.7.1 Parameter window “Wind threshold value 1/2/3/4”

Parameter “Threshold value in 0.1m/s”

Each threshold value can be set individually.

Options:**1...350**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.20 Parameter window “Wind direction”

Measured value object:

Send measured value	on change and periodically
on change of	5°
Send cycle	5 sec
Send measured value as:	○ 1 byte object ◉ 4 byte object

Text object:

Send wind direction as text	on change and periodically
Wind direction Switching distance (hysteresis)	5°
Send cycle:	5 sec
at lower wind speed (v < 0.5 m/s):	Windstille
North (0°):	Nord
North-East (45°):	Nord-Ost
East (90°):	Ost
South-East (135°):	Süd-Ost
South (180°):	Süd
South-West (225°):	Süd-West
West (270°):	West
North-West (315°):	Nord-West

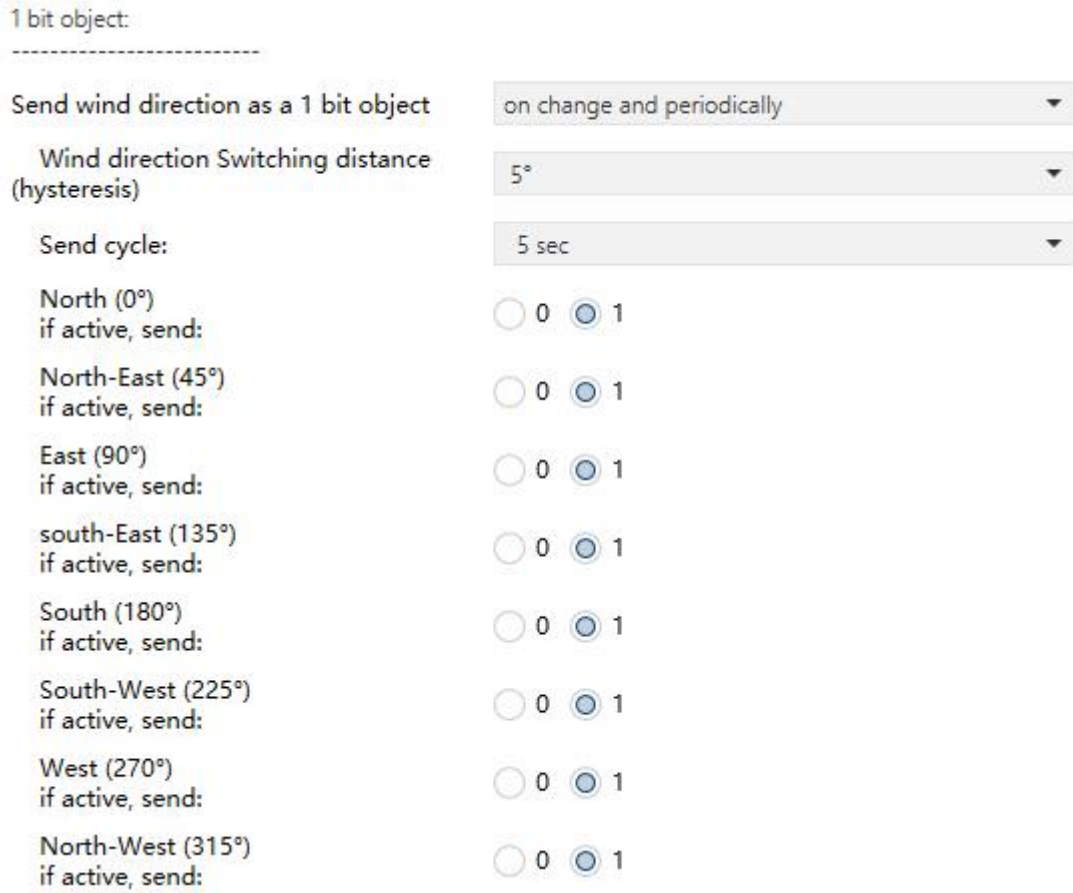


Fig.4.20 Parameter window “Wind direction”

Measured value object:

Parameter “Send measured value”

This parameter is used to set the transmission behavior of the wind direction measured value.

Options:

No

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically” and “on change and periodically”.

When sending periodically, the wind direction measured value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically”.

When sending on change, the wind direction measured value is sent on the bus as soon as it changes by the value set here.

Options:

2%

5%

...

25%

50%

——Parameter “send measured value as:”

This parameter is visible when previous parameter is no selected “no”.

This parameter is used to set the send measured value as 1 byte object or 4 byte object.

Options:

1 byte object

4 byte object

Text object:

Parameter "Send wind direction as text"

Specify whether the wind direction should be sent as text.

Options:

No

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically".

When sending periodically, the wind direction measure value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter "Wind direction switching distance (hysteresis)"

This parameter is visible when previous parameter is selected "on change" and "on change and periodically".

When sending on change, the wind direction switching distance sent on the bus as soon as it changes by the value set here.

Options:

0°

1°

...

16°

20°

Parameter "at lower wind speed (v<0.5 m/s)"

Parameter "North (0°)"

Parameter "North-East(45°)"

Parameter "East(90°)"

Parameter "South-East(135°)"

Parameter "South(180°)"

Parameter "South-West(225°)"

Parameter "West(270°)"

Parameter "North-West(315°)"

This parameter customizes the text description of the wind direction sent to the bus.

1 bit object:

Parameter "Send wind direction as a 1 bit object"

Specify whether the wind direction is to be sent as a 1 bit object.

Options:

No

Periodically

On change

On change and periodically

——Parameter “Send cycle”

This parameter is visible when previous parameter is selected “periodically” and “on change and periodically”.

When sending periodically, the wind direction measure value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “Wind direction switching distance (hysteresis)”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically”.

When sending on change, the wind direction switching distance sent on the bus as soon as it changes by the value set here.

Options:

0°

1°

...

16°

20°

Parameter "North (0°) if active,send:"

Parameter "North-East(45°) if active,send:"

Parameter "East(90°) if active,send:"

Parameter "South-East(135°) if active,send:"

Parameter "South(180°) if active,send:"

Parameter "South-West(225°) if active,send:"

Parameter "West(270°) if active,send:"

Parameter "North-West(315°) if active,send:"

This parameter customizes the text description of the wind direction sent to the bus.

Options:

0

1

4.21 Parameter window “Wind direction ranges”

Parameter “Use range 1/2/3”

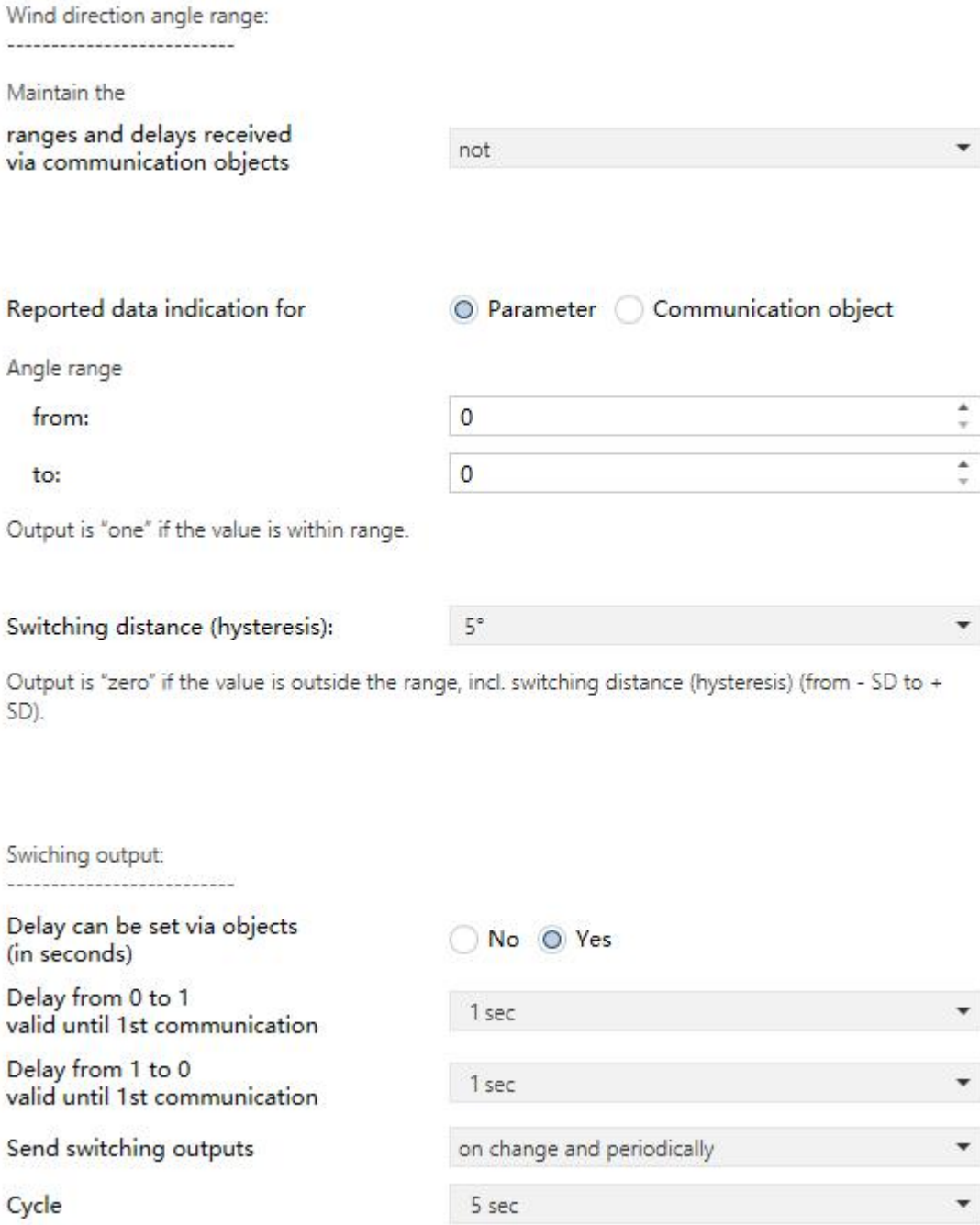
This parameter is used to set whether use wind direction ranges.

Options:

No

Yes

4.21.1 Parameter window “Range 1/2/3/4”



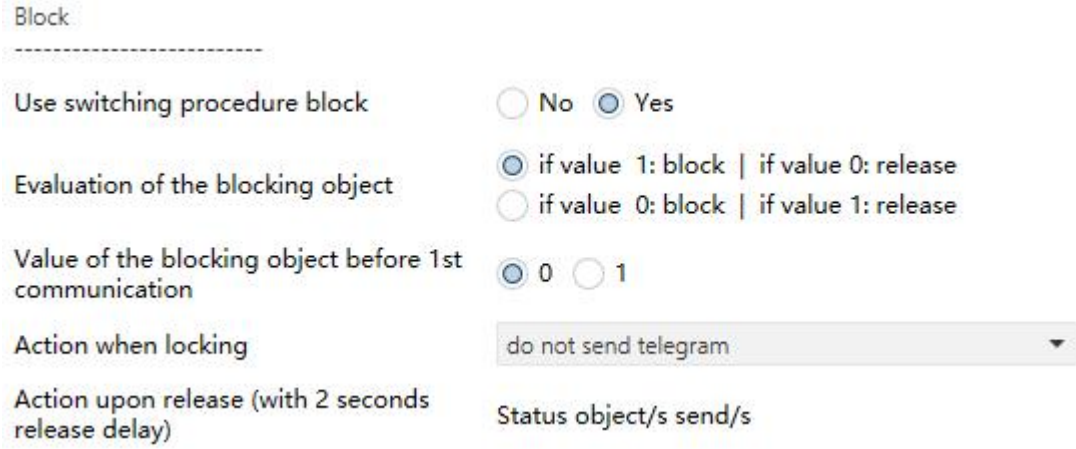


Fig.4.21.1 Parameter window “Range 1/2/3/4”

Wind direction angle range:

Maintain the

Parameter "Ranges and delays received via communication objects"

Set, in which cases ranges 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.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note: 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).

Parameter "Reported data indication for"

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

Options:

Parameter

Communication object

Parameter "Switching distance (hysteresis)"

This parameter is used to set the switching distance.

Options:

0°

5°

...

16°

20°

These parameter is visible when "reported data indication for" is selected "Parameter" .

Angel range

——Parameter "from:"

——Parameter "to:"

When the angle range per parameter is specified, then the value is set.

Options: **0...359**

These parameter is visible when "Threshold value setpoint per" is selected "Communication object" .

——Parameter "Type of threshold change"

This parameter is used to set the type of threshold change.

Options:

Absolute value

Increment/decrement

——Parameter "Step size"

This parameters are visible when previous parameter is selected "Increment/decrement".

This parameter is used to set the increment/decrement step size.

Options:

1°

2°

...

20°

30°

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.22 Parameter window “Pressure measured value”

Air pressure unit: Pa
(1 Pa = 0.01 hPa = 0.01 mbar)

Normal air pressure:
at sea level, temperature-compensated

Barometric pressure:
direct sensor measurement

Typical normal air pressure values:

up to 98,000 Pa: Pressure is very low
==> Weather is stormy

98,000...100,000 Pa: Pressure is low
==> Weather is rainy

100,000...102,000 Pa: Pressure is normal
==> Weather is changeable

102,000...104,000 Pa: Pressure is high
==> Weather is sunny

at and above 104,000 Pa: Pressure is very high==> Weather is very dry

Use malfunction object	○ No ◉ Yes
Measurement also output as barometric pressure	○ No ◉ Yes
Transmit behaviour measurement	on change and periodically
on change of	10 Pa
Send cycle	1 min
Use minimum and maximum value	○ No ◉ Yes

Values are not maintained
after reset

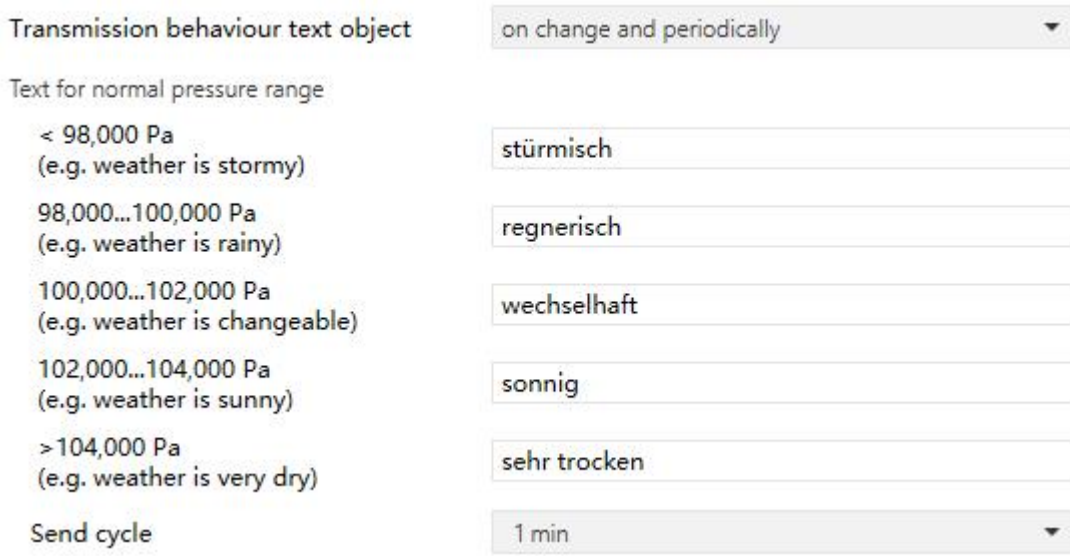


Fig.4.22 Parameter window “Pressure measured value”

Air pressure unit: Pa

(1 Pa=0.01hPa=0.01mbar)

Normal air pressure:

At sea level, temperature-compensated

Barometric pressure:

Direct sensor measurement

Typical normal air pressure values:

Up to 98,000 Pa:Pressure is very low

==>Weather is rainy

100,000...102,000 Pa:Pressure is high

==>Weather is changeable

102,000...104,000 Pa:Pressure is high

==>Weather is sunny

At and above 104,000 Pa:pressure is bery

high==>Weather is very dry

Parameter "Use malfunction object"

This parameter is used to set whether use malfunction object.

Options:

No

Yes

Parameter "Measurement also output as barometric pressure"

Specify whether the measured value is, in addition, to be outputted as barometric pressure (see below Information on air pressure).

Options:

No

Yes

Parameter "Transmit behaviour measurement"

This parameter is used to set the transmission behavior of the pressure measured value sent to the bus.

Options:

No

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically".

When sending periodically, the pressure measured value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter “on change of”

This parameter is visible when previous parameter is selected “on change” and “on change and periodically”.

When sending on change, the pressure measured value is sent on the bus as soon as it changes by the value set here.

Options:

10Pa

20Pa

...

200Pa

500Pa

Parameter “Use minimum and maximum value”

This parameter is used to set whether use minimum and maximum value.

Options:

No

Yes

Values are not maintained after reset

Parameter “Transmission behaviour text object”

Specify whether the pressure measured value should be sent as text.

Options:

No

Periodically

On change

On change and periodically

Text for normal pressure range

Parameter "<98.000 Pa (e.g. weather is stormy)"

Parameter "<98.000 ... 1000.000 Pa (e.g. weather is rainy)"

Parameter "100.000...102.000 Pa (e.g.weather is changeable)"

Parameter "102.000...104.000 Pa (e.g. weather is sunny)"

Parameter ">104.000 Pa (e.g. weather is bety dry)"

This parameter customizes the text description of the wind direction sent to the bus.

——Parameter "Send cycle"

This parameter is visible when parameter "Transmission behaviour text object" is selected "periodically" and "on change and periodically".

When sending periodically, the pressure measure value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

4.23 Parameter window “Pressure threshold values”

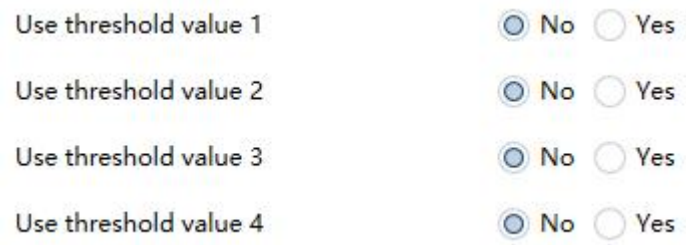


Fig.4.9 Parameter window “Pressure threshold values”

Parameter “Use threshold value 1/2/3/4”

This parameter is used to set whether use pressure threshold value.

Options:

No

Yes

4.23.1 Parameter window “Threshold value 1/2/3/4”

Threshold value:

Maintain the

threshold values and delays received via communication objects	not
Type of measurement for threshold value calculation	○ Normal air pressure ◉ Barometric pressure
Threshold value setpoint per	◉ Parameter ○ Communication object
Threshold value in 10 Pa	10200
Setting the switching distance (hysteresis)	○ in % ◉ absolute
Switching distance (hysteresis) in 10 Pa	100

Swiching output:

Output is at (TV = threshold value) (SD = Switching distance)	TV above = 1 | TV - SD below = 0
Delays can be set via objects (in seconds)	○ No ◉ Yes
Delay from 0 to 1 invalid until 1st communication	1 sec
Delay from 1 to 0 invalid until 1st communication	1 sec
Send switching outputs	on change and periodically
Cycle	5 sec

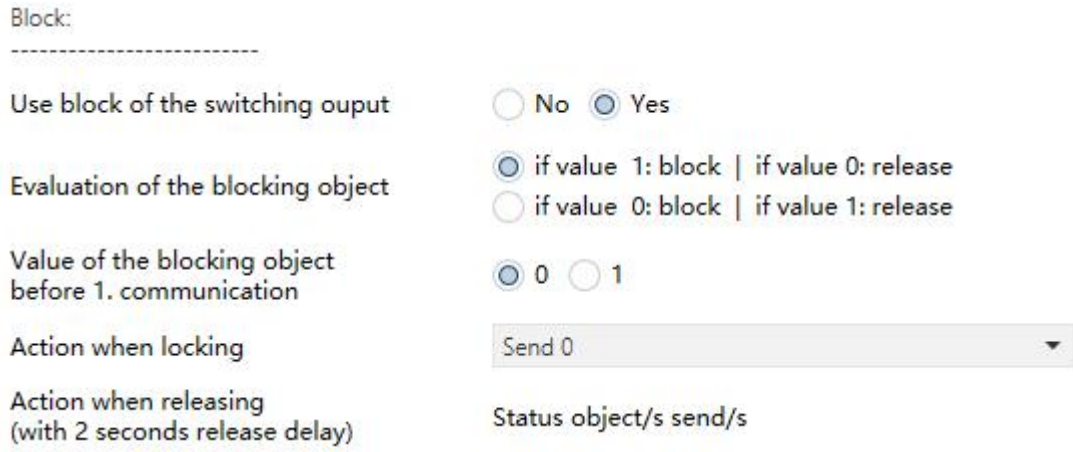


Fig.4.9 Parameter window "Threshold value 1/2/3/4"

Parameter "Type of measurement for threshold value calculation"

This parameter is used to set the type of measurement for threshold value calculation.

Options:

Normal air pressure

Barometric pressure

Parameter "Threshold value in 10Pa"

Each threshold value can be set individually.

Options: **3000...11000**

Other parameter settings are similar to those of the temperature threshold values, see chapter 4.6.1 for detailed operations.

4.24 Parameter window “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.

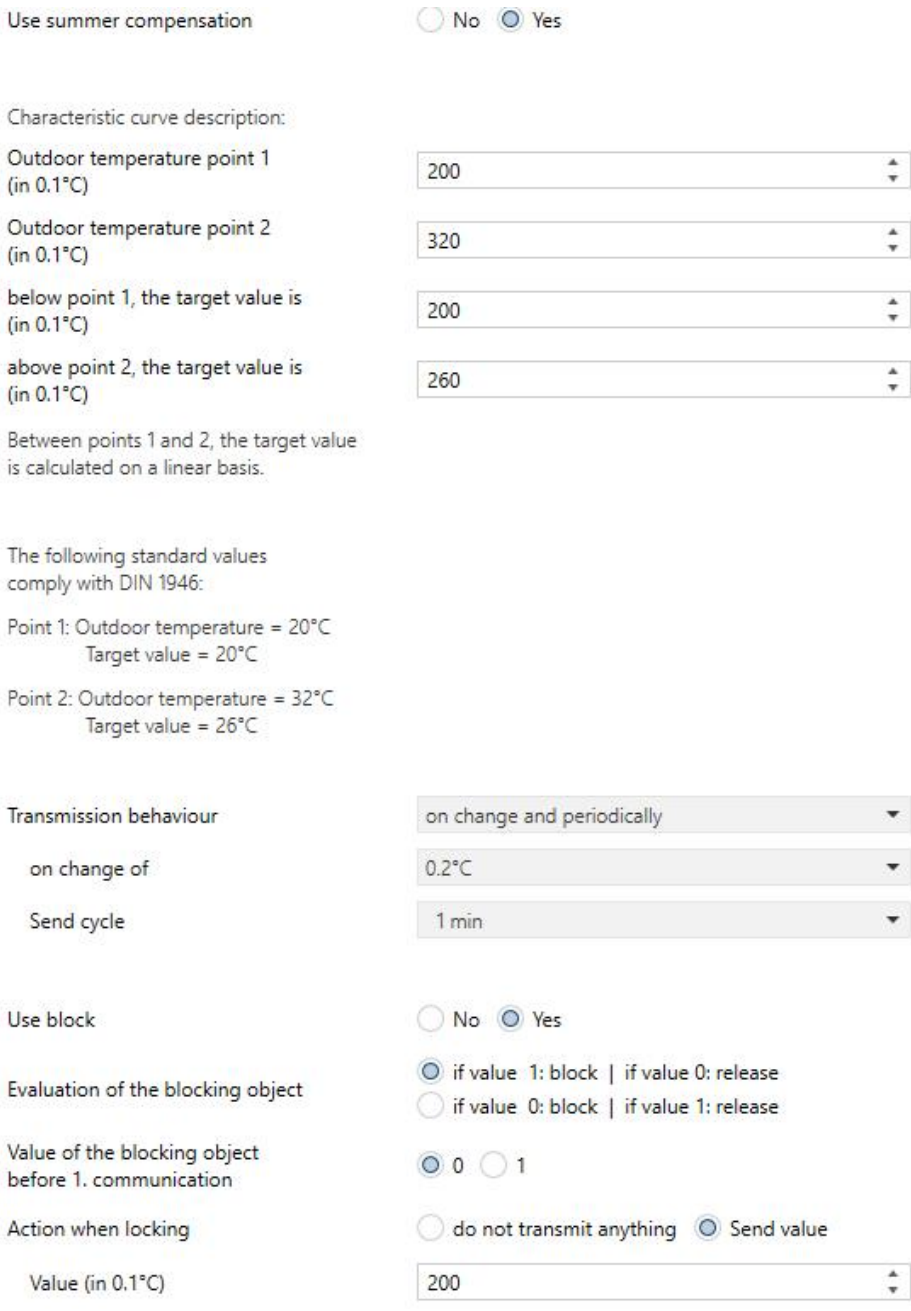


Fig.4.24 Parameter window “Summer compensation”

Parameter "Use summer compensation"

This parameter is used to set whether use summer compensation.

Options:

No

Yes

Parameters as follow are visible when "use summer compensation" is selected "yes".

Characteristic curve description:

Parameter "Outdoor temperature point 1(in 0.1°C)"

Parameter "Outdoor temperature point 2(in 0.1°C)"

Parameter "below point 1, the target value is(in 0.1°C)"

Parameter "above point 2, the target value is(in 0.1°C)"

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.

Options: **0...500**

Between points 1 and 2, the target value is calculated on a linear basis.

The following standard values

Comply with DIN 1946:

Point 1: Outdoor temperature = 20°C

Target value = 20°C

Point 2: Outdoor temperature = 32°C

Target value = 26°C

Parameter "Transmit behaviour"

This parameter is used to set the transmission behavior of the summer compensation value.

Options:

Periodically

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "periodically" and "on change and periodically".

When sending periodically, the summer compensation value is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10s

...

1.5h

2h

——Parameter "on change of"

This parameter is visible when previous parameter is selected "on change" and "on change and periodically".

When sending on change, the summer compensation value is sent on the bus as soon as it changes by the value set here.

Options:

0.1℃

0.2℃

...

2.0°C

5.0°C

Parameter "Use block"

This parameter is used to set whether activate the block for the summer compensation.

Options:

No

Yes

Parameters as follow are visible when "use block" is selected "yes".

Parameter "Evaluation of the blocking object"

This parameter is used to set what a 1 or 0 at the block entry means.

Options:

If value 1:block | if value 0: release

If value 0:block | if value 1: release

Parameter "Value of the blocking object before 1.communication"

An object value up to the 1st communication is specified here.

Options:

0

1

Parameter "Action when locking"

This parameter is used to set the action when locking.

Options:

Do not transmit anything

Send value

——Parameter “Value (in 0.1℃)”

This parameter is visible when previous parameter is selected “send value”.

This parameter is used to set the value to be sent when locking.

Options: **0...500**

4.25 Parameter window “Facades”

If necessary, activate the facade controller (shading controller). When the facade controller is activated, the objects for the simulation of various parameter settings can also be activated. For this simulation, with the exception of a retraction delay (10 seconds),no time functions (delay times etc.) are used. Please observe the instructions for the simulation in chapter 4.25.1.7 Simulation.

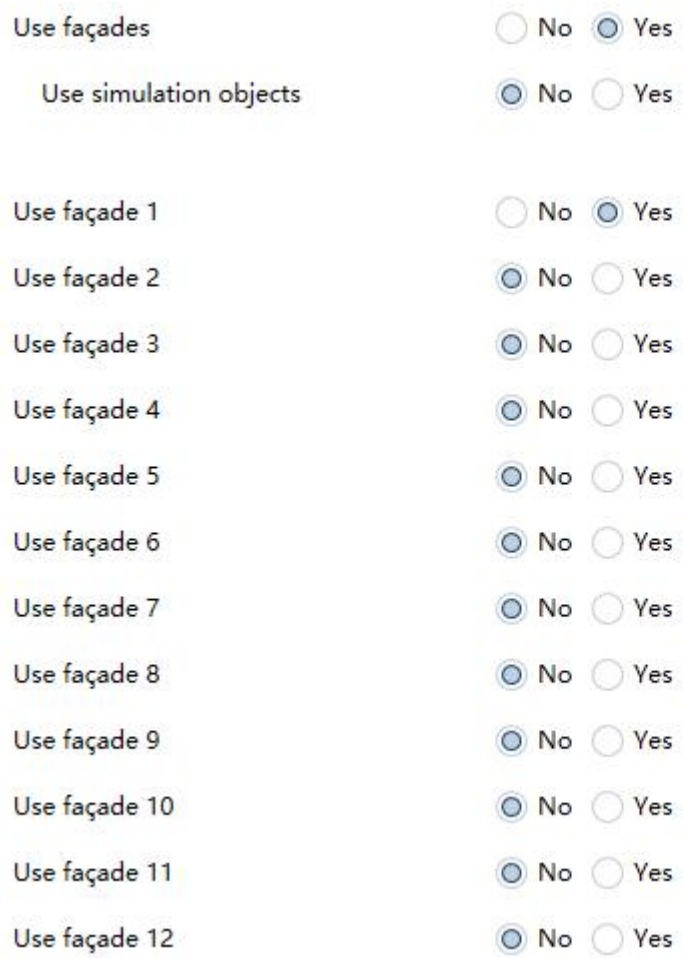


Fig.4.25(1)

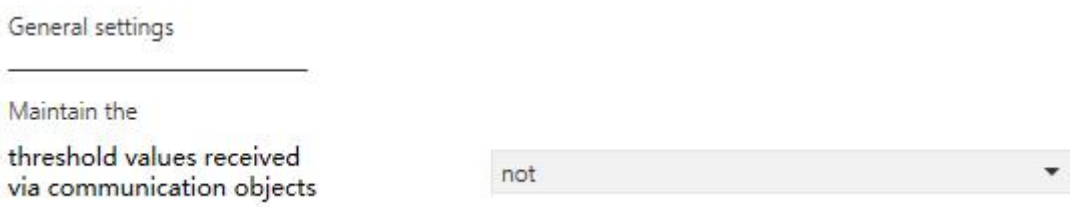


Fig.4.25(2)Facades_General settings

Fig.4.25(3)Facades_Live monitoring

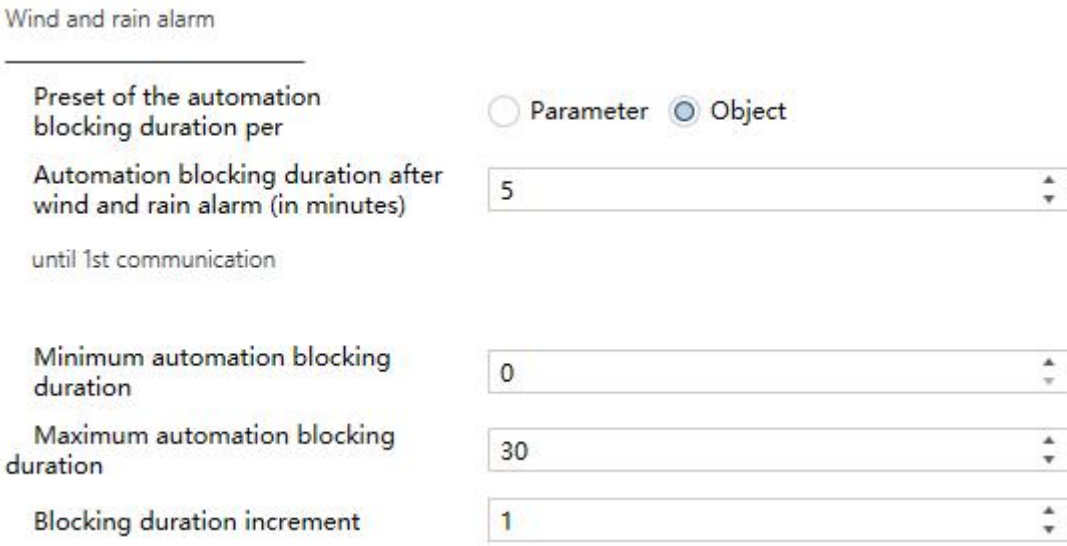


Fig.4.25(4)Facades_Wind and rain alarm

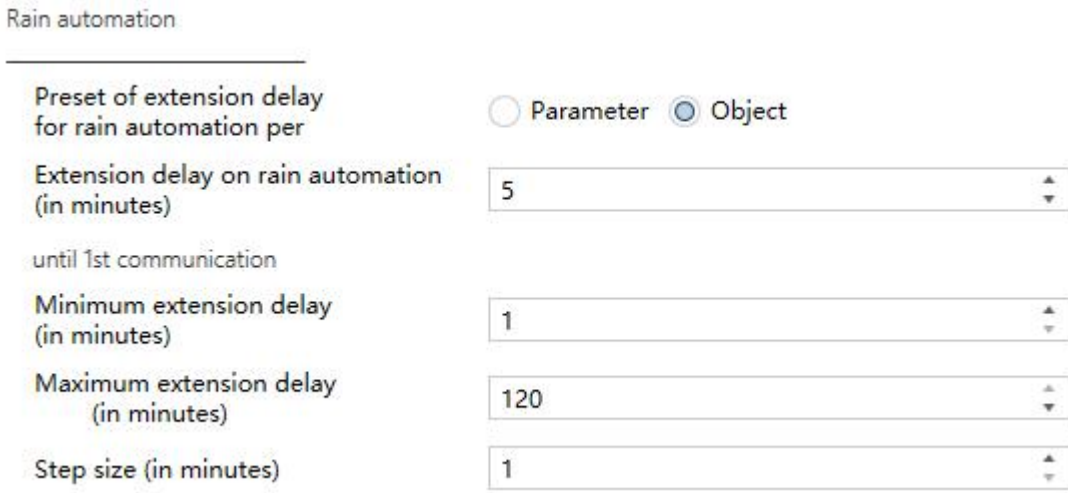


Fig.4.25(5)Facades_Rain automation

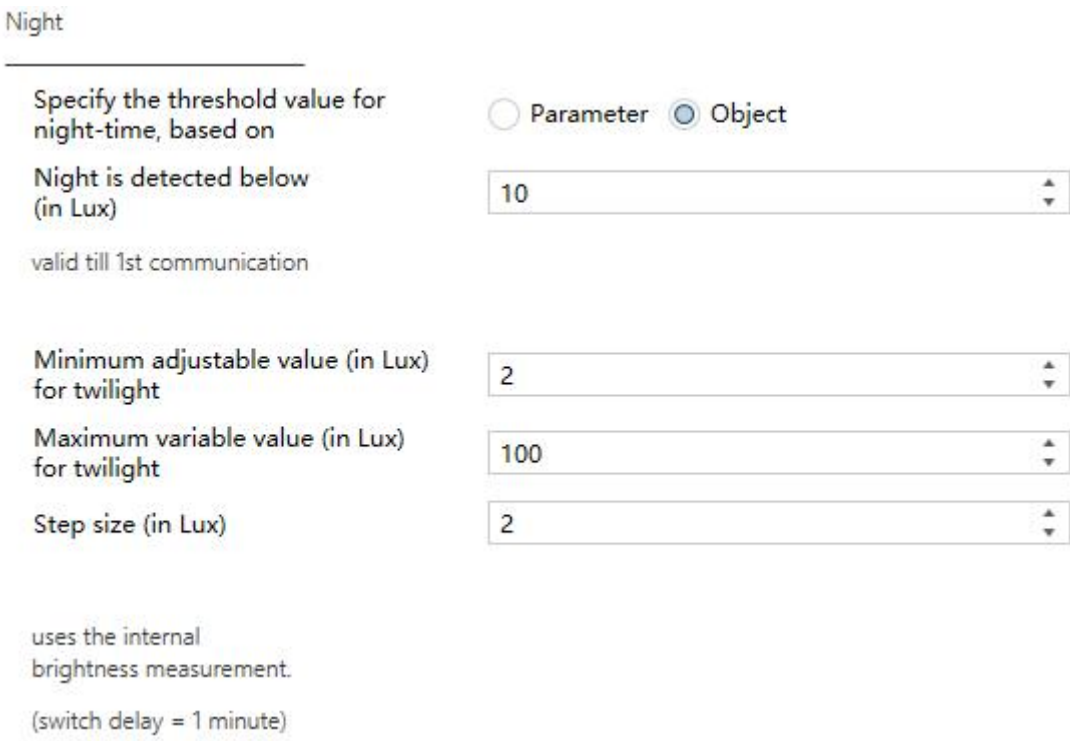


Fig.4.25(6)Facades_Night

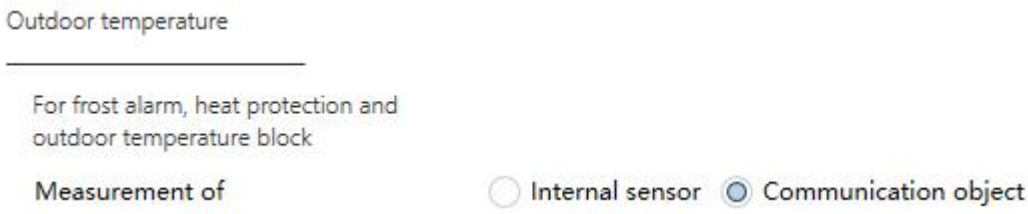


Fig.4.25(7)Facades_Outdoor temperature

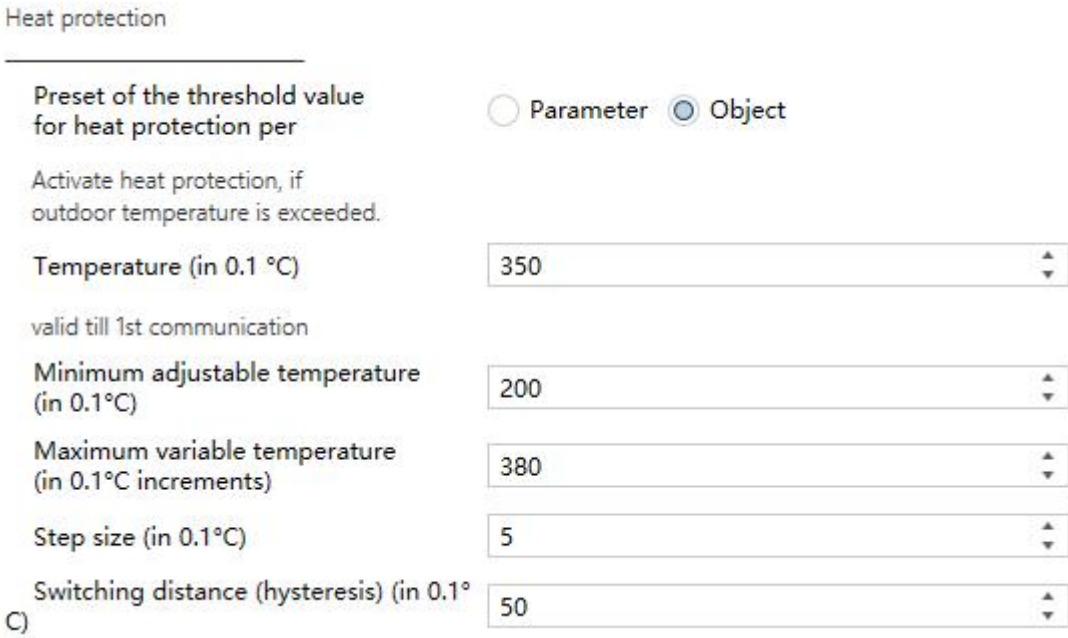


Fig.4.25(8)Facades_Heat protection

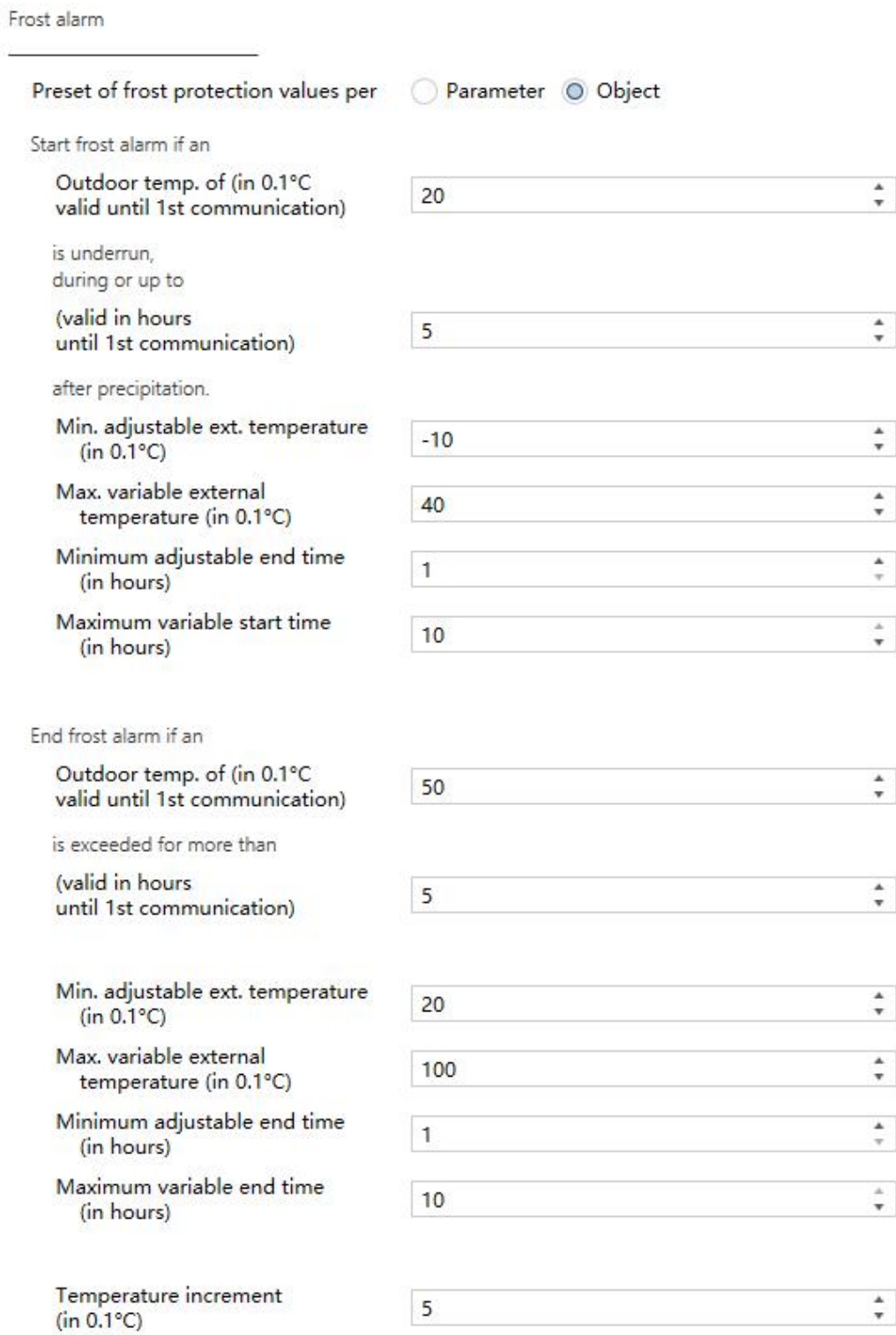


Fig.4.25(9)Facades_Frost alarm

Fig.4.25(10)Facades_Facades status output

Fig.4.25(11)Facades_Text that are output with object”Facade X channel state text”

Texts that are output with object "Façade X channel status bit text"

Block automation using communication object	Auto. Sperre
Wind extension block status	Windausfahrsp.
Wind alarm status	Windalarm
Rain alarm status	Regenalarm
Rain automation status	Regenautomatik
Frost alarm status	Frostalarm
Safety status	Sicherheit
Time open status	Zeitöffnen
Outdoor temperature block status	A-temp Sperre
Night closure status	Nachtschließen
Timed closure status	Zeitschließen
Heat protection status	Hitzeschutz
Pyranometer status	Pyranometer
Indoor temperature blocking status	I-Temp Sperre
Sun shining on façade Status	Sonne auf Fass
Sun bright, short retraction delay status	Hellig. kurz
Sun bright, long retraction delay status	Hellig. lang

Fig.4.25(12)Facades_Text that are output with object"Facade X channel state bit text"

Parameter "Use facades"

This parameter is used to set whether use facades.

Options:

No

Yes

Parameters as follow are visible when “use facades” is selected “yes”.

Parameter “Use simulation objects”

This parameter is used to set whether use simulation objects.

Options:

No

Yes

During simulation, no times(delays,etc) are used.

Only retraction delay in the automatic solar protection is 10 seconds for simulation.

Parameter “Use facade 1/../12”

This parameter is used to activate the required facades individually in order to load the menus for the safety and automation functions.

Options:

No

Yes

General settings

Maintain the

Parameter “threshold values received via communication objects”

Set, in which cases threshold values received are to be kept per object.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note: 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).

Live monitoring

Parameter "Use wind and rain object monitoring"

If the functionality of the wind and rain sensors is to be checked, use wind and rain object monitoring. If data is not regularly being received from the sensors, a defect is assumed and the corresponding alarm is triggered.

Options:

No

Yes

——Parameter "Monitoring period"

This parameter is visible when previous parameter is selected "yes".

This parameter is used to set the monitoring period.

Options:

5sec

10sec

...

1h

2h

Note: Independently of live monitoring, the measured values for wind, outdoor temperature and global radiation (pyranometer) are monitored for changes. After 48 hours without any change in the measured values a defect is assumed and the corresponding function is set to alarm or block. No settings are required for this.

Wind and rain alarm:

Set the automation block for wind and rain alarm. Please observe, that this block begins after the end of the wind or rain alarm and is only valid for automation. It avoids frequent extension and retraction during rapidly changing weather conditions. Manual operation is again possible directly after the end of the alarm.

Parameter "Preset of the automation blocking duration per"

Parameter "Automation blocking duration after wind and rain alarm(in minutes)"

The duration of the blocking can be specified by parameter or received as an object via the bus.

Options: **Parameter/Object**

Options: **0...360**

Parameters as follow are visible when "Preset of the automation blocking duration per" is selected "object".

Parameter "Minimum automation blocking duration"

Parameter "Maximum automation blocking duration"

Parameter "Blocking duration increment"

When specifying the blocking duration by object the minimum and maximum blocking duration and the increment for the change to the parameter are also defined.

Options: **0...360**

Options: **0...360**

Options: **0...50**

Rain automation:

For external shades either a rain alarm or a rain automation can be set which have opposite functions. The selection is made in the chapter 4.25.1 facade X: Function, safety.

The rain alarm protects the shading against getting wet. The rain automation ensures that the shading is, under certain conditions, extended during rainfall. The curtain can thus be cleaned by natural means. Please observe the specifications from the manufacturer of the curtain and set the rain alarm or automation accordingly.

Rain alarm: Shading is retracted as soon as precipitation is signalled and is blocked during the precipitation.

Rain automation: Precipitation is only considered in preset periods. A rain position is approached. The extension delay during precipitation can be set.

Parameter "Preset of extension delay for rain automation per"

Parameter "Extension delay on rain automation(in minutes)"

If a rain automation has been set for the shading, then the extension delay can be specified directly via parameter or received as an object via the bus.

Options:**Parameter/Object**

Options: **1...120**

Night

Parameter "Specify the threshold value for night-time, based on"

Parameter "Night is detected below (in Lux)"

Set the night threshold value. The threshold value can be specified directly by parameter or received as an object via the bus. The device's internally measured value is used for brightness. The switching delay between day and night is 1 minute.

Options: **Parameter/Object**

Options: **1...200**

Parameters as follow are visible when "Preset of extension delay for rain automation per" is selected "object".

Parameter "Minimum adjustable value (in Lux) for twilight"

Parameter "Maximum adjustable value (in Lux) for twilight"

Parameter "Step size (in Lux)"

When specifying the threshold value by object the minimum and maximum values that can be set for twilight values and the increment for the change are also defined.

Options: **1...200**

Options: **1...200**

Options: **1...10**

Outdoor temperature

For frost alarm,heat protection and outdoor temperature block

Parameter "Measurement of"

Define which outdoor temperature value for frost alarm, heat protection and outdoor temperature block are to be used. The device's own internal values or a value received via a communication object can be used.

Options:

Internal sensor

Communication object

Note: After 48 hours without any change in the value a defect is assumed and the frost alarm, heat protection and outdoor temperature block are activated.

Heat protection

Parameter "Preset of the threshold value for heat protection per"

Parameter "Temperature (in 0.1°C)"

Parameter "Switching distance (hysteresis) (in 0.1°C)"

Define the outdoor temperature for the heat protection. The threshold value can be specified directly by parameter or received as an object via the bus.

Options: **Parameter/Object**

Options: **100...500**

Options: **10...200**

Parameters as follow are visible when "Preset of the threshold value for heat protection per" is selected "object".

Parameter "Minimum adjustable temperature(in 0.1°C)"

Parameter "Maximum adjustable temperature(in 0.1°C)"

Parameter "Step size (in 0.1°C)"

When specifying the threshold value by object the minimum and maximum values that can be set for temperature and the increment for the change are also defined.

Options: **100...500**

Options: **100...500**

Options: **1...10**

Frost alarm

This frost alarm is only used within the facade controller and is independent of the general parameter Frost alarm.

Parameter "Preset of frost protection values per"

Parameter "outdoor temperature of (0.1 °C)"

Parameter "(in hours)"

The frost alarm is active in cold outdoor temperatures in combination with precipitation. The conditions can be specified directly by parameter or received as an object via the bus.

Options: **Parameter/Object**

Options: **-200...300**

Options: **1...10**

Parameters as follow are visible when "Preset of frost protection value per" is selected "object".

Start/End frost alarm if an

Parameter "Minimum adjustable ext. temperature(in 0.1°C)"

Parameter "Max. Variable external temperature (in 0.1°C)"

Parameter "Minimum adjustable end time (in hours)"

Parameter "Maximum variable start time (in hours)"

Parameter "Temperature increment (in 0.1°C)"

When specifying the conditions by object the minimum and maximum temperature and time values that can be set and the temperature increment for the change are also defined.

Options: **-200...300**

Options: **-200...300**

Options: **1...10**

Options: **1...10**

Options: **0...255**

Facades status output

Information on the various possibilities for the status output can be found in chapter 4.25.1.8 Status output . In principal the status output is a singular function, but, in compact form, possible for singular and for all facades possible. For the output in a compact form pre-sets are made here and the output texts defined.

Parameter "Analysis of the status release object"

Parameter "Value up to 1st communication"

Set which value in the status release object for all facades means active respectively inactive.

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Texts that are output with object "Facade X channel state text"

For the status output the status bit selected (i.e. the function) and, if applicable, also the active facade is output. As a result, it can easily be visualised which status is just being issued. The texts can be adapted individually and should, as a maximum, be 14 characters long.

Parameter "Safety"

Parameter "Automatic delay after alarm"

Parameter "Wind extension block"

Parameter "Time open"

Parameter "Outdoor temperature block"

Parameter "Time/night closure"

Parameter "Heat protection"

Parameter "Pyranometer"

Parameter "Rain automation"

Parameter "Interior temperature lock"

Parameter "Shading because of the sun"

Parameter "No automation active"

Texts that are output with object "Facade X channel status bit text"

Parameter "Block automation using communication object"

Parameter "Wind extension block status"

Parameter "Wind alarm status"

Parameter "Rain alarm status"

Parameter "Rain automation status"

Parameter "Frost alarm status"

Parameter "Safety status"

Parameter "Time open status"

Parameter "Outdoor temperature block status"

Parameter "Night closure status"

Parameter "Time closure status"

Parameter "Heat protection status"

Parameter "Pyranometer status"

Parameter "Indoor temperature blocking status"

Parameter "Sun shining on facade status"

Parameter "Sun bright, short retraction delay status"

Parameter "Sun bright, long retraction delay status

4.25.1 Parameter window “Facade 1/.../12: Function, safety”

Set the basic and safety relevant functions for the facade.

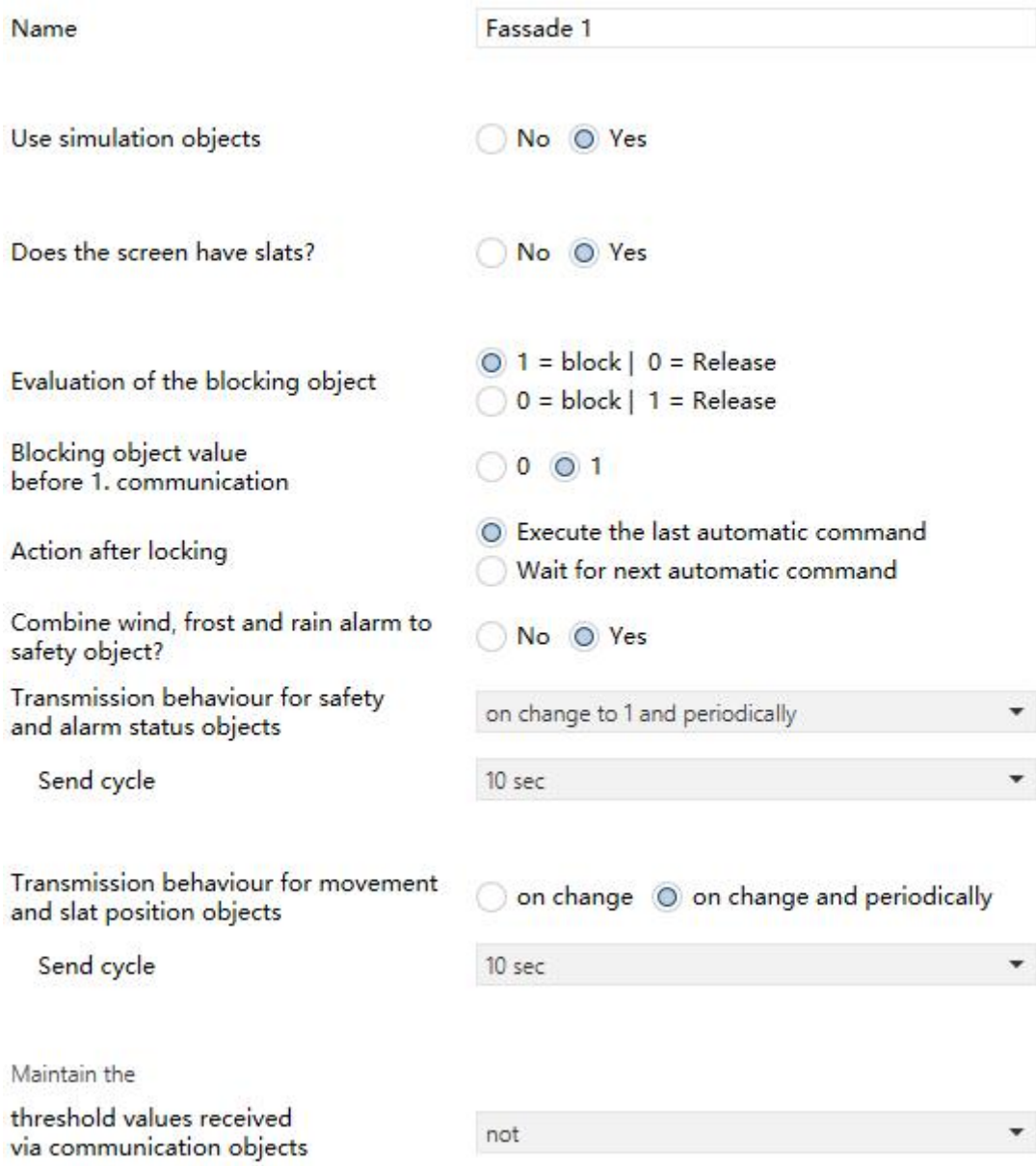


Fig.4.25.1(1)

Wind alarm

use	as wind alarm per threshold value

Note: If there has been no measurement change at the activated wind sensors within 48 hours, wind alarm will be triggered.

use the following wind sensors

Internal sensor measurement	○ No	◉ Yes
Measurements of communication object		
Façade wind 1	◉ No	○ Yes
Façade wind 2	◉ No	○ Yes
Façade wind 3	◉ No	○ Yes
Façade wind 4	◉ No	○ Yes
Façade wind 5	◉ No	○ Yes
Façade wind 6	◉ No	○ Yes
Façade wind 7	◉ No	○ Yes
Façade wind 8	◉ No	○ Yes
Façade wind 9	◉ No	○ Yes
Façade wind 10	◉ No	○ Yes
Façade wind 11	◉ No	○ Yes
Façade wind 12	◉ No	○ Yes

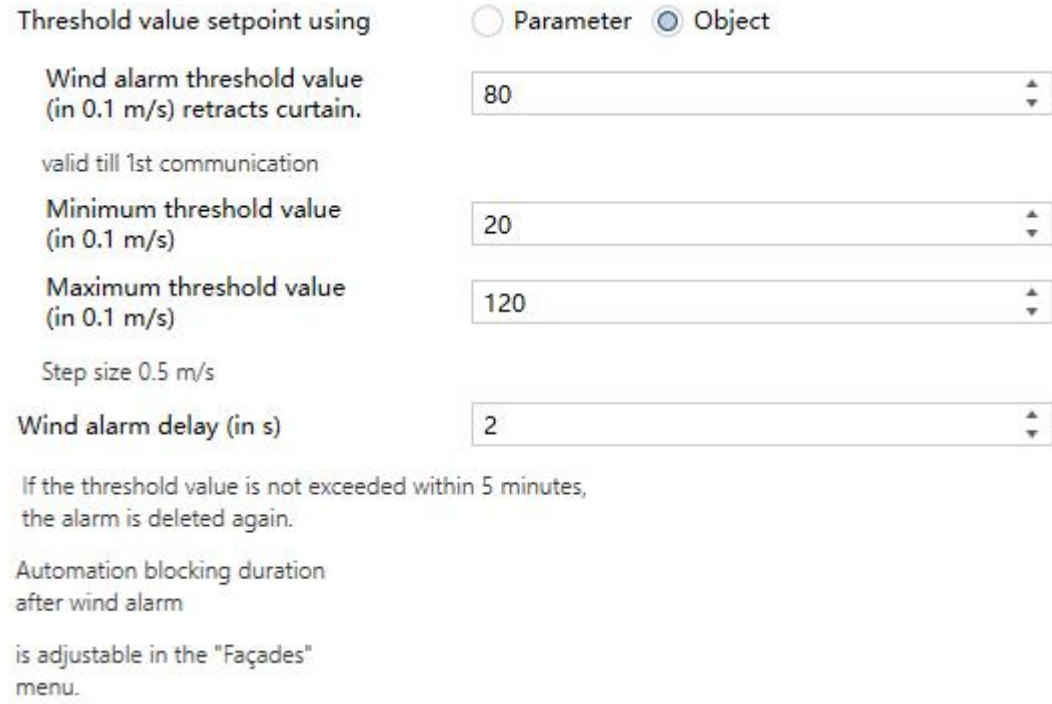


Fig.4.25.1(2) Wind alarm

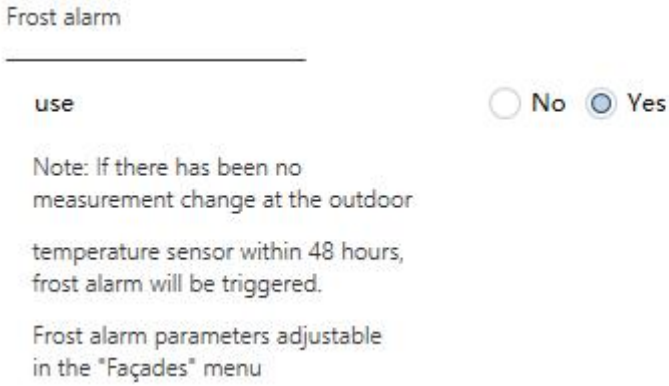


Fig.4.25.1(3) Frost alarm

Rain

use	as rain automation
Extension delay is set in the Façades menu.	
Use rain automation	
with week time switch	
Period 1	○ No ◉ Yes
Period 2	◉ No ○ Yes
Period 3	◉ No ○ Yes
Period 4	◉ No ○ Yes
Period 5	◉ No ○ Yes
Period 6	◉ No ○ Yes
Period 7	◉ No ○ Yes
Period 8	◉ No ○ Yes
Period 9	◉ No ○ Yes
Period 10	◉ No ○ Yes
Period 11	◉ No ○ Yes
Period 12	◉ No ○ Yes
Period 13	◉ No ○ Yes
Period 14	◉ No ○ Yes
Period 15	◉ No ○ Yes
Period 16	◉ No ○ Yes
Period 17	◉ No ○ Yes
Period 18	◉ No ○ Yes
Period 19	◉ No ○ Yes

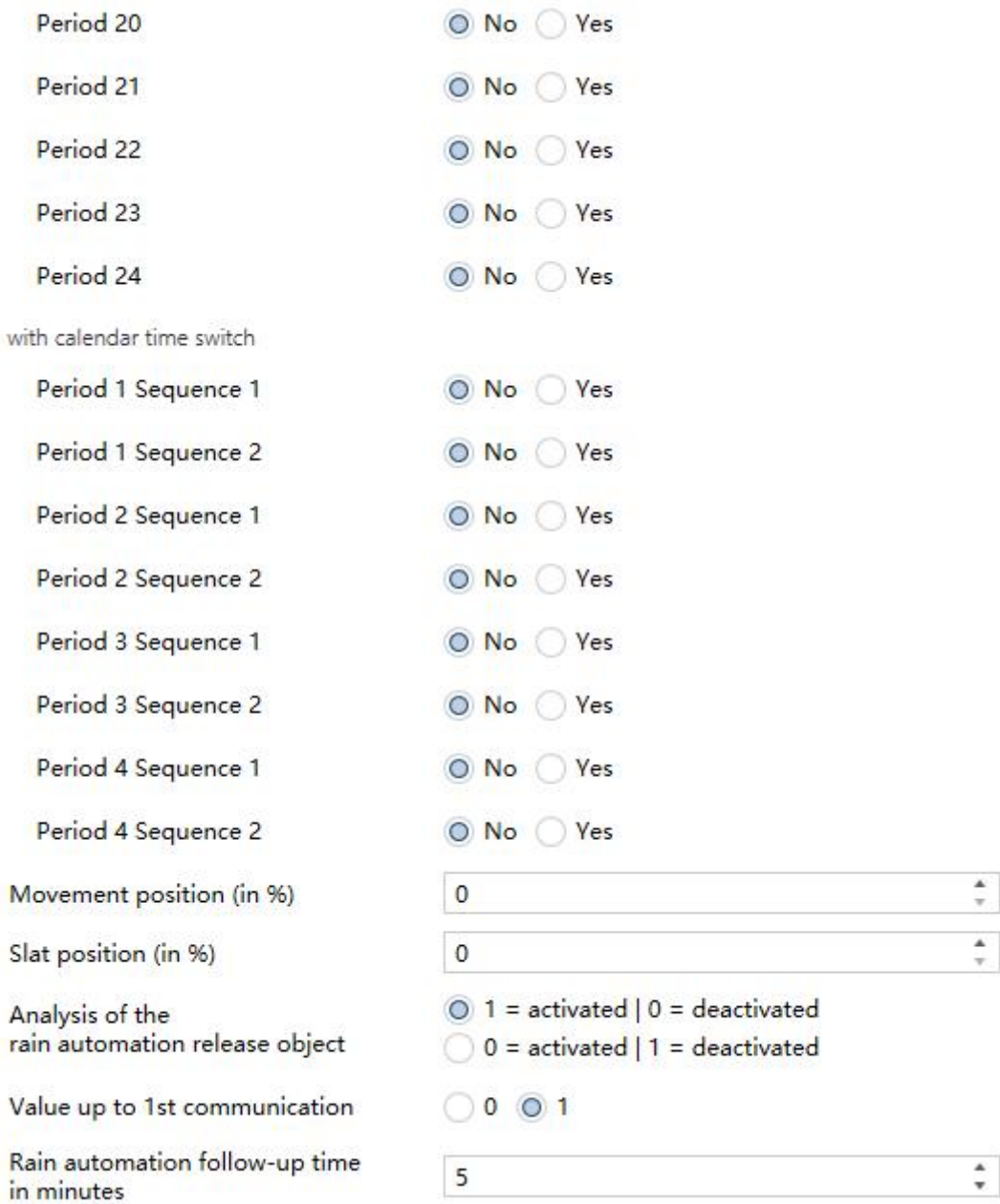


Fig.4.25.1(4) Rain

Parameter "Name"

Enter a name for the facade.

Parameter "Use simulation objects"

This parameter sets whether use simulation objects.Simulation help when testing the settings that have been made. For this observe the chapter 4.25.1.7 Simulation.

Options:

No

Yes

Parameter "Does the screen have slats?"

For shutters and slat blinds use the setting - shade has slats. As a result, further settings, especially for slats, are possible.

Options:

No

Yes

Parameter "Evaluation of the blocking object"

This parameter is used to set what a 1 or 0 at the block entry means.

Options:

1=block | 0=release

0=block | 1=release

Parameter "Blocking object value before 1. communication"

An object value up to the 1st communication is specified here.

Options:

0

1

Parameter "Action after locking"

This parameter is used to set the action after locking.

Options:

Execute the last automatic command

Wait for next automatic command

Parameter "Combine wind, frost and rain alarm to safety object?"

This parameter is used to set whether combine wind, frost and rain alarm to safety object.

Options:

No

Yes

Parameter "Transmission behaviour for safety and alarm status objects"

This parameter is used to set the transmission behavior for safety and alarm status sent to the bus.

Options:

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

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "On change and periodically" , "On change to 1 and periodically" and "On change to 0 and periodically".

When sending periodically, the safety and alarm status is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10sec

...

1.5h

2h

Parameter "Transmission behaviour for movement and slat position objects"

This parameter is used to set the transmission behavior for movement and slat position.

Options:

On change

On change and periodically

——Parameter "Send cycle"

This parameter is visible when previous parameter is selected "On change and periodically".

When sending periodically, the movement and slat position is sent on the bus in a fixed cycle that can be set here.

Options:

5sec

10sec

...

1.5h

2h

Maintain the

Parameter "threshold values received via communication objects"

Set, in which cases threshold values received are to be kept per object.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note:

1.This setting also affects the release objects of the facade automation (opening time, time and night closing, heat protection, pyranometer, rain automation, indoor temperature block, outdoor temperature block and solar protection automation).

2.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).

Priorities:

The functions of the facade are arranged according to their priorities. First named have higher priority. 1. Wind, 2. Frost, 3. Rain.

Wind alarm

If the wind threshold values are exceeded, a wind alarm can be triggered, i.e. the shade is retracted.

If the wind extension block is active, the curtain can no longer be extended (not even by manual commands). If the curtain has already been extended, it remains in its position.

If the wind alarm is used, then, as a precaution, the alarm is activated, if over a period of 48 hours no change in the measured value has been recorded at the relevant wind sensor.

Parameter "use"

Set with what the wind alarm and, if desired, wind extension blocking is to be defined.

Options:

No

As wind alarm per threshold value

As wind alarm per bit object

As wind alarm and ext.blocking per TVL

As wind alarm per TVL/ext.blocking per bit obj.

As wind alarm per bit obj./ext.blocking per TVL

As wind alarm/wind ext.blocking per bit obj.

If **alarm or extension block per bit object** is defined, no further settings are required. The wind alarm is defined externally and the alarm or block information is received by the weather station as a 1-bit object. The duration of blocking by the automation after a wind alarm is set in the chapter 4.25 facades (Wind and rain alarm)

If **Alarm or extension block per threshold value** is defined, then set which sensors are relevant for this. The wind value measured internally in the device can be used, but also the values of the external wind communication objects assigned to the facades. With several sensors, only one must exceed the threshold value in order for the alarm/ block to become active.

In addition, a delay can be specified per parameter. It specifies the time that elapses from the point at which the threshold value is exceeded until the wind alarm or the wind extension block is triggered. If the value falls below the threshold value, a fixed holding time of 5 minutes elapses before the wind alarm / the wind extension block is deactivated again. If the threshold value is exceeded within 5 minutes, the holding time starts again from the beginning.

After the five-minute holding time has elapsed, the automatic block starts. It is set in the "facades" menu (see Wind and rain alarm). Manual driving is possible again immediately after the holding time has elapsed.

Parameters as follow are visible when “Use” is selected “As wind alarm per threshold value”, “As wind alarm and ext.blocking per TVL” and “As wind alarm per bit obj./ext.blocking per TVL” .

Note: If there has been no measurement change at the activated. Wind sensors within 48 hours, wind alarm will be triggered.Use the following wind sensors

Parameter “Internal sensor measurement”

This parameter is used to set whether use internal sensor measurement.

Options:

No

Yes

Parameter "Facade wind 1/.../12"

This parameter is used to set facade wind 1/.../12.

Options:

No

Yes

Parameter "Threshold value setpoint using"

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

Options:

Parameter

Object

Parameter "wind alarm threshold value (in 0.1 m/s) retracts curtain."

Parameter "wind alarm delay (in s)"

When the threshold value per parameter is specified, then the value and delay time are set.Options:

0...255

Parameter "wind alarm threshold value (in 0.1 m/s) retracts curtain."

Parameter "Minimum threshold value (in 0.1 m/s)"

Parameter "Maximum threshold value (in 0.1 m/s)"

Parameter "wind alarm delay (in s)"

When the threshold value per communication object is specified, then the starting value, minimum and maximum threshold value and delay time are set.

Options: **0...255**

Frost alarm

Note: If the frost alarm is used, then, as a precaution, the alarm is activated, if over a period of 48 hours no change in the measured value has been recorded at the relevant outdoor temperature sensor.

Parameter "use"

Set whether the frost alarm is to be used for this facade. Further parameters for the frost alarm are set in the chapter 4.25 facades (see Frost alarm).

Options:

No

Yes

Rain

In the event of precipitation either a rain alarm can be triggered for the facade, i.e the shade is retracted and blocked, or a rain automation is executed. The rain automation moves to a certain position and is valid for the periods set. At other times with "rain automation" set the shade does not react to precipitation.

Further parameters for the rain automation are set in the chapter 4.25 "facades" (Rain automation).

Rain alarm does not have any extension delay.

Note:Within the automation functions the rain automation has a low priority. To display the sequence, rain automation is also listed in the facade X automation without the settings being possible.

Parameter "use"

Set whether precipitation should trigger the rain alarm or the rain automation.

Options:

No

As rain alarm

As rain automation

Parameters as follow are visible when “Use” is selected “As rain automation”.

Parameter “Period 1/.../24”

Parameter “Period 1/2/3/4 Sequence 1/2”

If in the event of precipitation, the rain automation is triggered, then set in which periods of the week and the calendar-timer, the rain movement position is to be travelled to. The periods are defined in the menu "week timer" or "month timer" (see chapter 4.27 Weekly timer and chapter 4.28 Calendar timer).

Options: **No/Yes**

Parameter “Movement position (in %)”

Parameter “Slat position (in %)”

Then also set the movement and slat position.

Options: **0...100**

Parameter “Analysis of the rain automation release object”

Parameter “Value up to 1st communication”

Define the value of the release object for the rain automation. Using the release object, the rain automation can be deactivated at short-notice.

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Parameter “Rain automation follow-up time in minutes”

Define the follow-up time The follow-up time is the delay time after the end of the precipitation warning.

Options: **1...120**

4.25.1.1 Classifying the facades for the control unit

The control options for shadings are Facade-related functions.

Most buildings have 4 facades.In principle the sun protection of each facade should be controlled separately, as shown in Fig1.

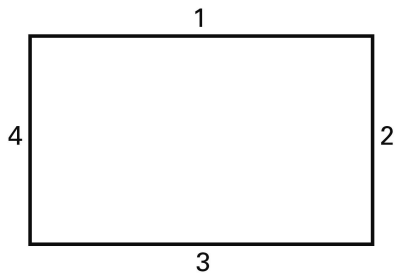


Fig.1

Even in buildings with a U-shaped layout only 4 facades have to be controlled differently, as several have the same alignment, as shown in Fig2.

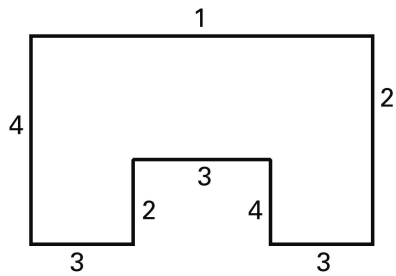


Fig.2

In buildings with an asymmetrical layout the facades with a non-right-angled orientation(2,3,5) and facades that are set back(6) must be controlled separately, as shown in Fig3.

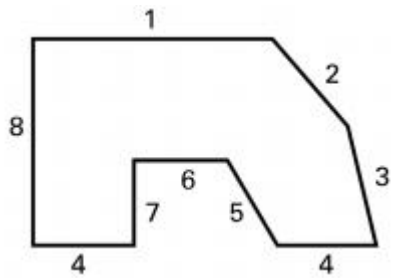


Fig.3

If a building has more than 12 Facades, the deployment if another weather station is recommended; particularly as this also makes it possible to measure the wind speed in another location.

When there are several buildings, wind measurement should take place separately for each building(e.g. with additional wind sensor), as depending on the positions of the buildings in relation to one another, different wind speeds may occur.

4.25.1.2 Orientation and inclination of the Facade

Alignment and slant of the facade are needed for the shadow edge tracking and the slat auto-guide.

Top view

The facade orientation corresponds to the angle be tween the North-south axis and the facade vertical.The angle here is measured in a clock wise direction, as shown in Fig.1.

The facade orientations result as follows:

Facade 1：α Facade 2：β=α+90°

Facade 3：γ=α+180° Facade 4：δ=α+270°

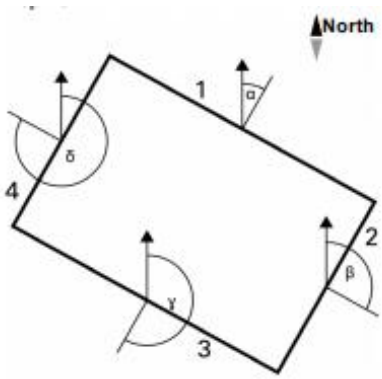


Fig.1

Example: The building in the illustration is turned α = 30° to the east i.e. the Facade alignment is 30°, 120°, 210° and 300°.

Side view: if a facade surface is not oriented vertically, this must be taken into account. A forward inclination of the facade is counted as a positive angle; a back wards inclination(as in the picture)as a negative angle. This also allows a sunshade of a window built into a sloping roof surface to be controlled according to the current position of the sun, as shown in Fig.2.

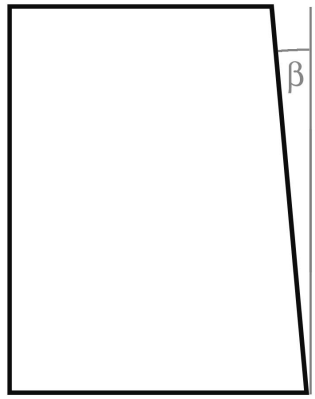


Fig.2

If a Facade is not a flat surface, but rather arched or bent, it must be subdivided into several segments that are controlled separately.

Remember, when setting a facade inclination greater than 0° also to adjust the height of the sun at which shading is to take place.

4.25.1.3 Shadow edge tracking and slat tracking

Shadow edge tracking

With shadow edge tracking the sunshade is not moved down fully; instead, it is moved only so far that the sun can still shine a configurable distance (e.g. 50 cm) into the room. This allows the room user to look outside through the lower part of the window, and plants which may be on the window ledge to be exposed to the sun.

Shadow edge tracking can only be used with a sunshade which is moved from the top downwards (e.g. shutters, textile shades or blinds with horizontal slats). This function cannot be used with sunshades which are pulled in front of a window from one or both sides.

Slat tracking

During slat tracking the horizontal slats of shutters are not fully closed but rather automatically adjusted according to the position of the sun so that it cannot shine directly into the room. Diffuse daylight can still enter the room through the slats and contribute to dazzle-free room lighting. Using slat tracking with an external shutter, the entry of warm air into the room through sunshine can be reduced and, at the same time, energy costs for lighting the room can be reduced.

Using shadow edge tracking and slat tracking

Sunshade when the position of the sun is high: The sunshade is only partially closed and automatically moved down only enough so that the sun cannot shine further into the room than specified via the maximum permitted penetration depth. The slats can be set almost vertically without the sun shining directly into the room, as shown in Fig.1.

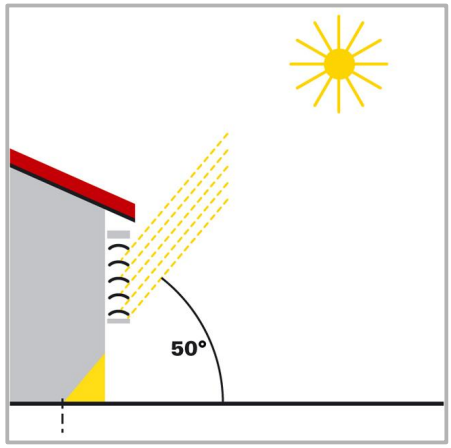


Fig.1

Sunshade when the sun is in a central position: The sunshade is automatically moved down only far enough so that the sun does not exceed the maximum permitted penetration depth in the room. The slats are automatically closed further, so that the sun can not shine directly into the room. Despite that.diffuse daylight can still reach the room and so contribute to the room lighting, as shown in Fig.2.

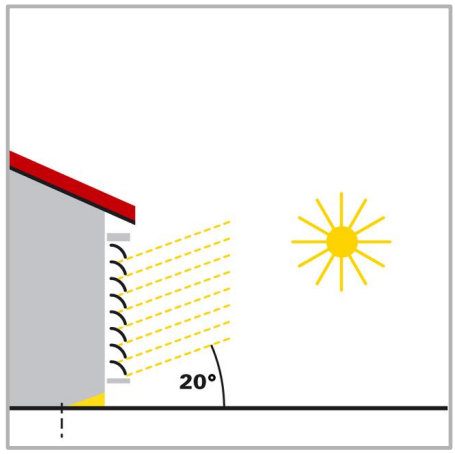


Fig.2

Sunshade when the position of the sun is low: The sunshade is automatically moved down almost fully, so that the sun does not shine too far into the room. The slats are automatically closed further, so that the sun does not shine in directly, as shown in Fig.3.

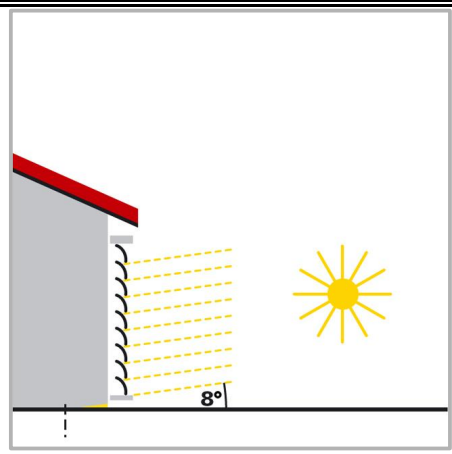


Fig.3

4.25.1.4 Slat type and determination of width and spacing

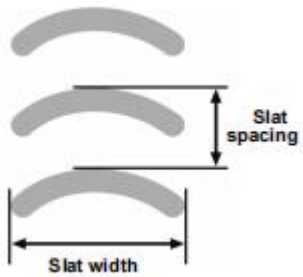
With slat tracking, a distinction is made between a sunshade or glare protection with horizontal slats and one with vertical slats.

A sunshade with horizontal slats (e.g. external shutter) is typically moved downwards from the top. By contrast, an internal glare protector often consists of thin strips of material (vertical slats), which can be rotated around 180° and are pulled out from one or both sides of the window.

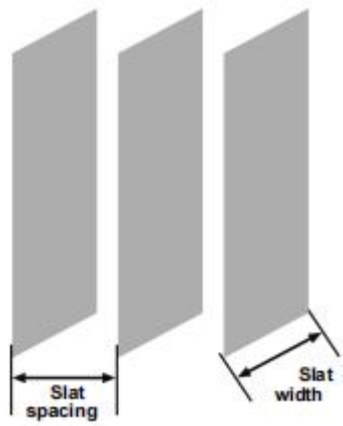
Both types of slat can be adjusted by the KNX GPS weather station Pro so that no direct sunlight falls into the room, but as much diffuse daylight as possible does.

In order for slat tracking to set the slats correctly, their width and spacing from one another must be known.

Horizontal slats



Vertical slats



4.25.1.5 Slat position for horizontal slats

The slat angle at 0% move command and at 100% move command must, during commissioning, be aligned to the pre-settings of the product parameters of the KNX GPS Weather Station Pro, and, if necessary, corrected, so that the slat guide on the facade works properly.

The drive used for the shutters defines whether this adjustment can take place almost continuously during slat tracking in many small steps (as with SMI drives, for example) or whether it is only possible in a few large steps (as with most standard drives).

Slat position at 100%

After moving to the 100% slat position the slats form an angle with the vertical. This angle must be entered in the parameter "Slat angle (in °) after slat move command 100%" . The default setting is 10°.

Example of a typical slat position at move command 100%(angel α approx 10°), as shown in Fig1.

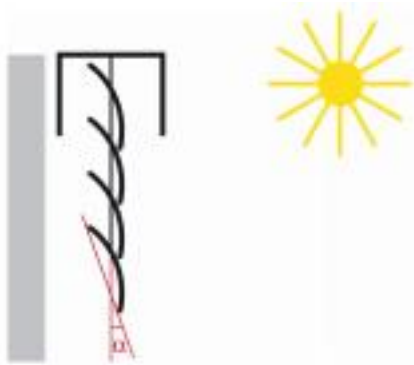


Fig.1

Slat position at 0%

After moving to the 0% slat position the slats form another angle with the vertical. This must be entered in the parameter "Slat angle (in °) after slat move command 0%" . The default setting is 90°.

The possible angle at slat position 0% depends on the mechanics of the blind and the actuator.

Example 1 of a typical slat position at move command 0%(angel α approx 90°), as shown in Fig2.

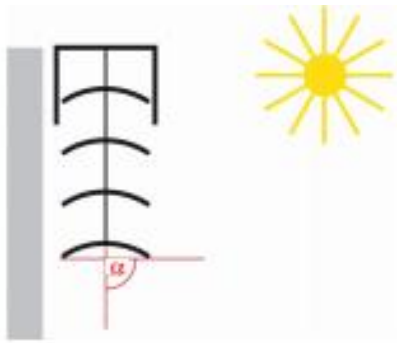


Fig.2

Example 2 of a typical slat position at move command 0%(angel α approx 160°), as shown in Fig3.

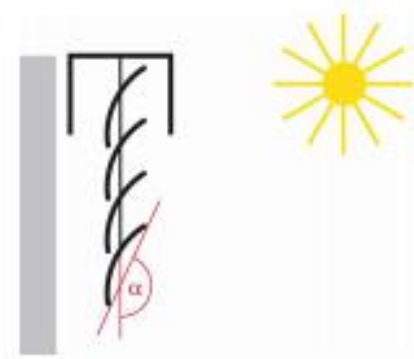


Fig.3

By setting the actual angle at 0% and 100% slat position the facade controller can convert the optimal slat angle for the actual sun position into a % command and transmit this to the actuator.

4.25.1.6 Slat position for vertical slats

The slat angle at 0% move command and at 100% move command must, during commissioning, be aligned to the pre-settings of the product parameters of the KNX GPS Weather Station Pro, and, if necessary, corrected, so that the slat guide on the facade works properly

Slat position at 100%

After moving to the 100% slat position the slats form an angle with the direction of movement. This angle must be entered in the parameter "Slat angle (in °) after slat move command 100%". The default setting is 10°.

The angle α is, seen from the outside, always measured to the left.

Example of a slat position at move command 100%(angel α approx 10°), as shown in Fig1.

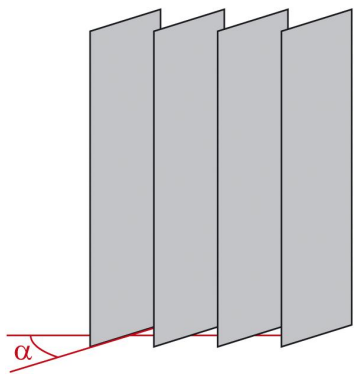


Fig.1

Slat position at 0%

After moving to the 0% slat position the slats form another angle with the direction of movement. This must be entered in the parameter "Slat angle (in °) after slat move command 0%" . The default setting is 90°.

Example 1 of a slat position at move command 0%(angel α approx 90°), as shown in Fig2.

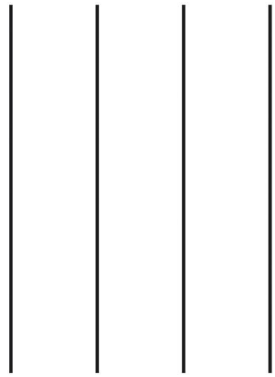


Fig.2

Example 2 of a slat position at move command 0%(angel α approx 130°), as shown in Fig3.

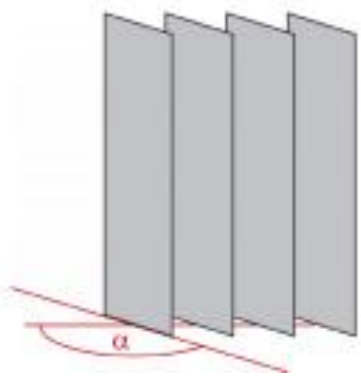


Fig.3

The possible angle utilisation (difference between slat position 100% and 0%) depends on the mechanics of the blind and the actuator. Take care that the angle utilisation is not limited by the configuration of the actuator.

By setting the actual angle at 0% and 100% slat position the facade controller can convert the ideal slat angle for the actual sun position into a % command and transmit this to the actuator.

4.25.1.7 Simulation

Simulation objects help when testing the settings that have been made for facades. They are activated in the setting area facades. By sending various values to the simulation objects number 656 to 671 different weather conditions and times of day can be tested. With the object670 "facade simulation reset (1:Reset)" you can delete all the simulation values that were set.

Activating simulation

In order to start the simulation, the simulation object for the facade must be activated. For facade 1, for example, the object is "672 facade 1 simulation (1: On | 0: Off) Set the value of this object to 1 to start the simulation for facade 1.

The facade and all other subordinate functions must be released (no active blocks) so that the simulated positions can be output.

When the simulation is activated the retraction delay (movement delay LONG) is set to 10 seconds. All other delay times are set to 0. All output objects of the relevant facade adapt their state to the values of the input objects for the simulation. The objects for normal operation are ignored.

Ending the simulation

Set the value of the object "facade 1 simulation (1:on | 0:off)" to 0 to end the simulation for facade 1.

When deactivating the simulation, it is possible that when an automation is performed for the first time (e.g. sun automation) that the delay times from the simulation are still used. All output objects of the relevant facade adapt their state to the values of the input objects for normal operation. The simulation objects are once again ignored.

The most recently received values for the simulation objects and also for the objects for normal operation are retained when switching between simulation and normal mode. No reset takes place. This means that when the simulation is ended the last used value for normal operation is applied.

Calculation of the sun position for the simulation

During the simulation it is possible to have the sun position, dependent on the simulation object for date and time, sent to the bus. In order that this functions, a location must be set in the product parameters or the location received via GPS. As long as the location is unknown sun positions are not calculated in the simulation.

4.25.1.8 Status output

The status of the automation functions of the facade controller can be used for visualisation or other bus functions. The device offers various possibilities for the status output.

Object status

A status object is available for every function of the automatic.

For the rain alarm on facade 1, for example, it is the object No. 685 "facade 1 rain alarm status".

Status of all facades

The status of all facades and their automatic functions can be issued in a compact form via an automatic status-bit object. For this purpose, a status of safety, automatic delay after an alarm, wind extension block, timed opening, timed/night closure, heat protection, pyranometer, rain automation, indoor temperature block, outdoor temperature block, shading because of the sun or automatic status, can be issued for every facade. Only the condition of one function of one facade is always issued. Using the object 655 one can switch to the next function (status-bit) and/or with the object 650 to the next facade.

The objects 648 to 655 are used for the compact output.

No.	Identification	Range	Function/Info
648	facade X channel Status output	Activation	Set to "active" in order to use the status output
649	facade X channel Name	facade	Output of the facade name (when changing facades).
650	facade X channel (1:+ | 0:-)	facade	Change to the next/previous facade.
651	facade X channel Status text	Status	Output of the condition of the selected status-bit as text.

652	facade X channel Status-bit text	Status	status-bit (when changing the status bit).
653	facade X channel Status-bit condition	Status	Output of the selected automatic status bit.
654	facade X channel Delay	Status	Displaying the delay time for the selected status-bit. Some automation functions have delay times that must first be run through before the status-bit is (re-)set.
655	facade X channel Status-bit selection (1:+ | 0:-)	Status	Output of the automatic status-bit

Status of a facade

The compact form of the status output described for all facades can also be performed for single facades. For this, the objects 731 to 736 are used for facade 1, for the other facades the objects named accordingly for the desired facade. The status output corresponds to that for all facades, only that here the objects for changing facades and the text object for the output of the name of the facade are missing. The text output with the object 733 "facade 1 channel status-bit text" is also taken from the table Texts for object “Facade X channel status bit text”

4.25.2 Parameter window “Facade 1/.../12: Automation”

Set automation for the facade

Priorities

The functions of the facade are arranged according to their priorities. First named have higher priority. 1. Time open, 2. Time and night closure, 3. Heat protection, 4. Pyranometer 5. Rain automation 6. Interior temperature block, 7. Outdoor temperature block, 8. Solar protection automation.

Timed opening

use	○ No ◉ Yes
used	
with week time switch	
Period 1	○ No ◉ Yes
Period 2	◉ No ○ Yes
Period 3	◉ No ○ Yes
Period 4	◉ No ○ Yes
Period 5	◉ No ○ Yes
Period 6	◉ No ○ Yes
Period 7	◉ No ○ Yes
Period 8	◉ No ○ Yes
Period 9	◉ No ○ Yes
Period 10	◉ No ○ Yes
Period 11	◉ No ○ Yes
Period 12	◉ No ○ Yes
Period 13	◉ No ○ Yes
Period 14	◉ No ○ Yes
Period 15	◉ No ○ Yes
Period 16	◉ No ○ Yes
Period 17	◉ No ○ Yes
Period 18	◉ No ○ Yes
Period 19	◉ No ○ Yes

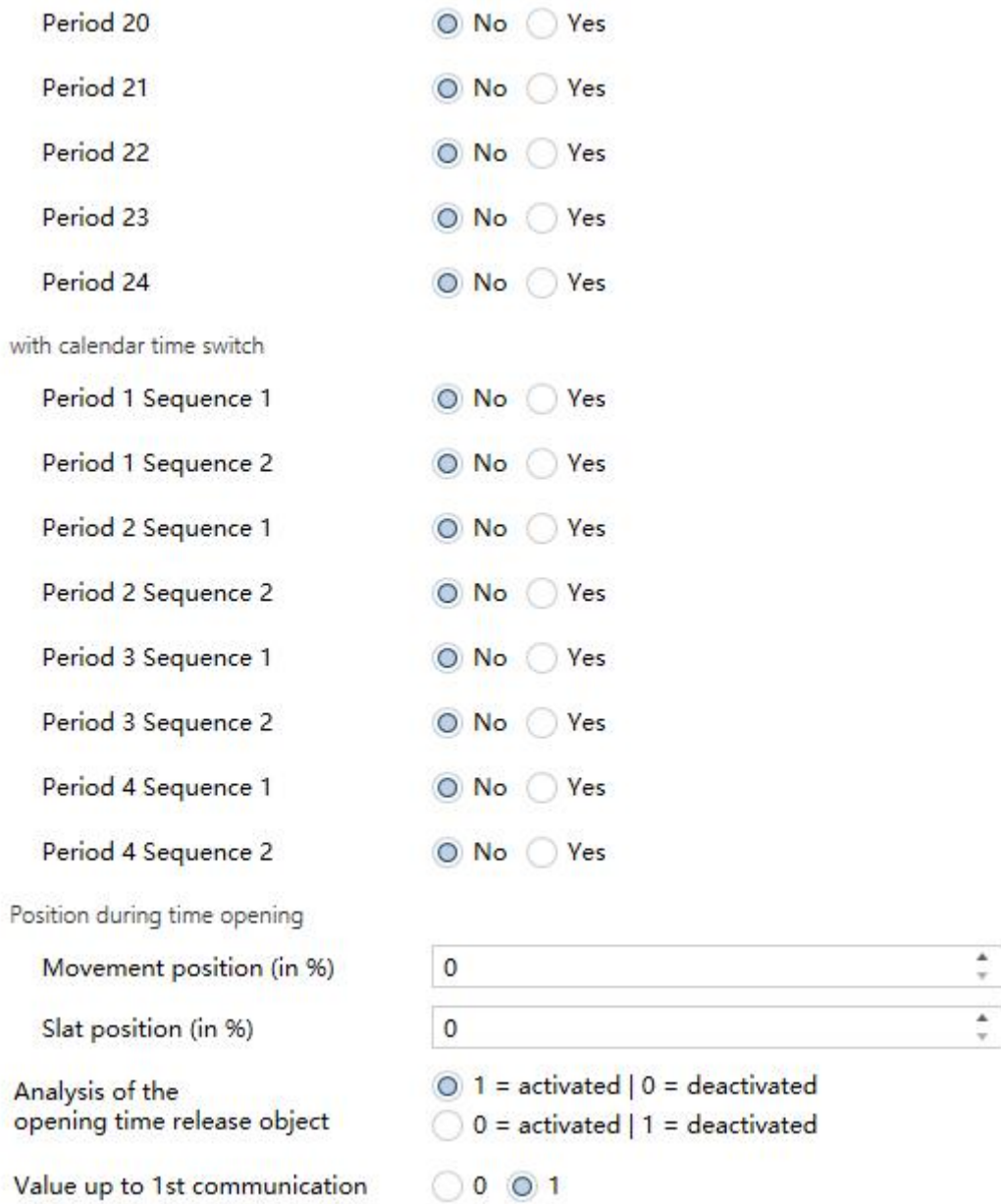


Fig.4.25.2(1) Timed opening

Timed and night closure

use	○ No ◉ Yes
Use timed closure	○ No ◉ Yes
used with week time switch	
Period 1	◉ No ○ Yes
Period 2	◉ No ○ Yes
Period 3	◉ No ○ Yes
Period 4	◉ No ○ Yes
Period 5	◉ No ○ Yes
Period 6	◉ No ○ Yes
Period 7	◉ No ○ Yes
Period 8	◉ No ○ Yes
Period 9	◉ No ○ Yes
Period 10	◉ No ○ Yes
Period 11	◉ No ○ Yes
Period 12	◉ No ○ Yes
Period 13	◉ No ○ Yes
Period 14	◉ No ○ Yes
Period 15	◉ No ○ Yes
Period 16	◉ No ○ Yes
Period 17	◉ No ○ Yes
Period 18	◉ No ○ Yes

Period 19	◉ No ○ Yes
Period 20	◉ No ○ Yes
Period 21	◉ No ○ Yes
Period 22	◉ No ○ Yes
Period 23	◉ No ○ Yes
Period 24	◉ No ○ Yes

with calendar time switch

Period 1 Sequence 1	◉ No ○ Yes
Period 1 Sequence 2	◉ No ○ Yes
Period 2 Sequence 1	◉ No ○ Yes
Period 2 Sequence 2	◉ No ○ Yes
Period 3 Sequence 1	◉ No ○ Yes
Period 3 Sequence 2	◉ No ○ Yes
Period 4 Sequence 1	◉ No ○ Yes
Period 4 Sequence 2	◉ No ○ Yes
Analaysis of timed closure release object	◉ 1 = activated | 0 = deactivated ○ 0 = activated | 1 = deactivated
value before 1st communication	○ 0 ◉ 1

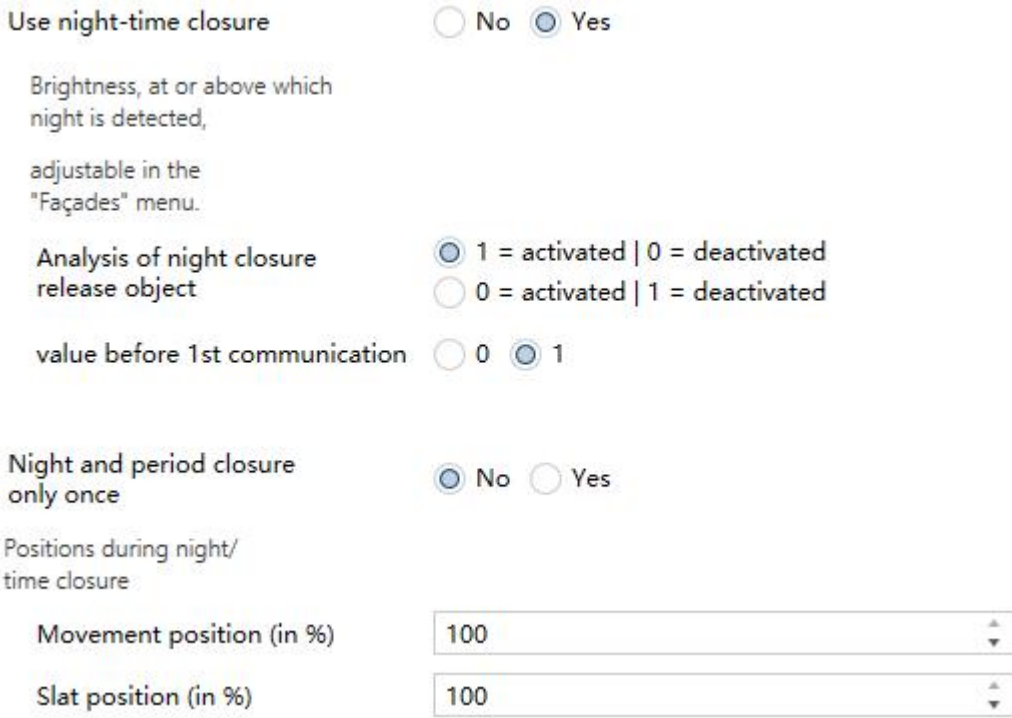


Fig.4.25.2(2) Time and night closure

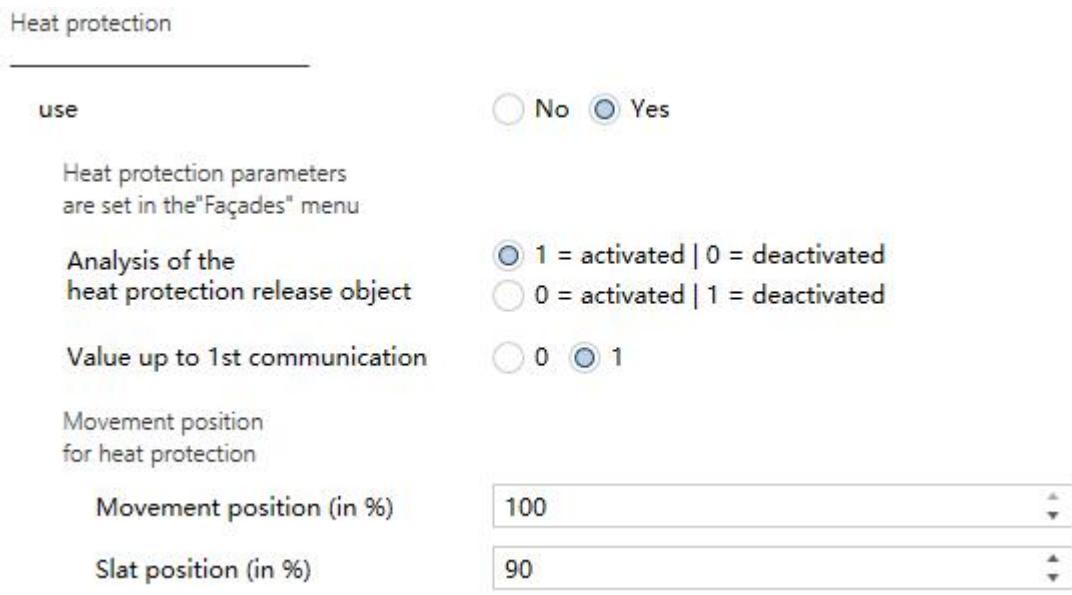


Fig.4.25.2(3) Heat protection

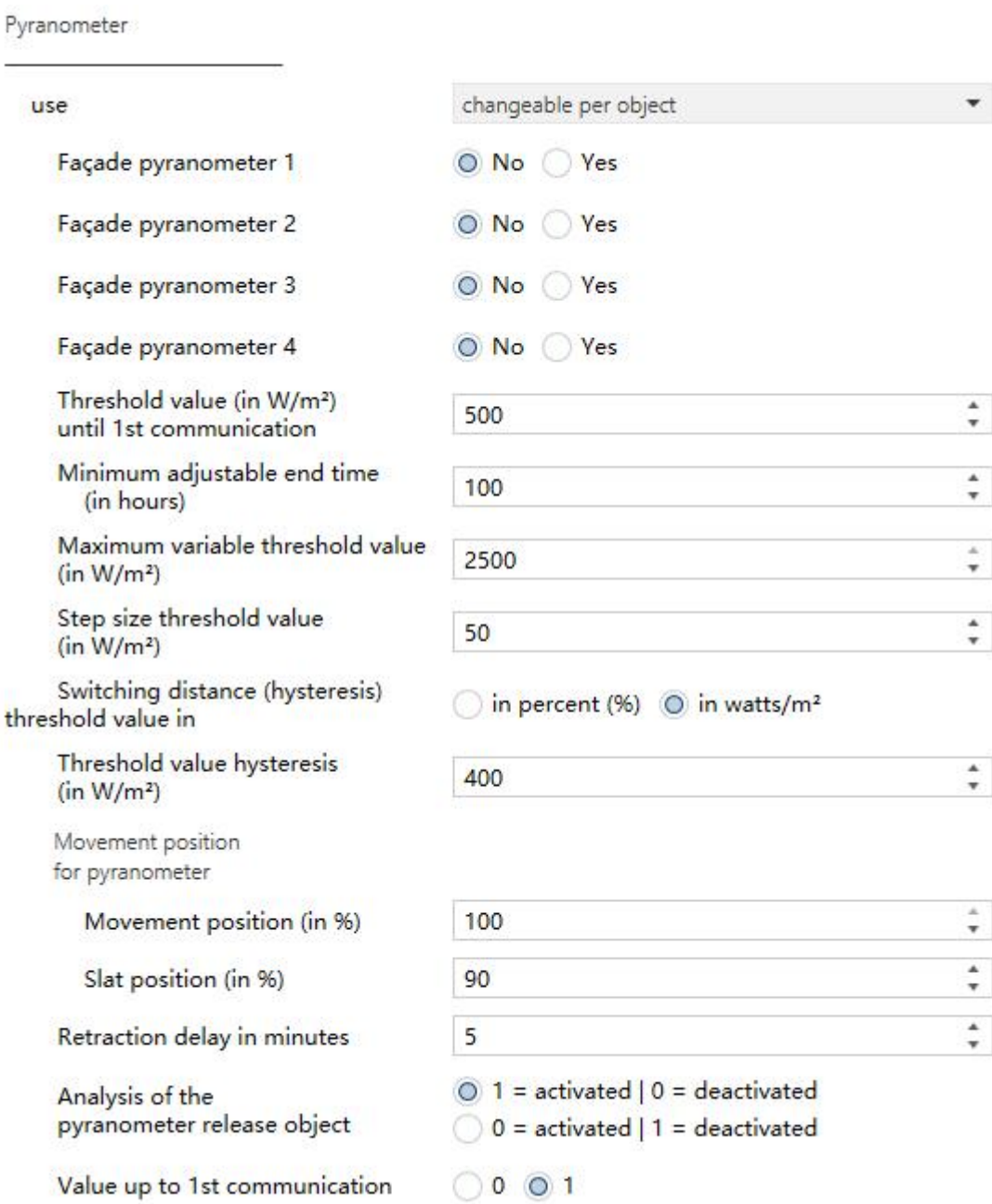


Fig.4.25.2(4) Pyranometer

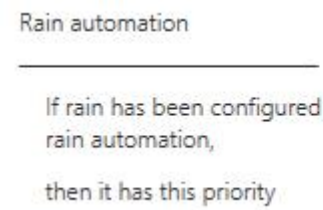


Fig.4.25.2(5) Rain automation

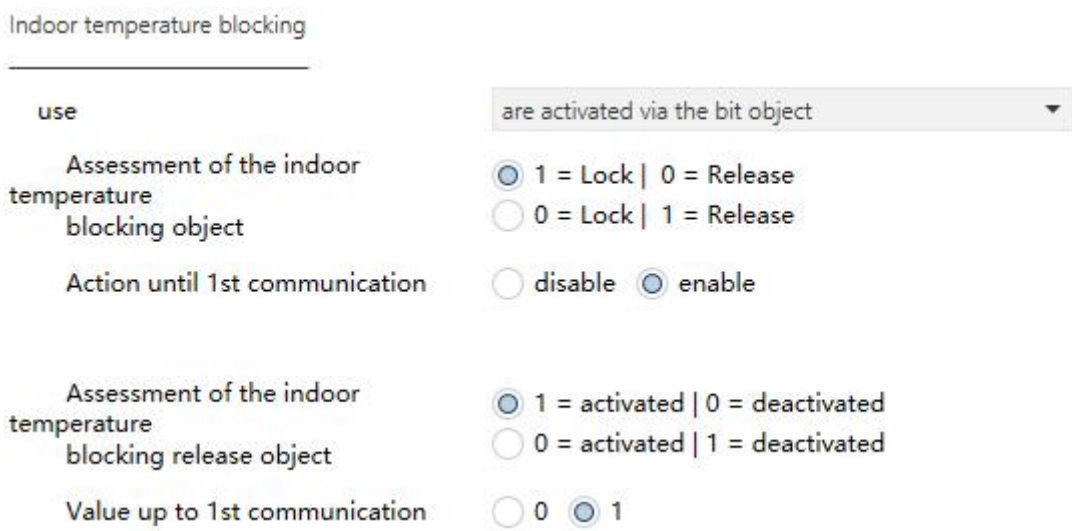
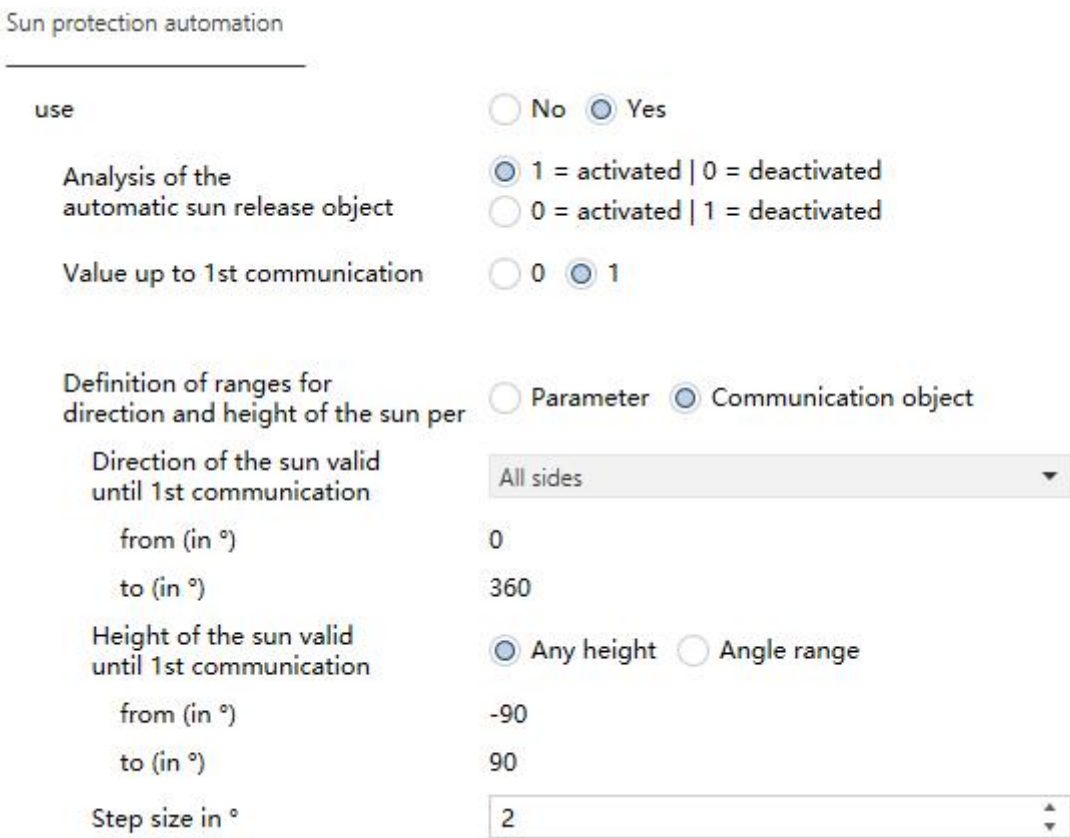
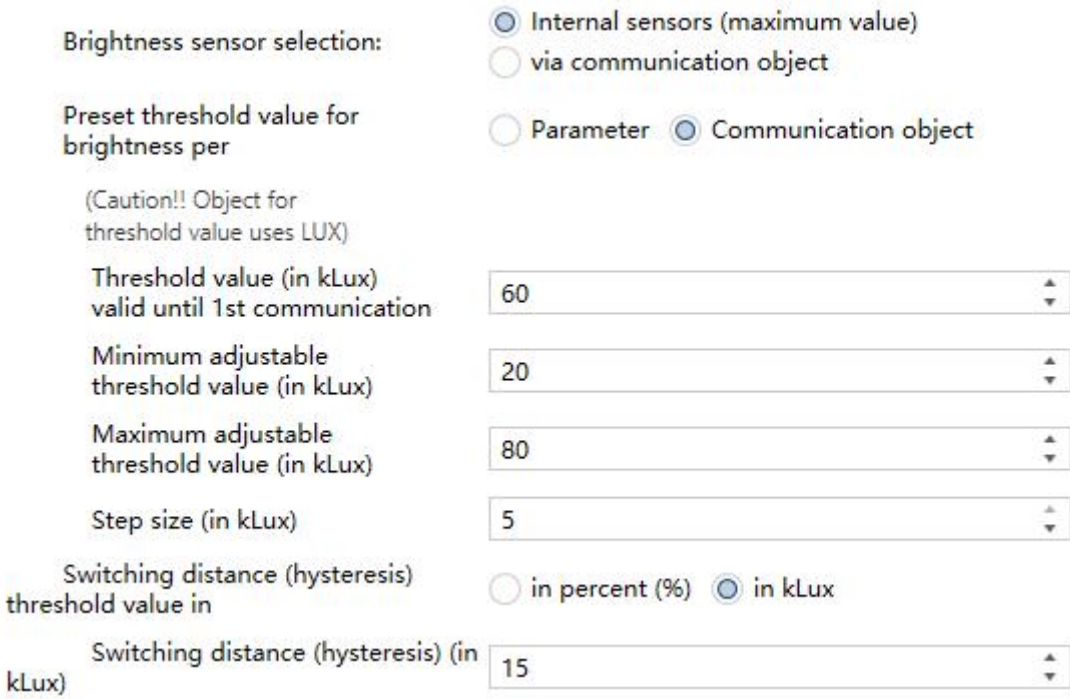


Fig.4.25.2(6) Indoor temperature blocking




Brightness sensor selection:
Internal sensors (maximum value)
via communication object
Preset threshold value for brightness per
Parameter
Communication object
(Caution!! Object for threshold value uses LUX)
Threshold value (in kLux) valid until 1st communication
60
Minimum adjustable threshold value (in kLux)
20
Maximum adjustable threshold value (in kLux)
80
Step size (in kLux)
5
Switching distance (hysteresis) threshold value in
in percent (%)
in kLux
Switching distance (hysteresis) (in kLux)
15

Travel delays

Retraction and extension delay is stipulated by	○ Parameter ◉ Object
Extension delay (in minutes)	1
valid until 1st communication	
Minimum adjustable extension delay (in minutes)	1
Maximum adjustable extension delay (in minutes)	40
Step size (in minutes)	1
Brief delay (in seconds)	10
valid until 1st communication	
Minimum short delay (in seconds)	1
Maximum short delay (in seconds)	120
Increment (in seconds)	1
Retraction delay (in minutes)	30
valid until 1st communication	
Minimum retraction delay (in minutes)	10
Maximum retraction delay (in minutes)	240
Step size (in minutes)	1

Outdoor temperature block

use	changeable per object

Deactivate blocking at

Threshold value (in 0.1°C) valid until 1st communication	50
Minimum adjustable threshold value per object (in 0.1°C)	0
Maximum variable threshold value per object (in 0.1°C increments)	200
Step size for changing threshold value (in 0.1°C)	5
Switching distance (hysteresis) (in 0.1°C)	30
Analysis of the outdoor temperature release object	1 = activated | 0 = deactivated
Value up to 1st communication	○ 0 ◉ 1

Automatic sun protection extends the shading if

- the sun is coming from the set direction and
- brightness exceeds the set threshold value
- longer than the extension delay.

Solar protection position	Shadow edge tracking and slat tracking
Façade alignment (North=0°,O=90°,S=180°,W=270°)	180
Inclination of the façade in ° (0° = no inclination)	0
Window height in cm	150
Max. penetration depth of sun into the room in cm	50
Shadow edge displacement at or above ... cm will be tracked	10
Slat width (in mm)	80
Slat distance (in mm)	75
Min. angle change for sending new slat position	10
Slat angle (in °) after 0% slat movement command	90
Slat angle (in °) after 100% slat movement command	10

Automatic sun prot. moves shade to the following position if

- brightness falls below threshold value - switching distance
- longer than the short delay.

Fig.4.25.2(7) Sun protection automation

Fig.4.25.2(8) Facade status output

Timed opening

The curtain can, at certain times, be opened compulsorily or stay open. For time opening, a movement position can be defined.

Parameter "Use"

Set whether a time opening is to be used.

Options:

No

Yes

Parameters as follow are visible when “Use” is selected “yes”.

Used with week time switch

Parameter “Period 1/../24”

Parameter “Period 1/2/3/4 Sequence 1/2”

Set in which periods of the week and the calendar-timer, the time opening movement position is to be approached. The periods are defined in the menu "week timer" or "month timer" (see chapter 4. 27 Weekly timer and chapter 4. 28 Calendar timer).

Options:

No

Yes

Position during time opening

Parameter “Movement position (in %)”

Parameter “Slat position (in %)”

Set the movement and slat position.

Options: **0...100**

Options: **0...100**

Parameter “Analysis of the opening time release object”

Parameter “Value up to 1st communication”

Define the value of the release object for time opening. Using the release object, time opening can be deactivated at short-notice.

Options:**1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Timed and night closure

The curtain can, at certain times, and at night, be closed compulsorily. For the time and night closure a movement position can be defined.

Parameter "use"

Parameter "Use timed closure"

Parameter "Use night-time closure"

Set whether a time and/or night closure is to be used.

Options:

No

Yes

Parameter "Period 1/.../24"

Parameter "Period 1//2/3/4 Sequence 1/2"

For the timed closure, set in which periods of the week and the calendar-timer, the timed closure movement position is to be travelled to. The periods are defined in the menu "week timer" or "month timer" (see chapter 4. 27 Weekly timer and chapter 4. 28 Calendar timer).

Options:

No

Yes

Parameter "Analysis of the time closure release object"

Parameter "Value before 1st communication"

This parameter is visible when parameter “use time closure” is selected “yes” .

Define the value of the release object for the timed closure. Using the release object, the timed closure can be deactivated at short-notice.

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Parameter "Analysis of the night closure release object"

Parameter "Value before 1st communication"

This parameter is visible when parameter "use night-time closure" is selected "yes" .

Define the value of the release object for the night closure. Using the release object, the night closure can be deactivated at short-notice

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Parameter "Night and period closure only once"

Parameter "Movement position (in %) "

Parameter "Slat position (in %) "

You can define that the time and night closure are only performed once per period/ night. Then also set the movement position.

Options: **No/Yes**

Options: **0...100**

Options: **0...100**

Heat protection:

Above a certain outdoor temperature, a heat protection can be travelled to. Further parameters for heat protection are set in the chapter 4.25 "facades" (Heat protection).

If heat protection is used, then, as a precaution, protection is activated, if over a period of 48 hours no change in the measured value has been recorded at the relevant temperature sensor.

Parameter "Use"

This parameter is used to set whether use heat protection.

Options:

No

Yes

Parameters as follow are visible when "Use" is selected "yes".

Heat protection parameters are set in the "Facades" menu

Parameter "Analysis of the heat protection release object"

Parameter "Value up to 1st communication"

Define the value of the release object. Using the release object, the heat protection can be deactivated at short-notice.

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

Movement position for heat protection

Parameter "Movement position (in %) "

Parameter "Slat position (in %) "

Set the movement and slat position.

Options: **0...100**

Pyranometer:

Above a certain global radiation value, a protection position can be taken up.

If global radiation monitoring is used, then, as a precaution, the protection is activated, if over a period of 48 hours no change in the measured value has been recorded at the relevant pyranometer.

Parameter "use"

Set whether the global radiation is to be considered. The threshold value can also be set by "changeable per object".

Options:

No

Yes

Changeable per object

Parameters as follow are visible when “Use” is no selected “no”.

Parameter “Facade pyranometer 1/2/3/4”

This parameter is used to set whether use facade pyranometer 1/2/3/4.

Options:

No

Yes

Parameter “Threshold value (in W/m)”

Parameter “Switching distance (hysteresis threshold value in)”

Parameter “Threshold value hysteresis (in W/m²)”

Then set the threshold value for the global radiation and the switching distance for the event that the value is not reached.Options: **0...2500**

Options: **In percent(%)/In watts/m²**

Options: **0...2500/0...100**

Parameters as follow are visible when “use” is selected “changeable per object ”.

Parameter “Threshold value (in W/m²) until 1st communication”

Parameter “Minimum adjustable end time (in hours)”

Parameter “Maximum variable threshold value (in W/m²)”

Parameter “Step size threshold value (in W/m²)”

When specifying the threshold value by object the minimum and maximum values that can be set and the increment for the change are also defined.

Options: **0...2500**

Options: **0...2500**

Options: **0...200**

Movement position for pyranometer

Parameter "Movement position (in %)"

Parameter "Slat position (in %)"

Parameter "Analysis of the pyranometer release object"

Parameter "Value up to 1st communication"

Set the movement position and define the value of the release object. Using the release object, the pyranometer controller can be deactivated at short-notice.

Options: **0...100**

Options: **0...100**

Options:**1=activated | 0=deactivated/0=activated | 1=deactivated**

Options:**0/1**

Rain automation

If rain protection has configured as rain automation, then its priority is between the pyranometer controller and the interior temperature block. Rain automation is set in the general settings of the chapter 4.25 facade (Rain automation) and chapter 4.25.2 facade X safety (Rain).

Interior temperature block

Below a certain interior temperature, the curtain can be prevented from opening.

Parameter "use"

Set whether an interior temperature block is to be used. The threshold value can also be set by "changeable per object".

Options:

No

Yes

Changeable per object

Are activated via the bit object

Parameter "Threshold value (in 0.1°C)"

Parameter "Switching distance (hysteresis)(in 0.1°C)"

This parameter is visible when parameter "use" is selected "yes" and "Changeable per object" .

Then set the threshold value for the temperature block and the switching distance for the event that the value is not reached.

Options: **-32768...32767**

Options: **-200...300**

Parameter "Minimum adjustable threshold value per object(in 0.1°C)"

Parameter "Maximum variable threshold value per object (in 0.1°C increments)"

Parameter "Step size for changing threshold value (in 0.1°C)"

This parameter is visible when parameter "use" is selected "Changeable per object" .

When specifying the threshold value by object the minimum and maximum values that can be set and the increment for the change are also defined.

Options: **-32768...32767**

Options: **-32768...32767**

Options: **1...20**

Parameter "Assessment of the indoor temperature blocking object"

Parameter "Action until 1st communication"

This parameter is visible when parameter "use" is selected "Are activated via the bit object" .

When specifying the threshold value by bit object the interior temperature block object is also defined.

Options:**1=Lock | 0=Release/0=Lock | 1=Release**

Options:**Disable/Enable**

Parameter "Assessment of the indoor temperature blocking release object"

Parameter "Value up to 1st communication"

This parameter is visible when parameter "use" is selected "yes" and "Changeable per object" .

Define the value of the release object for the interior temperature block. Using the release object, the interior temperature block can be deactivated at short-notice.

Options:**1=activated | 0=deactivated/0=activated | 1=deactivated**

Options:**0/1**

Sun protection automation

If none of the blocks is active, then the position of the sun and the brightness are checked and is, corresponding to the solar protection automation, shaded.

Parameter "use"

Set whether solar protection automation is to be used.

Options:

No

Yes

Parameters as follow are visible when parameter "use" is selected "yes".

Parameter "Analysis of the automatic sun release object"

Parameter "Value up to 1st communication"

Define the value of the release object for solar protection automation. Using the release object, solar protection automation can be deactivated at short notice.

Options:**1=activated | 0=deactivated/0=activated | 1=deactivated**

Options:**0/1**

Sun position

Set the direction and height of the sun for shading. The angle, which is specified for the direction of the sun (azimuth), is aligned according to the orientation of the facade.

In addition, the angle of the facade and obstacles which cast a shadow on the facade, such as, for example, a wall or overhanging roof, can also be taken into account in the setting for sun direction (azimuth) and sun height (elevation).

Top view(Fig.1): Sun elevation(Azimuth)

In the morning,the building is fully shaded by surrounding trees.

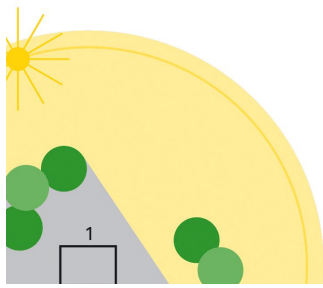


Fig.1

Top view(Fig.2): Sun elevation (Azimuth)

For facade 1, shading must only be active in the azimuth marked red, as the sun can then shine on to the building without obstruction.

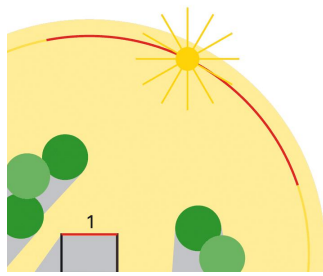
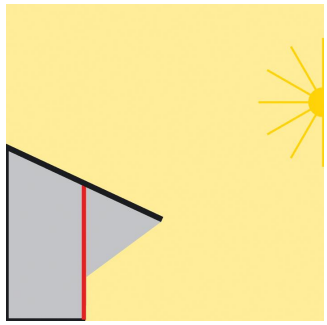


Fig.2

Side view(Fig.3): Sun position (Elevation)

When the sun’s position is high, the facade is only shaded by the roof over hang. Shading is only necessary if the sun is low(in the figure approx.below 53°)。



Parameter "Definition of ranges for direction and height of the sun per"

Select whether the ranges for the direction and height of the sun are to be specified per parameter or via a communication object.

Options:

Parameter

Communication object

Parameter "Number of ranges for direction and height of the sun"

Parameter "Direction of the sun"

Parameter "From (in)"

Parameter "To(in)"

Parameter "Height of the sun"

Parameter "From (in)"

Parameter "To(in)"

Parameter "Step size in° "

If the ranges are specified by parameter, then several ranges can be specified. Specify the direction for the shading, either with the defined compass direction or with "angle range" and by inputting the values exact to a degree. If the ranges are specified by communication object, then onlyonly the starting values for direction and height are defined, that are valid until the first call.

Options: **1/2/3**

Options: **All sides/West/South-West/South/South-East/East/Angle range**

Options: **0...360**

Options: **0...360**

Options: **Any height/Angle range**

Options: **-90...90**

Options: **-90...90**

Options: **1...10**

Note: For sun direction and height, a fixed switching distance of 1° is valid

Parameter "Brightness sensor selection"

Next you select which brightness value (sensor) is to be relevant for the shading of the facade. The highest currently measured value of the five internal sensors can be used as the brightness value (since this maximum value in conjunction with the position of the sun provides the best basis for shading control, the 5 individual sensor values are not output), or a value that was received via a communication object.

Options:

Internal sensors(maximum value)

Via communication object

Parameter "Preset threshold value for brightness per"

Select whether the brightness threshold value is to be specified per parameter or via a communication object. Please observe that the communication object outputs the threshold value in Lux the threshold value, however is set in Kilolux.

Options:

Parameter

Communication object

Parameter "Threshold value (in kLux)"

Parameter "Threshold value (in kLux) valid until 1st communication"

Parameter "Minimum adjustable threshold value (in kLux)"

Parameter "Maximum adjustable threshold value (in kLux)"

Parameter "Step size (in kLux)"

Parameter "Switching distance (hysteresis) threshold value in"

Parameter "Switching distance (hysteresis) (in kLux)"

Set the brightness threshold value and the switching distance for the event that the value is not reached. If the value is specified via communication object, then a starting value and the possible setting range is defined.

Options: **1...150**

Options: **1...150**

Options: **1...150**

Options: **1...150**

Options: **1...5**

Options:**In percent (%)/In kLux**

Options: **1...150**

Travel delays

For the shading there are three travel delays:

The extension delay defines the waiting time for the sun automation after the brightness threshold value has been exceeded.

At the end of the short delay time after the brightness value has not been reached an intermediate position is approached. For example, here a position can be defined that only differs from the shading

position "extended" by the slat position on the shutter. The shade does not immediately go up, but lets in somewhat more light. This position is set further down in the same menu.

The retraction delay defines the waiting time for the retraction after the brightness threshold value has not been reached.

Parameter "Retraction and extension delay is stipulated by"

Select whether the travel delay is to be specified per parameter or via objects.

Options:

Parameter

Object

Parameter "Extension delay (in minutes)"

Parameter "Minimum adjustable extension delay (in minutes)"

Parameter "Maximum adjustable extension delay (in minutes)"

Parameter "Step size (in minutes)"

Parameter "Brief delay (in seconds)"

Parameter "Minimum short delay (in seconds)"

Parameter "Maximum short delay (in seconds)"

Parameter "Increment (in seconds)"

Parameter "Retraction delay (in minutes)"

Parameter "Minimum retraction delay (in minutes)"

Parameter "Maximum retraction delay (in minutes)"

Parameter "Step size (in minutes)"

Set the delay times. If the delays are specified via communication object, then a starting value and the possible setting range is defined.

Options: **1...240**

Options: **1...240**

Options: **1...240**

Options: **1...10**

Options: **1...3600**

Options: **1...3600**

Options: **1...3600**

Options: **1...240**

Options: **1...240**

Options: **1...240**

Options: **1...240**

Options: **1...10**

Outdoor temperature block

Below a certain outdoor temperature, the shade is withdrawn.

If the outdoor temperature block is used, then, as a precaution, the block is activated, if over a period of 48 hours no change in the measured value has been recorded at the relevant temperature sensor.

Parameter "use"

Set whether an outdoor temperature block is to be used. The threshold value can also be set by "changeable per object".

Options:

No

Yes

Changeable per object

Parameter "Threshold value (in 0.1°C)"

Parameter "Switching distance (hysteresis) (in 0.1°C)"

This parameter is visible when parameter "use" is selected "yes".

Then set the threshold value for the temperature block and the switching distance for the event that the value is exceeded.

Options: **-200...300**

Parameter "Threshold value (in 0.1°C) valid until 1st communication"

Parameter "Minimum adjustable threshold value per object (in 0.1°C)"

Parameter "Maximum variable threshold value per object (in 0.1°C increments)"

Parameter "Step size for changing threshold value (in 0.1°C)"

This parameter is visible when parameter "use" is selected "changeable per object".

When specifying the threshold value by object the minimum and maximum values that can be set and the increment for the change are also defined.

Options: **-200...300**

Options: **-200...300**

Options: **-200...300**

Options: **1...20**

Parameter "Analysis of the outdoor temperature release object-"

Parameter "Value up to 1st communication"

Define the value of the release object for the outdoor temperature block. Using the release object, the outdoor temperature block can be deactivated at short-notice.

Options: 1=activation | 0=deactivation/0=activation | 1=deactivationOptions: **0/1**

Solar protection position and auto-guiding

Solar protection extends the shading automatically if the sun is coming from the set direction and the brightness of the set threshold value is exceeded over a period longer the extension delay time.

For the movement position "Solar protection" auto-guiding can be set. Settings for slats are only displayed if the shading for the facade has been defined as having slats (see chapter 4.25.1 facade safety).

Without auto-guiding a fixed position is travelled to.

With a four step slat guiding concept, a defined movement position is travelled to and the slats are tilted in four steps according to the position of the sun.

For slat auto-guiding, the direction and slant of the facade are taken into account, and internally the angle of the slat so calculated that no direct light can shine through the slats.

For shadow edge tracking, a fixed slat position is set (only for shades with slats). For the movement position, the orientation and slant of the facade and the height of the window are taken into consideration so that it can be defined how far the sun may shine into the room.

Shadow edge tracking and slat auto-guide are also possible in combination.

Before setting auto-guide, please read the instructions in chapter Optimal usage of facade controller functions.

Parameter "Solar protection position"

This parameter is used to set the solar protection position.

Options:

Without tracking

Slats in 4 stages

Slat tracking

Shadow edge tracking

Shadow edge tracking and Slat tracking

Parameter "Movement position (in %)"

Parameter "Slat position (in %)"

This parameter is visible when parameter "Solar protection position" is selected "Without tracking".Without auto-guiding a fixed position is travelled to.

Options: **0...100**

Parameter "Range 1 (0°-x°)"

Parameter "Range 2 (x°-y°)"

Parameter "Range 3 (y°-z°)"

Parameter "Range 4 (z°-90°)"

Parameter "with x"

Parameter "with y"

Parameter "with z"

This parameter is visible when parameter "Solar protection position" is selected "Slats in 4 stages".With the four step slat guiding the fixed movement position and the four slat angles are defined (only for shades with slats).

Options: **0...100**

Options: **0...90**

Parameter "Movement position (in %)"

Parameter "Facade alignment (North = 0°,O=90°, S=180°, W=270°)"

Parameter "Inclination of the facade in °(0°=no inclination) "

Parameter "Slat orientation"

Parameter "Slat width (in mm)"

Parameter "Slat distance (in mm)"

Parameter "Min.angle change for sending new slat position"

Parameter "Slat angle (in°) after 0% slat movement command"

Parameter "Slat angle (in°) after 100% slat movement command"

For the slat guiding the fixed movement position and the characteristics of the facade and the slats are specified (only for shades with slats). The device calculates the ideal slat position, so that no direct light can enter through the slats, but such that, at all times, as much indirect light as possible lights up the room.

With the setting for the minimum change of angle for transmission of a movement command, the "increment" respectively the frequency of the angle correction can be adjusted. Hereby, the technical possibilities of the drive used must be taken into consideration. The minimum change of angle is taken into account in the device internal calculation, so that direct sunlight can be prevented, even for large steps.

The slat angle at 0% move command and at 100% move command must, during commissioning, be aligned to the pre-settings of the parameters, and, if necessary, corrected, so that the slat guide on the facade works properly. For this purpose, observe chapter 4.25.1.5 Slat position for horizontal slats and chapter 4.25.1.6 Slat position for vertical slats.Options: **0...360**

Options: **-90...90**

Options: **Horizontal/Vertical**

Options: **0...1000**

Options: **0...1000**

Options: **0...90**

Options: **1...180**

Options: **1...180**

Parameter "Movement position (in %)"

Parameter "Facade alignment (North = 0°,O=90°, S=180°, W=270°)"

Parameter "Inclination of the facade in °(0°=no inclination) "

Parameter "Window height in cm"

Parameter "Max.penetration depth of sun into the room in cm"

Parameter "Shadow edge displacement at or above ... cm will be tracked"

For the shadow edge auto-guide a fixed slat position is set (only for shades with slats). For the movement position the orientation and angle of the facade and the height of the windows (glass height) are specified. The device calculates the ideal position so that the specified maximum depth of penetration into the room for the sun, is not exceeded.

Using the setting for, from which shadow edge shift, in centimetres, a move command is to be transmitted, the frequency of the position correction can be adjusted. Hereby, the technical possibilities of the drive used must be taken into consideration.

See also chapter 4.25.1.3 Shadow edge tracking and slat tracking.Options: **1...100**

Options: **0...360**

Options: **-90...90**

Options: **0...1000**

Options: **10...250**Options: **1...50**

Note: The slant of the facade and the angle set for the height of the sun should be compatible. Thus, if the facade is slanted forwards by 10°, then the sun only needs to be considered up to a height of 80°. Enter this separately with the parameters the parameter for sun direction and height (see chapter 4.25.2 solar protection automation, Sun position).

Intermediate position for the short retraction delay time

Solar protection automation moves to the "short delay" position if the shading has been extended by the solar protection automation and the brightness is then below the value (threshold value - switching distance) for longer than the short delay time.

Parameter "Use movement position"

Parameter "Movement position (in %)"

Parameter "Use slat position"

Parameter "Slat position (in %)"

For the movement position "short retraction delay" a movement position and a slat position can be set. Settings for slats are only displayed if the shading for the facade has been defined as having slats (see chapter 4.25.1 facade safety).

Options: **No/Yes**

Options: **0...100**

Options: **No/Yes**

Options: **0...100**

Parameter "Movement position (in %)"

Parameter "Slat position (in %)"

Standard movement position.

Solar protection automation is terminated and the standard position is approached.

1.the sun is not coming from the set shading direction

2.the brightness is then below the value (threshold value - switching distance)

3.for longer than the time (short delay + retraction delay time).

Settings for slats are only displayed if the shading for the facade has been defined as having slats (see chapter 4.25.1 facade safety).

Options: **0...100**

Facade status output

Information on the various possibilities for the status output can be found in chapter 4.25.1.8 Status output. In principal the status output is a singular function, but, in compact form, possible for singular and for all facades possible. The texts for the output in compact form are defined in the general settings for the facade (see chapter 4.25.1.8 Status output).

Parameter "Analysis of the facade status release object"

Parameter "Value up to 1st communication"

Set which value in the status release object for this facade means active respectively in active.

Options: **1=activated | 0=deactivated/0=activated | 1=deactivated**

Options: **0/1**

4.26 Parameter window “Computer”

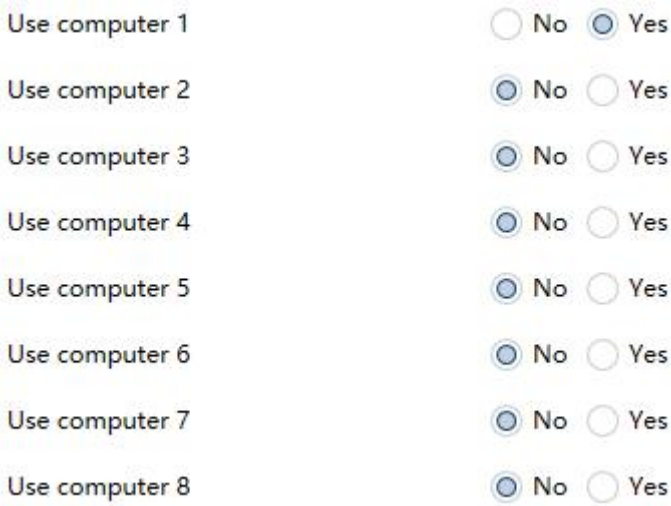


Fig.4.26 Parameter window “Computer”

Parameter “Use computer 1/.../8”

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.

Options:

No

Yes

4.26.1 Parameter window “Computer 1/.../8”

Maintain the
input values received via communication objects: not

Function (I = Input): Condition: I1 = I2

Input type: 1 bit

Start value I1: 0

Start value I2: 0

Output type: 1 bit

Output value O1
- if the condition is met: 0
- if the condition is not met: 0
- if the monitoring period is exceeded: 0
- if blocked: 0

Output value O2
- if the condition is met: 0
- if the condition is not met: 0
- if the monitoring period is exceeded: 0
- if blocked: 0

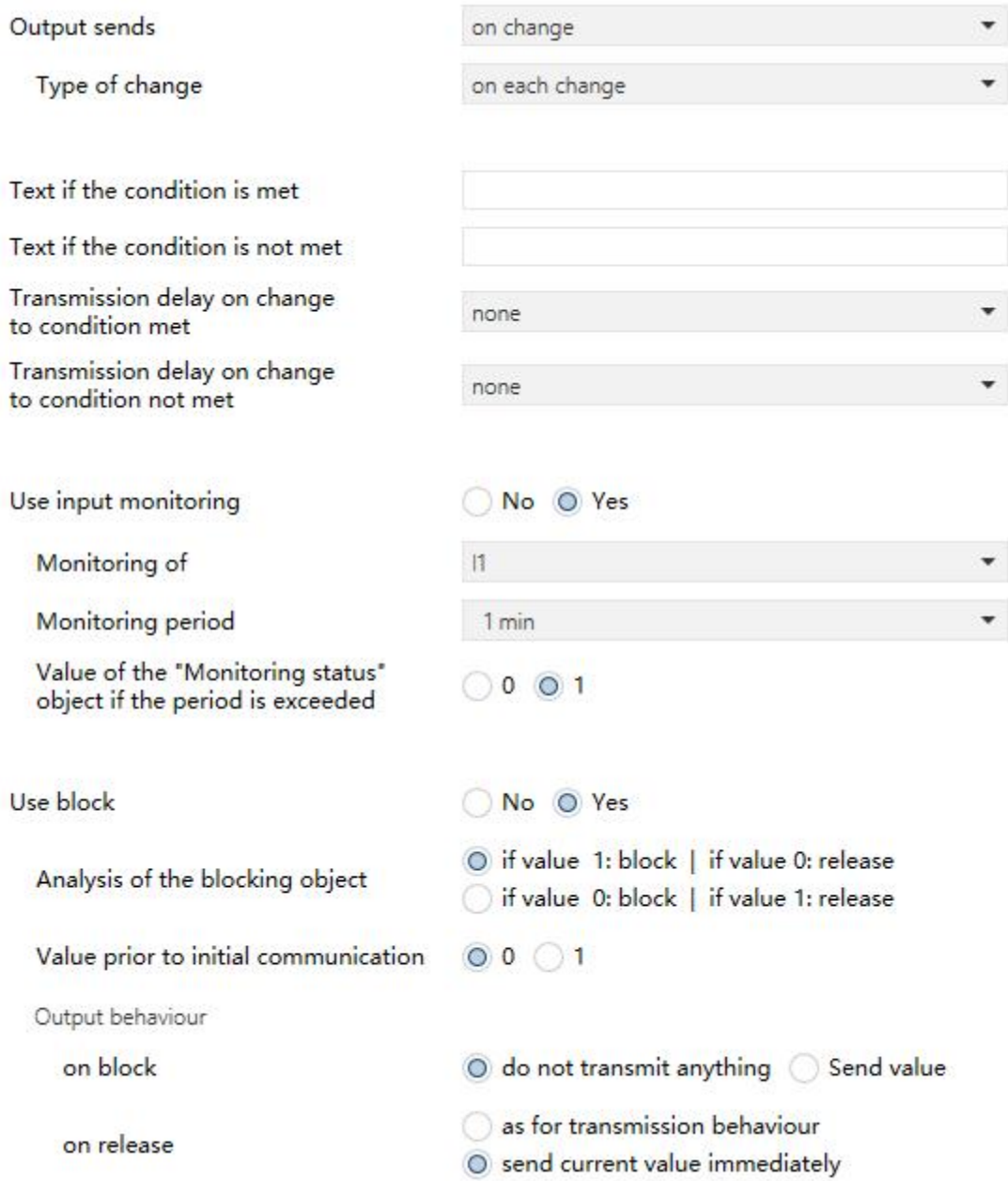


Fig.4.26.1 Parameter window “Computer 1/.../8”

Parameter “input values received via communication objects”

Set, in which cases input values received are to be kept per object.

Options:

Not

After power supply restoration

After power supply restoration and programming

Note: 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).

Parameter "Function (I=Input)"

Parameter "Input type"

Parameter "Tolerance for comparison"

Parameter "Start value |1/2/3"

Select the function set the input mode and starting values for input 1/2/3.

Options: **Condition: |1=|2/Condition: |1>|2/.../Transformation: General**

Options: **1 bit/1 byte (0..255)/.../4byte floating point**

Options: **0...100**

Options: **0...100**

Parameter "Output type"

Parameter "if the condition is met"

Parameter "if the condition is not met"

Parameter "if the monitoring period is exceeded"

Parameter "if blocked"

When querying the prerequisites set the output type and output values at different statuses:

Options: **1 bit/1 byte (0..255).../4byte counter with math.symbol/4byte floating point**

Options: **0...65535**

Parameter "Output sends"

Parameter "Type of change"

Parameter "Send cycle"

Set the output send pattern.

Options: **On change/On change and after reset/.../When receiving an input object an periodically**

Options: **On each change/On change to condition met/On change to condition not met**

Options: **5sec/10s/.../1.5h/2h**

Parameter "Text if the condition is met"

Parameter "Text if the condition is not met"

Set the text to be displayed for conditions met / not met.Free text max.14 chars.

Parameter "Transmission delay on change to condition met"

Parameter "Transmission delay on change to condition not met"

If applicable set the send delays.

Options:

None

1sec

...

1h

2h

Parameter "Use input monitoring"

Parameter "Monitoring of"

Parameter "Monitoring period"

Parameter "Value of the "Monitoring status" object if the period is exceeded"

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.

Options: **No/Yes**

Options: **|1/|2/|1 and |2**

Options: **5sec/10sec/.../1h/2h**

Options: **0/1**

Parameter "Use block"

With the help of the "Blocking" input object, the switching output can be blocked, e.g. by a manual command (push button).

Options:

No

Yes

Parameters as follow are visible when "use block" is selected "yes".

Parameter "Analysis of the blocking object"

This parameter is used to set what a 1 or 0 at the block entry means.

Options:

If value 1:block | if value 0: release

If value 0:block | if value 1: release

Parameter "Value prior to initial communication"

An object value up to the 1st communication is specified here.

Options: **0/1**

Parameter "on block"

Parameter "on release"

The behaviour of the switching output during locking/release can be set.

Options: **Do not transmit anything/Send value**

Options: **As for transmission behaviour/Send current value immediately**

4.27 Parameter window “Weekly time switch”

In the weekly timer in the device 24 periods can be defined. These periods are, for example, used for the internal automatic function timed opening and timed closure.

The respective period objects can be configured as inputs or outputs, i.e. send to the bus (timer internal, use internal and for other bus members) or be switched from there (timer function via an external device). If several devices are used in the system, the timer settings may be done on one device that sends the period objects as output. The other devices take over the timer-command (input), whereby a better synchronisation is achieved.

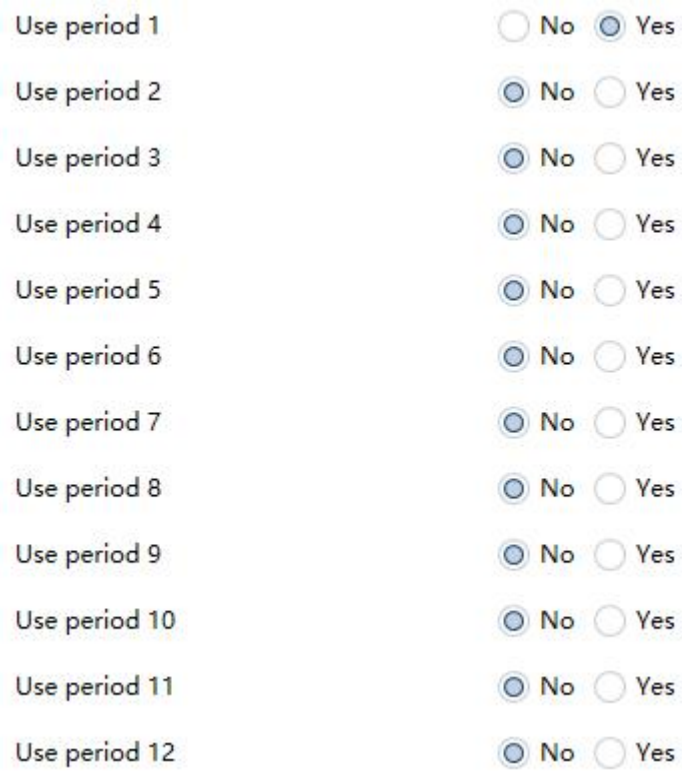


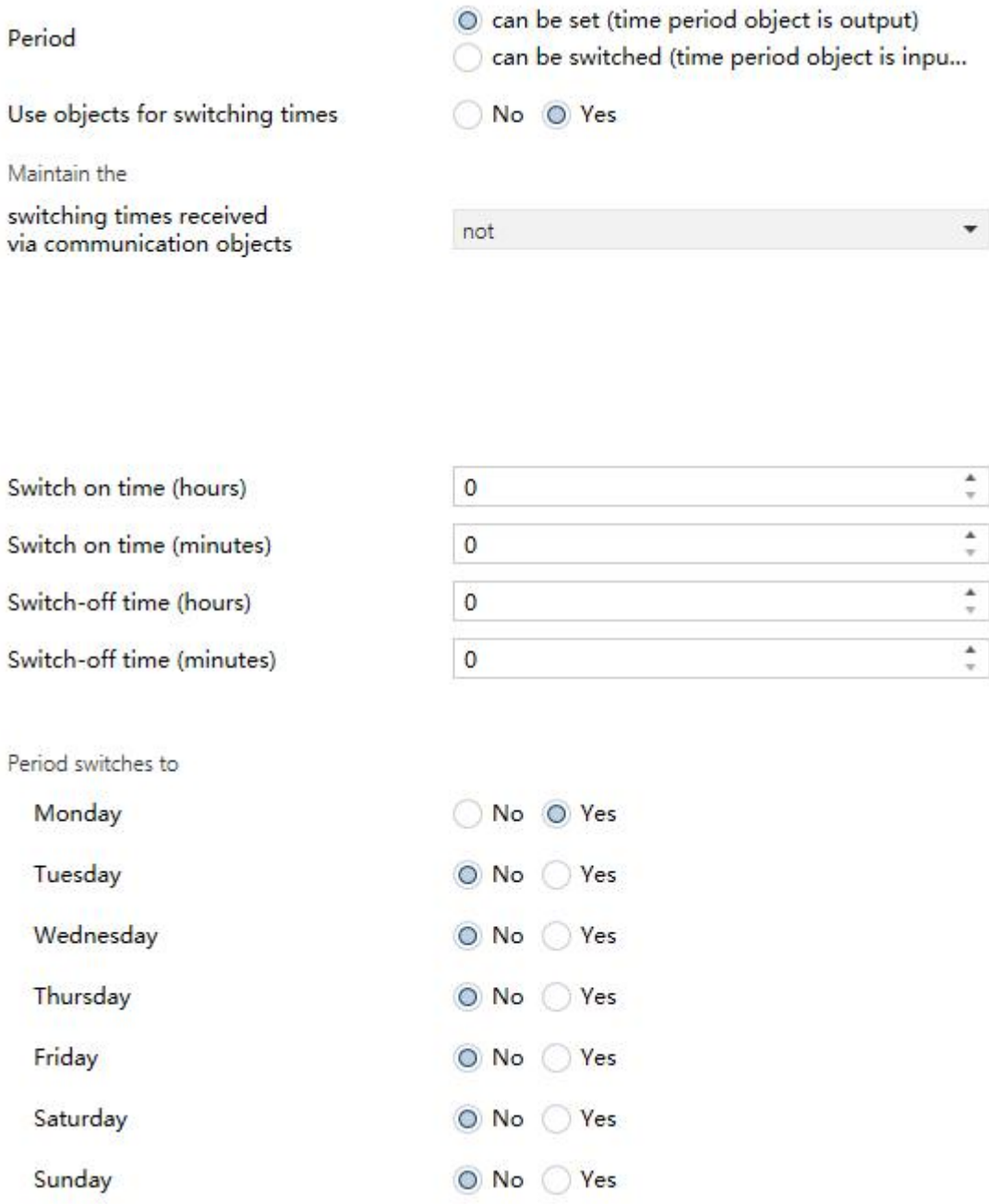
Fig.4.27 Parameter window “Weekly time switch”

Parameter “Use period 1/.../24”

Activate the required periods for the weekly timer.

Options:**No/Yes**

4.27.1 Parameter window “Period 1/.../24”



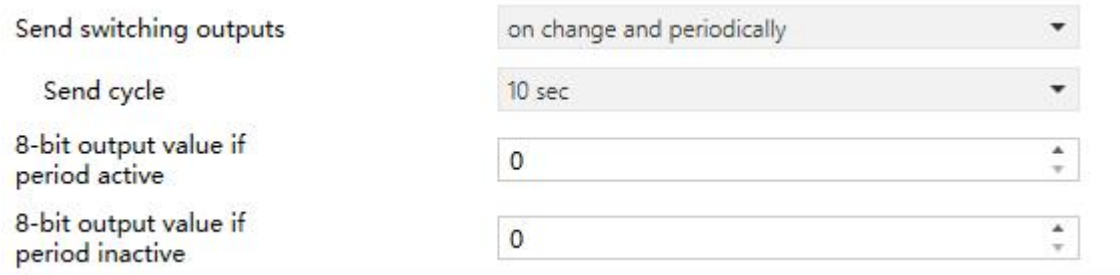


Fig.4.12.1(1) Parameter window "Period 1/.../24_can be set(time period object is output)"

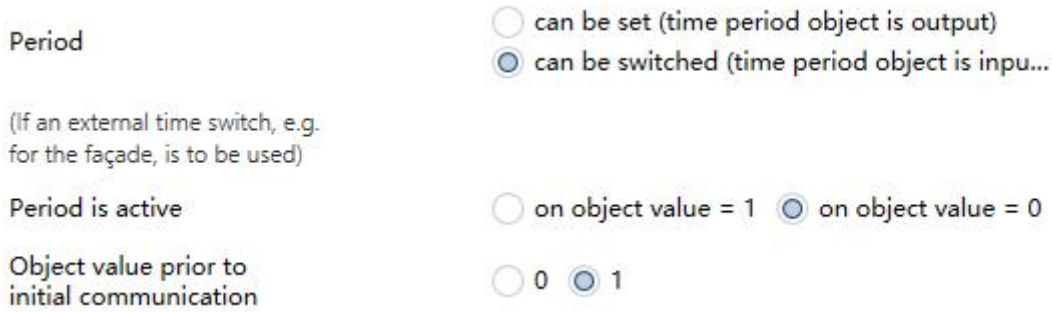


Fig.4.12.1(2) Parameter window "Period 1/.../24_can be switched(time period object is input)"

Parameter "Period"

Set whether the period can be set (period object is the output and is sent to the bus) or if the period is received externally via the bus (period object is the input).

Options:

Can be set(time period object is output)

Can be switched(time period object is input)

Parameter "Use objects for switching times"

Parameter "switching times received via communication objects"

Set whether the switching times are set per object and in which cases the switching times received are to be retained.

Options: **No/Yes**

Options: **Not/After power supply restoration/After power supply restoration and programming**

Note: 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).

Parameter "Switch on time (hours)"

Parameter "Switch on time (minutes)"

Parameter "Switch-off time (hours)"

Parameter "Switch-off time (minutes)"

Parameter "Monday"

Parameter "Tuesday"

Parameter "Wednesday"

Parameter "Thursday"

Parameter "Friday"

Parameter "Saturday"

Parameter "Sunday"

Set the switching on and off times and the days of the week for this period. If, for example, 15:35 is set as the switch-off time, the output switches off on the change from 15:35 to 15:36.

Options: **0...23**

Options: **0...59**

Options: **0...23**

Options: **0...59**

Options: **No/Yes**

Parameter "Send switching outputs"

Parameter "Send cycle"

Parameter "8-bit output value if period active"

Parameter "8-bit output value if period inactive"

Set the send pattern for the week clock switch output and the value of the 8-bit output.

Options: **not/on change/.../ on change to inactive and periodically**

Options: **5sec/10s/.../1.5h/2h**

Options: **0...255**

Options: **0...255**

4.28 Parameter window “Calendar time switch”

In the calendar timer in the device, four periods with two switching sequences can be defined. These periods are, for example, used for the internal automatic function timed opening and timed closure.

Fig.4.28 Parameter window “Calendar time switch”

Parameter “Period 1/2/3/4”

This parameter sets whether use period 1/2/3/4.

Options:

Not active

Active

4.28.1 Parameter window “Period 1/2/3/4”

Use objects for switching and switching times	○ No ◉ Yes
Maintain the switching data and times received via communication objects	not
From:	
Month	January
Day	1
Up to and including:	
Month	December
Day	1
Sequence 1:	
Switch on time (hours)	0
Switch on time (minutes)	0
Switch-off time (hours)	0
Switch-off time (minutes)	0
Send switching outputs	on change to inactive and periodically
Send cycle	10 sec
8-bit output value if sequence active	0
8-bit output value if sequence inactive	0

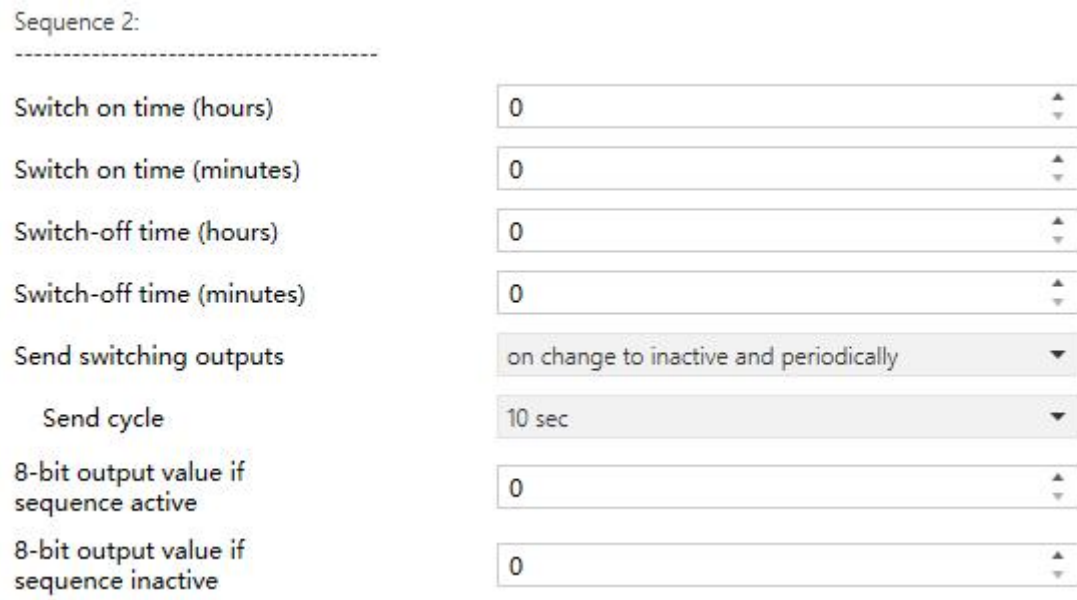


Fig.4.11.1 Parameter window “Period 1/2/3/4”

Parameter “Use objects for switching and switching times”

Parameter “switching data and times received via communication objects”

Set whether the switching date and the switching time are set per object and in which cases the switching dates and times received are to be retained.

Options: **No/Yes**

Options: **Not/After power supply restoration/After power supply restoration and programming**

Note: 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).

From/Up to and including:

Parameter “Month”

Parameter “Day”

The start date and end date are defined.

Options: **January/February/.../November/December**

Options: **1...31**

Sequence 1/2

Parameter "Switch on time (hours)"

Parameter "Switch on time (minutes)"

Parameter "Switch-off time (hours)"

Parameter "Switch-off time (minutes)"

A sequence sets the switch-on and switch-off time for each day of the set period.

Options: **0...23**

Options: **0...59**

Options: **0...23**

Options: **0...59**

Parameter "Send switching outputs"

Parameter "Send cycle"

Parameter "8-bit output value if sequence active"

Parameter "8-bit output value if sequence inactive"

Set the send pattern for the switch sequence and the value of the 8-bit output.

Options:**not/on change/ on change to active/ .../on change to inactive and periodically**

Options:**5sec/10s/.../1.5h/2h**

Options: **0...255**

4.29 Parameter window “Logic”

The device has 16 logic inputs, eight AND and eight OR logic gates.

Use logic inputs	○ No ◉ Yes
Object value before 1. communication for:	
- Logic input 1	○ 0 ◉ 1
- Logic input 2	◉ 0 ○ 1
- Logic input 3	◉ 0 ○ 1
- Logic input 4	◉ 0 ○ 1
- Logic input 5	◉ 0 ○ 1
- Logic input 6	◉ 0 ○ 1
- Logic input 7	◉ 0 ○ 1
- Logic input 8	◉ 0 ○ 1
- Logic input 9	◉ 0 ○ 1
- Logic input 10	◉ 0 ○ 1
- Logic input 11	◉ 0 ○ 1
- Logic input 12	◉ 0 ○ 1
- Logic input 13	◉ 0 ○ 1
- Logic input 14	◉ 0 ○ 1
- Logic input 15	◉ 0 ○ 1
- Logic input 16	◉ 0 ○ 1

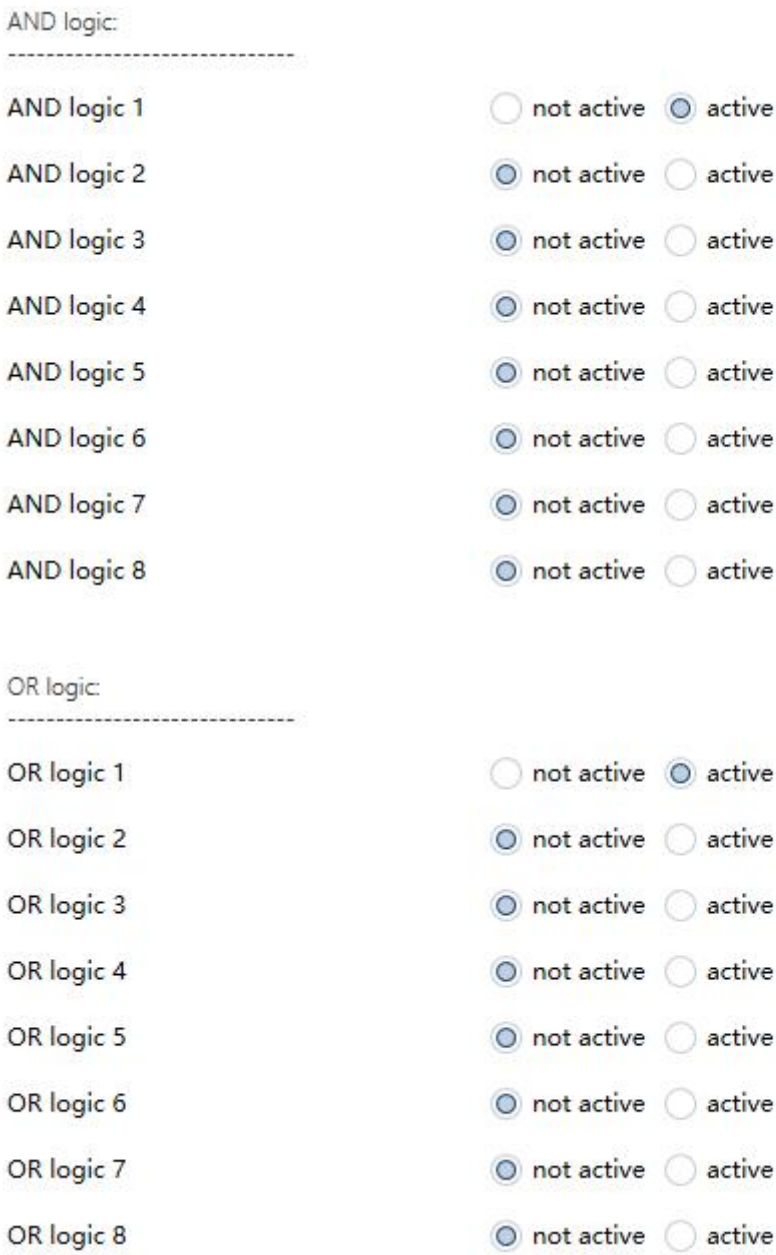


Fig.4.29 Parameter window “Logic”

Parameter “Use logic inputs”

This parameter is used to set whether use logic inputs.Options:

No

Yes

Object value before 1. communication for:

Parameter "-Logic input 1/.../16"

This parameter is visible when previous parameter is selected "yes ".

The device has 16 logic inputs, 8 AND and 8 OR logic gates.

For each logic input, the object value can be assigned before the first communication, which is used for the initial commissioning and when the voltage returns.

Options:

0

1

AND/OR logic

Parameter "AND logic 1/.../6"

Parameter "OR logic 1/.../6"

This parameter is used to set whether active and/or logic.

Options:

not active

active

4.29.1 Parameter window “AND/OR logic 1/.../8”

1st input	do not use
2nd input	do not use
3rd input	do not use
4th input	do not use
Output type	one 1 bit object / two 8 bit objects
Object type	Value (0 ... 255)
Object A output value if logic = 1	1
Object B output value if logic = 1	1
Object A output value if logic = 0	0
Object B output value if logic = 0	0
Object A output value if blocking active	0
Object B output value if blocking active	0
Object A output value if monitoring time exceeded	0
Object B output value if monitoring time exceeded	0
Transmission behaviour	on change of logic + receipt of obj.+ periodically
Send cycle	10 sec

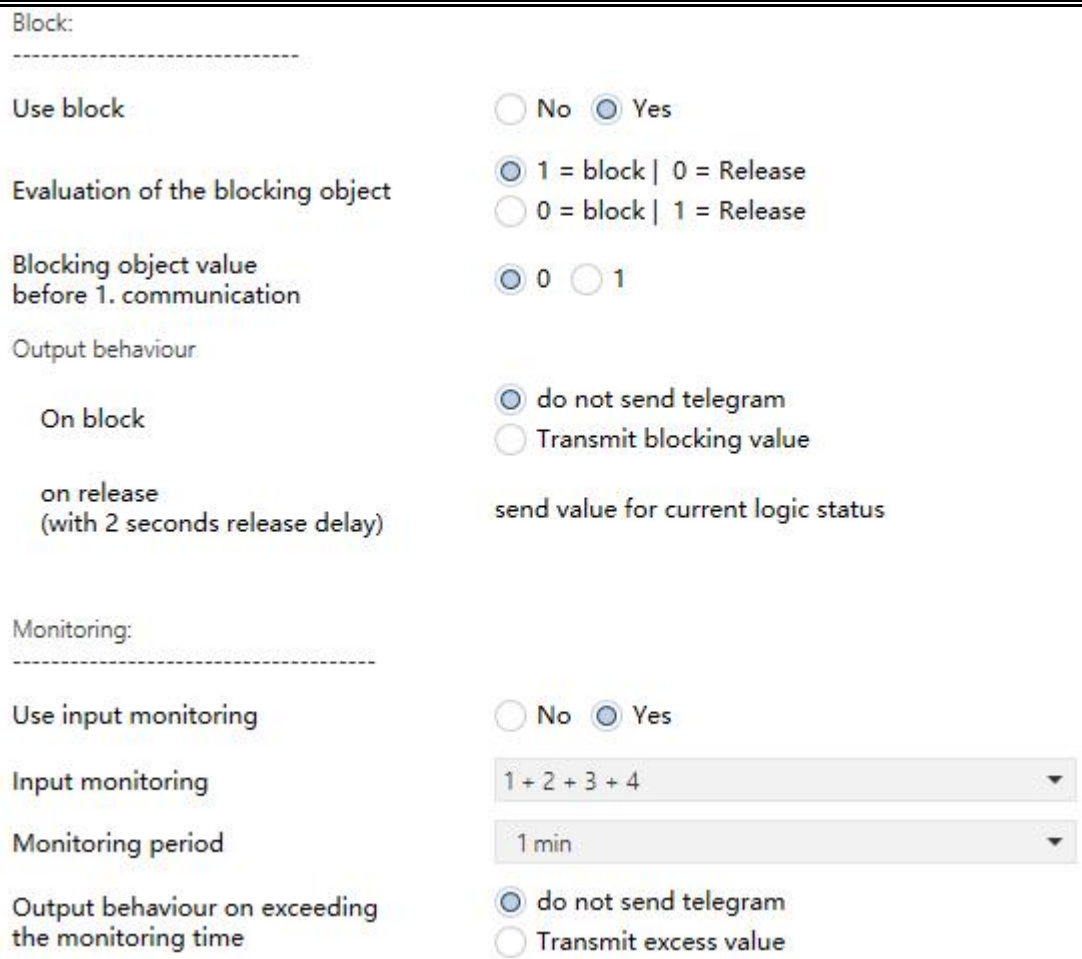


Fig.4.29.1 Parameter window “AND logic 1/.../8”

Parameter “1st input”

Parameter “2nd input”

Parameter “3rd input”

Parameter “4th input”

Four inputs can be defined for each logic gate.Options:

Do not use

Logic input 1...16

Logic input 1...16 inverted

GPS Malfunction = ON

GPS Malfunction = OFF

Temperature sensor malfunction = ON

Temperature sensor malfunction = OFF

...

Weekly clock OR 1...4

Weekly clock OR 1...4 inverted

Parameter "Output type"

Each logic output can transmit one 1-bit or two 8-bit objects.

Options:

one 1 bit object

two 8 bit objects

Parameters as follow are visible when parameter "logic output sends" is selected "one 1 bit object".

Parameter "Output value If logic = 1"

Parameter "Output value If logic = 0"

Parameter "Output value If blocking active"

Parameter "Output value If monitoring time exceeded"

If the output type is a 1-bit object, set the output values for the various conditions.

Options: **0...1Parameters as follow are visible when parameter "logic output sends" is selected "two 8 bit objects".**

Parameter "Object type"

Parameter "Object A output value If logic = 1"

Parameter "Object B output value If logic = 1"

Parameter "Object A output value If logic = 0"

Parameter "Object B output value If logic = 0"

Parameter "Object A output value If blocking active"

Parameter "Object B output value If blocking active"

Parameter "Object A output value If monitoring time exceeded"

Parameter "Object B output value If monitoring time exceeded"

If the output type is two 8-bit objects, set the type of object and the output values for the various conditions.

Options:**Value (0...255)/Percent (0%...100%)/Angle (0 ° ...360 °)/Scene call-up (0...63)**Options:**0...255/0%...100%/0°...360°/0...63**

Parameter "Transmission cycle"

Set the output send pattern.

Options: **on change of logic/.../ On change of logic + receipt of object + periodically**

Options: **5sec/10s/.../1.5h/2h**

Blocking:

Parameter "Use block"

This parameter is used to set whether activate the block for the logic output。

Options:

No

Yes

Parameters as follow are visible when "use block" is selected "yes".

Parameter "Evaluation of the blocking object"

Each logic gate has its own block object (AND logic X: output block), for which it is set here whether it blocks on receipt of a 1 or 0.

Options:

1=block | 0=release

0=block | 1=release

Parameter "Blocking object value before 1.communication"

Before the first communication, i.e. after commissioning or bus voltage restoration, the block can be active (1) or not (0).

Options: **0/1**

Parameter "With blocking"

This parameter is used to set the action when locking.

Options:

Do not send telegram

Transmit blocking value

Parameter "On release(with 2 seconds release delay)"

This parameter is used to set the action when release.

Options: [Dependent on the "Switching output sends" setting]

Monitoring:

Parameter "Use input monitoring"

Parameter "Input monitoring"

Parameter "Monitoring period"

Parameter "Output behaviour on exceeding the monitoring time"

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.

Options:**No/Yes**

Options:**1/2/3/4/.../2+3+4/1+2+3+4**

Options:**5sec/10sec/.../1.5h/2h**

Options:**Do not send telegram/Transmit excess value**

Chapter 5 Description of communication object

The communication object is the medium to communicate other device on the bus, namely only the communication object can communicate with the bus.

NOTE: "C" in "Flag" column in the below table means enable the communication function of the object; "W" means value of object can be written from the bus; "R" means the value of the object can be read by the other devices; "T" means the object has the transmission function; "U" means the value of the object can be updated.

5.1 Communication object of "General settings"

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	1	Software version	Output			2 bytes	C	R	-	T	-	DPT version	Low

Fig.5.1 Communication object of "General settings"

NO.	Name	Function	Types	Property	DPT
1	**Software version**	**Output**	**2bytes**	**C,R,T**	**1.001 Switch**
Read the Software Version using this Object.					

Table5.1 Communication object of "General settings"

5.2 Communication object of “GPS settings”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
104	GPS malfunction (0 : OK...	Output			1 bit	C	R	-	T	-	boolean	Low
106	Date	Input / Output			3 bytes	C	R	W	T	-	date	Low
107	Time	Input / Output			3 bytes	C	R	W	T	-	time of day	Low
108	Date and time query	Input			1 bit	C	-	W	-	-	trigger	Low
105	Date / time	Input / Output			8 bytes	C	R	W	T	-	date time	Low

Fig.5.2 Communication object of “GPS settings”

NO.	Name	Function	Types	Property	DPT
104	**GPS malfunction (0: OK | 1: NOK)**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If enabled, gps error is recognised = 1 when no value received after a 20min-2hr time. (0 = No Erorr) Default.					
105	**Date / time**	**Output**	**8 Bytes**	**R,W,C,T**	**19.001 date time**
Both Date and Time are read or written using this object.					
106	**Date**	**Output**	**3 Bytes**	**R,W,C,T**	**11.001 date**
The Date can be read or written here. When setting manually, a maximum interval of 10 seconds between setting the Date and Time is allowed.					
107	**Time**	**Output**	**3 Bytes**	**R,W,C,T**	**10.001 time of day Day**
The Time can be read or written here. When setting manually, a maximum interval of 10 seconds between setting the Date and Time is allowed.					
108	**Date and time query**	**Input**	**1 Bit**	**W,C**	**1.017 trigger**

Writing a 1 to the communication object triggers the device to send its current date and time information to the KNX bus. This is often used to synchronize or retrieve the current time from the device.

Table 5.2 Communication object of “GPS settings”

5.3 Communication object of “Location”

	序号	名称	对象功能	描述	群组地址	长度	C	R	W	T	U	数据类型	优先级
	110	Location: Latitude [°]	Output			4 bytes	C	R	-	T	-	angle (degree)	低
	111	Location: Longitude [°]	Output			4 bytes	C	R	-	T	-	angle (degree)	低

Fig.5.3 Communication object of “Location”

NO.	Name	Function	Types	Property	DPT
110	**Location: Latitude [°]**	**Output**	**4 Bytes**	**R,C,T**	**14.007 angle(degree)**
The latitude can be read in degrees [°] (Provided from the GPS).Negative = South, positive = North					
111	**Location: Longitude [°]**	**Output**	**4 Bytes**	**R,C,T**	**14.007 angle(degree)**
The longitude can be read in degrees [°] (Provided from the GPS).Negative = West, positive = East					

Table 5.3 Communication object of “Location”

5.4 Communication object of “Rain”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
114	Rain: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
115	Rain: Switching output with fixed delays	Output			1 bit	C	R	-	T	-	switch	Low
116	Rain: Switching delay to rain	Input			2 bytes	C	-	W	-	-	time (s)	Low
117	Rain: Switching delay to no rain	Input			2 bytes	C	-	W	-	-	time (s)	Low

Fig.5.4 Communication object of “Rain”

NO.	Name	Function	Types	Property	DPT
114	**Rain: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
This Object sends if Rain recognition on the bus (Rain=1; No Rain=0). After reset, (by settings: by change, cyclically).					
115	**Rain: Switching output with fixed delays**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
(Only valid up to the first call) 1 = rain, 0 = no rain. When 1 , the system reacts according to predefined time intervals on how it handles the transition back to dry conditions.(Rain=1; No Rain=0)					
116	**Rain: Switch delay to rain**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
The delay can be set (in sec) for Rain recognition for one time.					
117	**Rain: Switch delay to no rain**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
The delay can (in sec) for No Rain recognition for one time					

Table5.4 Communication object of “Rain”

5.5 Communication object of “Temperature”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
121	Temperature sensor: Malfunction	Output			1 bit	C	R	-	T	-	switch	Low
122	Temperature sensor: External measurement	Input			2 bytes	C	-	W	T	-	temperature (°C)	Low
123	Temperature sensor: Internal measurement	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
124	Temperature sensor: Total measurement	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
125	Temperature sensor: Min./Max. measurement query	Input			1 bit	C	-	W	-	-	trigger	Low
126	Temperature sensor: Minimum measurement	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
127	Temperature sensor: Maximum measurement	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
128	Temperature sensor: Min./Max. measurement reset	Input			1 bit	C	-	W	-	-	trigger	Low
129	Felt temp.: Measured value	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low

Fig.5.5 Communication object of “Temperature”

NO.	Name	Function	Types	Property	DPT
121	**Temperature sensor: Malfunction**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
If enabled, it indicates if the temperature sensor is experiencing an error (1 = malfunction, 0 = no malfunction)					
122	**Temperature sensor: External measured value**	**Input**	**2 Bytes**	**W,C,T**	**9.001 temperature (°C)**
when enabled, it measure the value of an external KNX Temp Sensor. If using an External Sensor the values should be sent to this object.					
123	**Temperature sensor: Measured value**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Measured Value of the internal Sensor.					
124	**Temperature sensor: Switching output, total**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
External measured value proportion of of the total Value (100% = Internal value is disgarded). If you want to mix the temperature use another percentage setting.					
125	**Temperature sensor: Min./max. measurement query**	**Input**	**1 Bit**	**W,C**	**1.017 trigger**

Request the maximum and minimum wind value recorded. Writing a 1 to the communication object triggers the temperature sensor to report its minimum and maximum measured values to the KNX bus.					
126	**Temperature sensor: Minimum measurement**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Minimum Measured Value after Reset the bus send it back after requesting a query.					
127	**Temperature sensor: Maximum measurement**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Maximum Measured Value after Reset the bus send it back after requesting a query.					
128	**Temperature sensor: Min./max. reading reset**	**Input**	**1 Bit**	**W,C**	**1.017 trigger**
Min./Max values reset after requesting them using the Measurement query. (Obj. No. 125).					
129	**Temp. sensed: Measured value**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Felt temperature is according to wind chill and heat index, which account for wind and humidity to indicate how temperature feels to people.					

Table 5.5 Communication object of “Temperature”

5.6 Communication object of “Temperature threshold value”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
131	Temp. threshold value 1: Absolute value	Input / Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
133	Temp. threshold value 1: Switching delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
134	Temp. threshold value 1: Switching delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
135	Temp. threshold value 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
136	Temp. threshold value 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low
132	Temp. threshold value 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low

Fig.5.6 Communication object of “Temperature threshold value”

NO.	Name	Function	Types	Property	DPT
131	**Temp. threshold value 1: Absolute value**	**Input/Output**	**2 Bytes**	**R,W,C,T**	**9.001 temperature (°C)**
Reference point of setting and/or reading the threshold value 1.					
132	**Temp. threshold value 1: (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Temp threshold value 1.					
133	**Temp. threshold value 1: Switching delay from 0 to 1**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 135 changes from 0 to 1, after (Measured value is over Obj.No. 131).					
134	**Temp. threshold value 1: Switching delay from 1 to 0**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 135 changes from 1 to 0, after (Measured value is under Obj.No. 131).					
135	**Temp. threshold value 1: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) temperature threshold 1 (The telegram value is defined by the parameter “Output is at (TV=threshold value) (SD=Switching distance)”).					

136	**Temp. threshold value 1: Switching output block**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on temperature threshold 1.					

Table5.6 Communication object of “Temperature threshold value”

5.7 Communication object of “Frost alarm”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
161	Frost alarm	Output			1 bit	C	R	-	T	-	switch	Low

Fig.5.7 Communication object of “Frost alarm”

NO.	Name	Function	Types	Property	DPT
161	**Frost alarm**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Independet of the façade Frost alarm. Is set HIGH according to External Temperature, Time during or after precipitation. Is set LOW according to External Temperatue, if a duration time is exceeded. Value can be Inverted.					

Table5.7 Communication object of “Frost alarm”

5.8 Communication object of “Humidity measured value”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
391	Humidity sensor: malfunction	Output			1 bit	C	R	-	T	-	switch	Low
394	Humidity sensor: external measured value	Input			2 bytes	C	-	W	T	-	humidity (%)	Low
395	Humidity sensor: internal measured value	Output			2 bytes	C	R	-	T	-	humidity (%)	Low
396	Humidity sensor: total measured value	Output			2 bytes	C	R	-	T	-	humidity (%)	Low
397	Humidity sensor: measured value min./max. query	Input			1 bit	C	-	W	-	-	trigger	Low
398	Humidity sensor: minimum measured value	Output			2 bytes	C	R	-	T	-	humidity (%)	Low
399	Humidity sensor: maximum measured value	Output			2 bytes	C	R	-	T	-	humidity (%)	Low
400	Humidity sensor: measured value min./max. reset	Input			1 bit	C	-	W	-	-	trigger	Low

Fig.5.8 Communication object of “Humidity measured value

NO.	Name	Function	Types	Property	DPT
391	**Humidity sensor: Malfunction**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
If enabled, it indicates if the humidity sensor is experiencing an error (1 = malfunction, 0 = no malfunction)					
394	**Humidity sensor: External measured value**	**Input**	**2 Bytes**	**C,W,T**	**9.007 humidity(%)**
When enabled, it reads the value of an external KNX Humidity Sensor. If using an External Sensor the values should be sent to this object.					
395	**Humidity sensor: Measured value**	**Output**	**2 Bytes**	**R,C,T**	**9.007 humidity(%)**
Measured Value of the internal humidity sensor.					
396	**Humidity sensor: Switching output, total**	**Output**	**2 Bytes**	**R,C,T**	**9.007 humidity(%)**
External measured value proportion of the total Value (100% = Internal value is disgarded). If you want to mix the humidity use another percentage setting.					

397	**Humidity sensor: Min./max. measurement query**	**Input**	**1 Bit**	**W,C**	**1.017 trigger**
Request the maximum and minimum value recorded. Writing a 1 to the communication object triggers the humidity sensor to report ist maximum and minimum measured values to the KNX bus.					
398	**Humidity sensor: Minimum measurement**	**Output**	**2 Bytes**	**R,C,T**	**9.007 humidity(%)**
Minimum Measured Value after Reset the bus send it back after requesting a query.					
399	**Humidity sensor: Maximum measurement**	**Output**	**2 Bytes**	**R,C,T**	**9.007 humidity(%)**
Maximum Measured Value after Reset the bus send it back after requesting a query.					
400	**Humidity sensor: Min./max. reading reset**	**Input**	**1 Bit**	**W,C**	**1.017 trigger**
Min./Max values reset after requesting them using the Measurement query. (Obj.No. 397).					

Table5.8 Communication object of “Humidity measured value

5.9 Communication object of “Humidity threshold value”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
411	Humidity threshold value 1: Absolute value	Input / Output			2 bytes	C	R	W	T	-	humidity (%)	Low
412	Humidity threshold value 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
413	Humidity threshold value 1: Delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
414	Humidity threshold value 1: Delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
415	Humidity threshold value 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
416	Humidity threshold value 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.9 Communication object of “Humidity threshold value”

NO.	Name	Function	Types	Property	DPT
411	**Humidity threshold value 1: Absolute value**	**Input / Output**	**2 Bytes**	**R,W,C,T**	**9.007 humidity(%)**
Reference point of setting and/or reading the Humidity threshold value 1.					
412	**Humidity threshold value 1: (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Humidity threshold value 1.					
413	**Humidity threshold value 1: Delay from 0 to 1**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 415 changes from 0 to 1, after (Measured value is over Obj.No. 411).					
414	**Humidity threshold value 1: Delay from 1 to 0**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 415 changes from 1 to 0, after (Measured value is under Obj.No. 411).					
415	**Humidity threshold value 1: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) humidity threshold 1(The telegram value is defined by the parameter “Output is at (TV=threshold value)					

(SD=Switching distance)”).					
416	**Humidity threshold value 1: Switching output block**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on humidity threshold 1.					

Table5.9 Communication object of “Humidity threshold value”

5.10 Communication object of “Dew point measured value”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
461	Dew point: Measurement	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
462	Cooling medium temp.: Threshold value	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
463	Cooling medium temp.: Actual value	Input			2 bytes	C	R	W	T	-	temperature (°C)	Low
464	Cooling medium temp.: Offset change (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
465	Cooling medium temp.: Offset current	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
466	Cooling medium temp.: Switching delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
467	Cooling medium temp.: Switching delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
468	Cooling medium temp.: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
469	Cooling medium temp.: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.10 Communication object of “Dew point measured value”

NO.	Name	Function	Types	Property	DPT
461	**Dewpoint: Measured value**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Automatically calculated dewpoint temperature value and sent on the bus.					
462	**Coolant temp.: Threshold value**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Info to air conditioning system (threshold value = minimum nominal value of coolant temperature).					
463	**Coolant temp.: Actual value**	**Input**	**2 Bytes**	**R,W,C, T**	**9.001 temperature (°C)**
Surface temperature value measured.					
464	**Coolant temp.: Offset change (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Offset value.					
465	**Coolant temp.: Offset current**	**Output**	**2 Bytes**	**R,C,T**	**9.001 temperature (°C)**
Offset value used for altering the threshold value, where the Threshold value=Dew Point+Offset.					
466	**Coolant temp.: Switching delay from 0 to 1**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**

Indicating the time period in seconds that should be exceeded before Obj.No. 468 changes from 0 to 1, after (Measured value is over Obj.No. 462).					
467	**Coolant temp.: Switching delay from 1 to 0**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 468 changes from 1 to 0, after (Measured value is under Obj.No. 462).					
468	**Coolant temp.: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) coolant temp threshold (The telegram value is defined by the parameter “Output is at (TV=threshold value) (SD=Switching distance)”).					
469	**Coolant temp.: Switching output block**	**Input**	**Bit**	**W,C1**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on coolant temp threshold.					

Table5.10 Communication object of “Dew point measured value”

5.11 Communication object of “Absolute humidity”

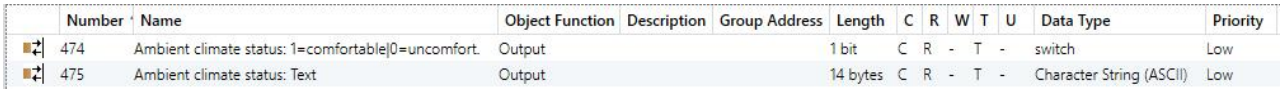
	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	471	Absolute humidity [g/kg]	Output			4 bytes	C	R	-	T	-	amplitude	Low
	472	Absolute humidity [g/m³]	Output			2 bytes	C	R	-	T	-	2-byte float value	Low

Fig.5.11 Communication object of “Absolute humidity”

NO.	Name	Function	Types	Property	DPT
471	**Absolute humidity [g/kg]**	**Output**	**4 Bytes**	**R,C,T**	**14.005 amplitude**
Absolute Air Humidity Value detected and sent to the bus [g/kg].					
472	**Absolute humidity [g/m³]**	**Output**	**4 Bytes**	**R,C,T**	**9.*2-byte float value**
Absolute Air Humidity Value detected and sent to the bus [g/m³].					

Table5.11 Communication object of “Absolute humidity”

5.12 Communication object of “Comfort field”



	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	474	Ambient climate status: 1=comfortable|0=uncomfort.	Output			1 bit	C	R	-	T	-	switch	Low
	475	Ambient climate status: Text	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low

Fig.5.12 Communication object of “Comfort field”

NO.	Name	Function	Types	Property	DPT
474	**Ambient climate status: 1 = comfortable | 0 = uncomfortable**	**Output**	**1 Bit**	**R-CT**	**1.001 switch**
The comfort field refers to a predefined range of conditions, specifically temperature and humidity.					
475	**Ambient climate status: Text**	**Output**	**14 Bytes**	**R-CT**	**16.000 Character String (ASCII)**
Text output for the two comfort fields.					

Table5.12 Communication object of “Comfort field”

5.13 Communication object of “Brightness”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
175	Brightness sensor measurement	Output			2 bytes	C	R	-	T	-	lux (Lux)	Low

Fig.5.13 Communication object of “Brightness”

No.	Name	Function	Types	Property	DPT
175	**Brightness sensor measurement**	**Output**	**R,C,T**	**2 Bytes**	**9.004 lux (Lux)**
Send the highest currently measured value of the five internal Bright. sensors on the bus.					

Table 5.13 Communication object of “Brightness”

5.14 Communication object of “Brightness threshold values”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
181	Brightness sensor TLV 1: Absolute value	Input / Output			2 bytes	C	R	W	T	-	lux (Lux)	Low
182	Brightness sensor TLV 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
183	Brightness sensor TLV 1: Delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
184	Brightness sensor TLV 1: Delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
185	Brightness sensor TLV 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
186	Brightness sensor TLV 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.14 Communication object of “Brightness threshold values”

NO.	Name	Function	Types	Property	DPT
181	**Bright. threshold value 1: Absolute value**	**Input/Output**	**R,W,C,T**	**2 Bytes**	**9.004 lux (Lux)**
Reference point of setting and/or reading the bright. threshold value 1.					
182	**Bright. threshold value 1: (1:+ | 0:-)**	**Input**	**W,C**	**1 Bit**	**1.007 step**
Used to increment=1 or decrement=0 the bright. threshold value 1.					
183	**Bright. threshold value 1: Delay from 0 to 1**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 185 changes from 0 to 1, after (Measured value is over Obj.No. 181).					
184	**Bright. threshold value 1: Delay from 1 to 0**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 185 changes from 1 to 0, after (Measured value is under Obj.No. 181).					
185	**Bright. threshold value 1: Switching output**	**Output**	**R,C,T**	**1 Bit**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) threshold 1(The telegram value is defined by the parameter “Output is at (TV=threshold value) (SD=Switching distance)”).					

186	**Bright. threshold value 1: Switching output block**	**Input**	**W,C**	**1 Bit**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on brightness threshold 1.					

Table5.14 Communication object of “Brightness threshold values”

5.15 Communication object of “Brightness, TV twilight sensor”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
293	Twilight brightness TLV 1: Absolute value	Input / Output			2 bytes	C	R	W	T	-	lux (Lux)	Low
294	Twilight brightness threshold value 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
295	Twilight brightness threshold 1: delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
296	Twilight brightness threshold 1: delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
297	Twilight brightness TLV 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
298	Twilight brightness TLV 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.15 Communication object of “Brightness, TV twilight sensor”

NO.	Name	Function	Types	Property	DPT
293	**Twilight brightness threshold value 1: Absolute value**	**Input/Output**	**R,W,C,T**	**2 Bytes**	**9.004 lux (Lux)**
Reference point of setting and/or reading Twilight threshold value 1.					
294	**Twilight brightness threshold 1: (1:+ | 0:-)**	**Input**	**W,C**	**1 Bit**	**1.007 step**
Used to increment=1 or decrement=0 the Twilight threshold value 1.					
295	**Twilight brightness threshold 1: delay from 0 to 1**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 297.					
296	**Twilight brightness threshold 1: delay from 1 to 0**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 297 changes from 1 to 0, after (Measured value is under Obj.No. 293).					
297	**Twilight brightness threshold value 1: Switching output**	**Output**	**R,C,T**	**1 Bit**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) threshold 1(The telegram value is defined by the parameter “Output is at (TV=threshold value) (SD=Switching distance)”).					
298	**Twilight brightness threshold**	**Input**	**W,C**	**1 Bit**	**1.001 switch**

	value 1: Switching output block				
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on twilight threshold 1.					

Table5.15 Communication object of “Brightness, TV twilight sensor”

5.16 Communication object of “Night”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
331	Night: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
332	Night: Switching delay to night	Input			2 bytes	C	-	W	-	-	time (s)	Low
333	Night: Switching delay on day	Input			2 bytes	C	-	W	-	-	time (s)	Low

Fig.5.16 Communication object of “Night”

No.	Name	Function	Types	Property	DPT
331	**Night: Switching output**	**Output**	**R,C,T**	**1 Bit**	**1.001 switch**
Used to detect Night when illumination is less than or equal a set value in Lux .					
332	**Night: Switching delay on night**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Delay time in sec for output Obj.No. 332 when brightness value is Less than or equal Obj.No. 331 .					
333	**Night: Switching delay on day**	**Input**	**W,C**	**2 Bytes**	**7.005 time(s)**
Delay time in sec for output Obj.No. 332 when brightness value is higher than Obj.No. 331.					

Table 5.16 Communication object of “Night”

5.17 Communication object of “Sun position”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
341	Sun position: Direction of the sun	Input			4 bytes	C	-	W	T	-	angle (degree)	Low
342	Sun position: Height of the sun	Input			4 bytes	C	-	W	T	-	angle (degree)	Low

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
343	Sun position: Direction of the sun	Input			2 bytes	C	-	W	T	-	2-byte float value	Low
344	Sun position: Height of the sun	Input			2 bytes	C	-	W	T	-	2-byte float value	Low

Fig.5.17 Communication object of “Sun position”

NO.	Name	Function	Types	Property	DPT
341	**Sun position: Azimuth**	**Output**	**R-CT**	**4 Bytes**	**14.007 angle (degree)**
Received Value of Sun Azimuth Angle in Degrees (4 bytes floating point).					
342	**Sun position: Elevation**	**Output**	**R-CT**	**4 Bytes**	**14.007 angle (degree)**
Received Value of Sun Elevation Angle in Degrees (4 bytes floating point).					
343	**Sun position: Azimuth**	**Output**	**R-CT**	**2 Bytes**	**9.*2-byte float value**
Received Value of Sun Azimuth Angle in Degrees (2 bytes floating point).					
344	**Sun position: Elevation**	**Output**	**R-CT**	**2 Bytes**	**9.*2-byte float value**
Received Value of Sun Elevation Angle in Degrees (2 bytes floating point).					

Table5.17 Communication object of “Sun position”

5.18 Communication object of “Wind measurement”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
351	Wind sensor: Malfunction	Output			1 bit	C	R	-	T	-	switch	Low
352	Wind sensor: Measurement [m/s]	Output			2 bytes	C	R	-	T	-	speed (m/s)	Low
353	Wind sensor: Measurement [Beaufort]	Output			1 byte	C	R	-	T	-	wind force scale (0..12)	Low
354	Wind sensor: Max. query measurement	Input			1 bit	C	-	W	-	-	1-bit, trigger	Low
355	Wind sensor: Maximum measurement [m/s]	Output			2 bytes	C	R	-	T	-	speed (m/s)	Low
356	Wind sensor: Maximum measurement [Beaufort]	Output			1 byte	C	R	-	T	-	wind force scale (0..12)	Low
357	Wind sensor: Max. reset measurement	Input			1 bit	C	-	W	-	-	trigger	Low

Fig.5.18 Communication object of “Wind measurement”

No.	Name	Function	Types	Property	DPT
351	**Wind sensor: Malfunction**	**Output**	**R,C,T**	**1 Bit**	**1.001 switch**
If enabled, it indicates if the wind sensor is experiencing an error (1 = malfunction, 0 = no malfunction)					
352	**Wind sensor: Measurement [m/s]**	**Output**	**R,C,T**	**2 Bytes**	**9.005 speed (m/s)**
Measured value of wind speed in m/s.					
353	**Wind sensor: Measurement [Beaufort]**	**Output**	**R,C,T**	**1 Byte**	**20.014 wind force scale (0...12)**
Wind speed data in (m/s) in which is converted into the Beaufort scale rating (From 0 --> 12).					
354	**Wind sensor: Measurement, max. query**	**Input**	**W,C**	**1 Bit**	**1.017 trigger**
Request the maximum wind value recorded. Writing a 1 to the communication object triggers the wind sensor to report ist maximum measured value to the KNX bus.					
355	**Wind sensor: Maximum measurement [m/s]**	**Output**	**R,C,T**	**2 Bytes**	**9.005 speed (m/s)**
Max wind speed measured in m/s.					
356	**Wind sensor: Maximum**	**Output**	**R,C,T**	**1 Byte**	**20.014 wind force scale**

	measurement [Beaufort]				**(0...12)**
Max wind speed measured in Beaufort.					
357	**Wind sensor: Measured value max. reset**	**Input**	**W,C**	**1 Bit**	**1.017 trigger**
Reset Max wind value recorded.					

Table5.18 Communication object of “Wind measure”

5.19 Communication object of “Wind threshold values”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
361	Wind threshold value 1: Absolute value	Input / Output			2 bytes	C	R	W	T	-	speed (m/s), wind speed (km/h)	Low
362	Wind threshold value 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
363	Wind threshold value 1: Delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
364	Wind threshold value 1: Delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
365	Wind threshold value 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
366	Wind threshold value 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.19 Communication object of “Wind threshold values”

NO.	Name	Function	Types	Property	DPT
361	**Wind threshold value 1: Absolute value**	**Input/Output**	**RWCT**	**2 Bytes**	**9.005 speed (m/s) 9.008 speed (km/h)**
Reference point of setting and/or reading the wind threshold value 1.					
362	**Wind threshold value 1: (1:+ | 0:-)**	**Input**	**WC**	**1 Bit**	**1.007 step**
Used to increment=1 or decrement=0 the wind threshold value 1.					
363	**Wind threshold value 1: Delay from 0 to 1**	**Input**	**WC**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 365 changes from 0 to 1, after (Measured value is over Obj.No. 361).					
364	**Wind threshold value 1: Delay from 1 to 0**	**Input**	**WC**	**2 Bytes**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 365 changes from 1 to 0, after (Measured value is under Obj.No. 361).					
365	**Wind threshold value 1: Switching output**	**Output**	**R-CT**	**1 Bit**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) wind threshold 1(The telegram value is defined by the parameter “Output is at (TV=threshold value) (SD=Switching distance)”).					

366	**Wind threshold value 1: Switching output block**	**Input**	**WC**	**1 Bit**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on wind threshold 1.					

Table5.19 Communication object of “Wind threshold values”

5.20 Communication object of “Wind direction”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1890	Wind direction: Measured value [cardinal point]	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low
1891	Wind direction measured value [°]	Output			1 byte	C	R	-	T	-	angle (degrees)	Low
1892	Wind direction North	Output			1 bit	C	R	-	T	-	boolean	Low
1893	Wind direction North-East	Output			1 bit	C	R	-	T	-	boolean	Low
1894	Wind direction East	Output			1 bit	C	R	-	T	-	boolean	Low
1895	Wind direction South-East	Output			1 bit	C	R	-	T	-	boolean	Low
1896	Wind direction South	Output			1 bit	C	R	-	T	-	boolean	Low
1897	Wind direction South-West	Output			1 bit	C	R	-	T	-	boolean	Low
1898	Wind direction West	Output			1 bit	C	R	-	T	-	boolean	Low
1899	Wind direction North-West	Output			1 bit	C	R	-	T	-	boolean	Low

Fig.5.20 Communication object of “Wind direction”

NO.	Name	Function	Types	Property	DPT
1890	**Wind direction: Measurement [compass direction]**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Wind direction sent as text (9 cases).					
1891	**Wind direction measurement [°]**	**Output**	**1 Byte**	**R,C,T**	**5.003 angle (degrees)**
Wind direction measured value sent on the bus in Degrees (1 byte object).					
1892	**Wind direction north**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "North", The Output is 0/1.(The telegram value is defined by the parameter “North(0°) if active, send:”)					
1893	**Wind direction North-East**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "North-East", The Output is 0/1.(The telegram value is defined by the parameter “North-East(45°) if active, send:”)					
1894	**Wind direction east**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "East", The Output is 0/1.(The telegram value is defined by the parameter “East(90°) if active, send:”)					
1895	**Wind direction South-East**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**

If the wind direction is "South-East", The Output is 0/1.(The telegram value is defined by the parameter “South East(135°) if active, send:”)					
1896	**Wind direction south**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "South", The Output is 0/1.(The telegram value is defined by the parameter “South(180°) if active, send:”)					
1897	**Wind direction South-West**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "South-West", The Output is 0/1.(The telegram value is defined by the parameter “South-West(225°) if active, send:”)					
1898	**Wind direction west**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "West", The Output is 0/1.(The telegram value is defined by the parameter “West(270°) if active, send:”)					
1899	**Wind direction North-West**	**Output**	**1 Bit**	**R,C,T**	**1.002 boolean**
If the wind direction is "North-West", The Output is 0/1.(The telegram value is defined by the parameter “North-West(315°) if active, send:”)					

Table5.20 Communication object of “Wind direction”

5.21 Communication object of “Wind direction ranges”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1904	Wind direction: Range 1 Switching output	Output			1 bit	C	R	-	T	-	switch	Low
1905	Wind direction range value 1: Delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
1906	Wind direction range value 1: Delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
1907	Wind direction range value 1 from: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
1908	Wind direction range value 1 up to: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
1909	Wind direction range value 1 from: Absolute value	Input / Output			4 bytes	C	R	W	T	-	angle (degree)	Low
1910	Wind direction range value 1 up to: Absolute value	Input / Output			4 bytes	C	R	W	T	-	angle (degree)	Low
1911	Wind direction range value 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.21 Communication object of “Wind direction ranges”

NO.	Name	Function	Types	Property	DPT
1904	**Wind direction: Range 1 Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Used to trigger actions if the measured value is in the set range (considering the time delays). Wind direction range ß.(The telegram value is defined by the parameter “Output is at(TV=threshold value)(SD= Switching distance)”)					
1905	**Wind direction range value 1: Delay from 0 to 1**	**Input**	**2 Bytes**	**W,C**	**7.005 time (s)**
Time period that should be exceeded before Obj.No. 1904 changes from 0 to 1.					
1906	**Wind direction range value 1: Delay from 1 to 0**	**Input**	**2 Bytes**	**W,C**	**7.005 time (s)**
Time period that should be exceeded before Obj.No. 1904 changes from 1 to 0.					
1907	**Wind direction range value 1 from: (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Wind direction range ß "From" value 1, 1bit value.					
1908	**Wind direction range value 1 up to: (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Wind direction range "Up to" value 1, 1bit value.					
1909	**Wind direction range value**	**Input / Output**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**

	1 from: Absolute value				
Reference point of setting and/or reading the Wind direction range ß "From" value 1 (degrees °).					
1910	**Wind direction range value 1 up to: Absolute value**	**Input / Output**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**
Reference point of setting and/or reading the Wind direction range ß "Up to" value 1 (degrees °).					
1911	**Wind direction range value 1: Switching output block**	**Input**		**W,C**	**1.001 switch**
Used to receive a binary state block = 1 or allow = 0 the switching of an output (Obj.No. 1904) based on Wind direction range ß.					

Table5.21 Communication object of “Wind direction ranges”

5.22 Communication object of “Pressure measured value”

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	481	Air pressure sensor: Malfunction	Output			1 bit	C	R	-	T	-	switch	Low
	482	Air pressure sensor: Normal measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	483	Air pressure sensor: Barometric measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	484	Air pressure sensor: Min./Max. measurement query	Input			1 bit	C	-	W	-	-	trigger	Low
	485	Air pressure sensor: Min. normal measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	486	Air pressure sensor: Min. bar. measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	487	Air pressure sensor: Max. normal measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	488	Air pressure sensor: Max. bar. measurement [Pa]	Output			4 bytes	C	R	-	T	-	pressure (Pa)	Low
	489	Air pressure sensor: Min./Max. measurement reset	Input			1 bit	C	-	W	-	-	trigger	Low
	490	Air pressure sensor: Pressure range text	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low

Fig.5.22 Communication object of “Pressure measured value”

NO.	Name	Function	Types	Property	DPT
481	**Air pressure sensor: Malfunction**	**Output**	**1 Bit**	**C,R,T**	**1001 switch**
If enabled, it indicates if the Air pressure sensor is experiencing a malfunction(1 = malfunction, 0 = no malfunction).					
482	**Air pressure sensor: Normal measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**
The air pressure is the pressure measured directly by the sensor (without compensation).					
483	**Air pressure sensor: Barometric measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**
Sends the Barometric pressure compensated by altitude on the bus.					
484	**Air pressure sensor: Min./max. measurement query**	**Input**	**1 Bit**	**C,W**	**1.017 trigger**
Request the maximum and minimum Air pressure value recorded. Writing a 1 to the communication object triggers the Air pressure sensor to report its minimum and maximum measured values to the KNX bus.					
485	**Air pressure sensor: Min. normal measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**

Minimum Normal Measured Value after Reset the bus send it back after requesting a query.					
486	**Air pressure sensor: Min. barometric measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**
Minimum Barometric Measured Value after Reset the bus send it back after requesting a query.					
487	**Air pressure sensor: Max. normal measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**
Maximum Normal Measured Value after Reset the bus send it back after requesting a query.					
488	**Air pressure sensor: Max. barometric measurement [Pa]**	**Output**	**4 Bytes**	**C,R,T**	**14.058 pressure (Pa)**
Maximum Barometric Value after Reset the bus send it back after requesting a query.					
489	**Air pressure sensor:Min./max. reading reset**	**Input**	**1 Bit**	**C,W**	**1.017 trigger**
Min./Max values reset after requesting them using the Measurement query (Obj.No. 484).					
490	**Air pressure sensor: Pressure range text**	**Output**	**14 Bytes**	**C,R,T**	**16.000 character string (ASCII)**
Text output regarding Five Air pressure conditions.					

Table5.22 Communication object of “Pressure measured value”

5.23 Communication object of “Pressure threshold value”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
491	Air pressure threshold value 1: Absolute value	Input / Output			4 bytes	C	R	W	T	-	pressure (Pa)	Low
492	Air pressure threshold value 1: (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
493	Air pressure threshold value 1: Delay from 0 to 1	Input			2 bytes	C	-	W	-	-	time (s)	Low
494	Air pressure threshold value 1: Delay from 1 to 0	Input			2 bytes	C	-	W	-	-	time (s)	Low
495	Air pressure threshold value 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
496	Air pressure TLV 1: Switching output block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.23 Communication object of “Pressure threshold value”

NO.	Name	Function	Types	Property	DPT
491	**Air pressure threshold value 1: Absolute value**	**Input /Output**	**4 Bytes**	**R,W,C,T**	**14.058 pressure (Pa) Pressure**
Reference point of setting and/or reading the Air pressure threshold value 1.					
492	**Air pressure threshold value 1: (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Air pressure threshold value 1.					
493	**Air pressure threshold value 1: Delay from 0 to 1**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 495 changes from 0 to 1, after (Measured value is over Obj.No. 491).					
494	**Air pressure threshold value 1: Delay from 1 to 0**	**Input**	**2 Bytes**	**W,C**	**7.005 time(s)**
Indicating the time period in seconds that should be exceeded before Obj.No. 495 changes from 1 to 0 after (Measured value is under Obj.No. 491).					
495	**Air pressure threshold value 1: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Used to trigger actions if the measured value is above or under (considering the time delays) Air Pressure threshold 1(The telegram value is defined by the parameter “Output is at(TV=threshold value) (SD=Switching distance)”).					

496	**Air pressure threshold value 1: Switching output block**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the switching output based on Air Pressure threshold 1.					

Table5.23 Communication object of “Pressure threshold value”

5.24 Communication object of “Summer compensation”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
595	Summer compensation: Outdoor temperature	Input			2 bytes	C	-	W	T	-	temperature (°C)	Low
596	Summer compensation: Target value	Output			2 bytes	C	R	-	T	-	temperature (°C)	Low
597	Summer compensation: Block (1 = Blocking)	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.24 Communication object of “Summer compensation”

NO.	Name	Function	Types	Property	DPT
595	**Summer compensation: Outdoor temperature**	**Input**	**2 Bytes**	**C,W,T**	**9.001 temperature (°C)**
Send the Outdoor temp to this Group adress.					
596	**Summer compensation: Setpoint**	**Output**	**2 Bytes**	**R-CT**	**9.001 temperature (°C)**
Target indoor temperature which is automatically adjusted based on outdoor temperature Value.					
597	**Summer compensation: Block (1 = Block)**	**Input**	**1 Bit**	**WC**	**1.001 switch**
Used to receive a binary state to (block = 1 or allow = 0 "default values") the setpoint Obj.No. 597.					

Table5.24 Communication object of “Summer compensation”

5.25 Communication object of “Facades”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
609	Façade Wind measurement 1 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
610	Façade Wind measurement 2 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
611	Façade Wind measurement 3 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
612	Façade Wind measurement 4 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
613	Façade Wind measurement 5 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
614	Façade Wind measurement 6 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
615	Façade Wind measurement 7 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
616	Façade Wind measurement 8 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
617	Façade Wind measured value 9 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
618	Façade Wind measured value 10 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
619	Façade Wind measured value 11 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
620	Façade Wind measured value 12 in m/s	Input			2 bytes	C	-	W	T	-	speed (m/s)	Low
621	Façade Wind automation blocking duration in min.	Input/Output			2 bytes	C	R	W	T	-	time (min)	Low
622	Façade Wind autom. block. dur. in min. (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
623	Façade Rain automation Delay in minutes	Input/Output			2 bytes	C	R	W	T	-	time (min)	Low
624	Façade Rain automation Delay in mins (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
625	Façade Twilight Threshold value in lux	Input/Output			2 bytes	C	R	W	T	-	lux (Lux)	Low
626	Façade Twilight threshold value in Lux (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
627	Façade Outdoor temperature (°C)	Input			2 bytes	C	-	W	T	-	temperature (°C)	Low
628	Façade Heat protection threshold value in °C	Input/Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
629	Façade Frost alarm TLV in °C (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
630	Façade Frost alarm start temperature in °C	Input/Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
631	Façade Frost alarm start temp. in °C (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
632	Façade Frost alarm start delay in hours	Input/Output			2 bytes	C	R	W	T	-	time (h)	Low
633	Façade Frost alarm start temp. in hrs (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
634	Façade Frost alarm stop temperature in °C	Input/Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
635	Façade Frost alarm stop temp. in °C (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
636	Façade Frost alarm stop delay in hours	Input/Output			2 bytes	C	R	W	T	-	time (h)	Low
637	Façade Frost alarm stop delay in hours (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
638	Façade Pyranometer measured value 1 in W/m²	Input			2 bytes	C	-	W	T	-	power density (W/m²)	Low
639	Façade Pyranometer measured value 1 in W/m²	Input			4 bytes	C	-	W	T	-	amplitude	Low
640	Façade Pyranometer measured value 2 in W/m²	Input			2 bytes	C	-	W	T	-	power density (W/m²)	Low
641	Façade Pyranometer measured value 2 in W/m²	Input			4 bytes	C	-	W	T	-	amplitude	Low
642	Façade Pyranometer measured value 3 in W/m²	Input			2 bytes	C	-	W	T	-	power density (W/m²)	Low
643	Façade Pyranometer measured value 3 in W/m²	Input			4 bytes	C	-	W	T	-	amplitude	Low
644	Façade Pyranometer measured value 4 in W/m²	Input			2 bytes	C	-	W	T	-	power density (W/m²)	Low
645	Façade Pyranometer measured value 4 in W/m²	Input			4 bytes	C	-	W	T	-	amplitude	Low
648	Façade X channel status output (1: activate)	Input			1 bit	C	R	W	-	-	switch	Low
649	Façade X channel name	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low
650	Façade X channel (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	switch	Low
651	Façade X channel state text	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low
652	Façade X channel status bit text	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low
653	Façade X channel status bit state	Output			1 bit	C	R	-	T	-	switch	Low
654	Façade X channel delay	Output			2 bytes	C	R	-	T	-	time (s)	Low
655	Façade X channel status bit selection (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
656	Façade Wind simulation in m/s	Input			2 bytes	C	R	W	-	-	speed (m/s)	Low
657	Façade Wind ext. blocking simulation (1: active)	Input			1 bit	C	R	W	-	-	switch	Low
658	Façade Wind alarm simulation (1: active)	Input			1 bit	C	R	W	-	-	switch	Low
659	Façade Rain simulation (1: active)	Input			1 bit	C	R	W	-	-	switch	Low
660	Façade Outdoor temperature in °C simulation	Input			2 bytes	C	R	W	-	-	temperature (°C)	Low
661	Façade Indoor temperature in °C simulation	Input			2 bytes	C	R	W	-	-	temperature (°C)	Low
662	Façade Brightness in Lux simulation	Input			2 bytes	C	R	W	-	-	lux (Lux)	Low
663	Façade Sun intensity simulation in watts/m²	Input			2 bytes	C	R	W	-	-	power density (W/m²)	Low
664	Façade Date simulation	Input			3 bytes	C	R	W	-	-	date	Low
665	Façade Time simulation	Input			3 bytes	C	R	W	-	-	time of day	Low
666	Façade Direction of the sun simulation in °, date & ti...	Output			4 bytes	C	R	-	T	-	angle (degree)	Low
667	Façade Height of the sun simulation in °, date & time	Output			4 bytes	C	R	-	T	-	angle (degree)	Low
668	Façade Direction of the sun simulation in °	Input			4 bytes	C	R	W	-	-	angle (degree)	Low
669	Façade Height of the sun simulation in °	Input			4 bytes	C	R	W	-	-	angle (degree)	Low
670	Façade Reset simulation (1: reset)	Input			1 bit	C	-	W	-	-	switch	Low
671	Façade Sun angle mode simulation (1: On | 0: Off)	Input			1 bit	C	R	W	-	-	switch	Low
672	Façade 1 simulation (1: On | 0: Off)	Input			1 bit	C	R	W	-	-	switch	Low
673	Façade 1 block (1 = Block | 0 = Release)	Input			1 bit	C	R	W	-	-	switch	Low
674	Façade 1 safety (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
675	Façade 1 wind extension block (1: On | 0: Off)	Input			1 bit	C	-	W	-	-	switch	Low
676	Façade 1 wind extension block TLV in m/s	Input			2 bytes	C	R	W	T	-	speed (m/s)	Low
677	Façade 1 wind extension block TLV (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
678	Façade 1 wind ext. block status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
679	Façade 1 wind alarm (1: On | 0: Off)	Input			1 bit	C	-	W	-	-	switch	Low
680	Façade 1 wind alarm threshold value in m/s	Input			2 bytes	C	R	W	T	-	speed (m/s)	Low
681	Façade 1 wind alarm threshold value (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
682	Façade 1 wind alarm status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
683	Façade 1 frost alarm status (1: On | 0: Off)	Output			1 bit	C	R	W	T	-	switch	Low
684	Façade 1 rain automation (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
685	Façade 1 rain alarm status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
686	Façade 1 timed opening (1: act. | 0: deact.)	Input			1 bit	C	R	W	-	-	switch	Low
687	Façade 1 timed opening status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
688	Façade 1 outdoor temp. Blocking (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
689	Façade 1 outdoor temperature Block in °C	Input/Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
690	Façade 1 outdoor temp. Block in °C (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
691	Façade 1 ext. temp. Block status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
692	Façade 1 timed closure (1: activate)	Input			1 bit	C	R	W	-	-	switch	Low
693	Façade 1 timed closure status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
694	Façade 1 night closure (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
695	Façade 1 night closure status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
696	Façade 1 heating protection (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
697	Façade 1 heating prot. status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
698	Façade 1 pyranometer (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
699	Façade 1 pyranometer in W/m²	Input/Output			2 bytes	C	R	W	T	-	power density (W/m²)	Low
700	Façade 1 pyranometer in W/m² (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
701	Façade 1 pyranometer status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
702	Façade 1 indoor temperature in °C	Input			2 bytes	C	-	W	T	-	temperature (°C)	Low
703	Façade 1 indoor temperature block (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low
704	Façade 1 indoor temperature Block in °C	Input/Output			2 bytes	C	R	W	T	-	temperature (°C)	Low
705	Façade 1 indoor temp. Block in °C (1:+ | 0:-)	Input			1 bit	C	-	W	-	-	step	Low
706	Façade 1 indoor temp. blk status (1: On | 0: Off)	Output			1 bit	C	R	-	T	-	switch	Low
707	Façade 1 indoor temperature via bit object (1: block)	Input			1 bit	C	R	W	-	-	switch	Low
708	Façade 1 sun automation (1: activated)	Input			1 bit	C	R	W	-	-	switch	Low

709	Façade 1 sun automation Direction of the sun from (i...	Input	4 bytes	C	R	W	T	-	angle (degree)	Low
710	Façade 1 sun automation Direction of the sun from (1...	Input	1 bit	C	-	W	-	-	step	Low
711	Façade 1 sun automation Direction of the sun up to (...	Input	4 bytes	C	R	W	T	-	angle (degree)	Low
712	Façade 1 sun automation Direction of the sun up to (...	Input	1 bit	C	-	W	-	-	step	Low
713	Façade 1 sun automation Height of the sun from (in °)	Input	4 bytes	C	R	W	T	-	angle (degree)	Low
714	Façade 1 sun automation Height of the sun from (1:+...	Input	1 bit	C	-	W	-	-	step	Low
715	Façade 1 sun automation Height of the sun up to (in °)	Input	4 bytes	C	R	W	T	-	angle (degree)	Low
716	Façade 1 sun autom. Height of the sun up to (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low
717	Façade 1 sun autom. DirHeight status (1: On | 0: Off)	Output	1 bit	C	R	-	T	-	switch	Low
718	Façade 1 sun autom. Brightness measurement in Lux	Input	2 bytes	C	-	W	T	-	lux (Lux)	Low
719	Façade 1 sun automation Brightness TLV in Lux	Input	2 bytes	C	R	W	T	-	lux (Lux)	Low
720	Façade 1 sun automation Brightness TLV (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low
721	Façade 1 sun autom. BRT Short status (1: On)	Output	1 bit	C	R	-	T	-	switch	Low
722	Façade 1 sun autom. Brightness Long status (1: On)	Output	1 bit	C	R	-	T	-	switch	Low
723	Façade 1 extension delay in min.	Input/Output	2 bytes	C	R	W	T	-	time (min)	Low
724	Façade 1 extension delay in min. (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low
725	Façade 1 short delay in seconds	Input/Output	2 bytes	C	R	W	T	-	time (s)	Low
726	Façade 1 short delay in seconds (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low
727	Façade 1 retraction delay in min.	Input/Output	2 bytes	C	R	W	T	-	time (min)	Low
728	Façade 1 retraction delay in min. (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low
729	Façade 1 movement position	Output	1 byte	C	R	-	T	-	percentage (0..100%)	Low
730	Façade 1 slat position	Output	1 byte	C	R	-	T	-	percentage (0..100%)	Low
731	Façade 1 status output channel (1: activate)	Input	1 bit	C	R	W	-	-	switch	Low
732	Façade 1 state text	Output	14 bytes	C	R	-	T	-	Character String (ASCII)	Low
733	Façade 1 channel status bit text	Output	14 bytes	C	R	-	T	-	Character String (ASCII)	Low
734	Façade 1 channel status bit state	Output	1 bit	C	R	-	T	-	switch	Low
735	Façade 1 channel delay	Output	2 bytes	C	R	-	T	-	time (s)	Low
736	Façade 1 channel status bit selection (1:+ | 0:-)	Input	1 bit	C	-	W	-	-	step	Low

Fig.5.25 Communication object of “Facades”

NO.	Name	Function	Types	Property	DPT
609/.../620	**Facade Wind measurement 1/../12 in m/s**	**Input**	**2 Bytes**	**C,W,T**	**9.005 speed (m/s)**
External wind measurement input 1/.../12 for façade automation.					
621	**Facade Wind automation blocking duration in min.**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**7.006 time (min)**
Set a time for blocking the automation after wind alarm is triggered.					
622	**Facade Wind automation blocking duration in min. (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the wind block duration value in minutes.					
623	**Facade Rain auto. Delay in minutes**	**Input/Output**	**2 Bytes**	**R,W,C,T**	**7.006 time (min)**

wait this time after rain alarm is triggered before activating the façade automation.(To ensure a rainy weather is confirmed).					
624	**Facade Rain auto. Delay in minutes (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the rain detection delay duration value in minutes.					
625	**Facade Twilight threshold value in kLux**	**Input/Output**	**2 Bytes**	**R,W,C, T**	**9.004 lux (Lux)**
Set value of twilight brightness, if (Brightness < Threshold) = night / (Brightness > Threshold) = day					
626	**Facade Twilight threshold value in Lux (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the Twilight value in Lux.					
627	**Facade Outside temperature (°C)**	**Input**	**2 Bytes**	**C,W,T**	**9.001 temperature (°C)**
Input the outdoor sensor for the façade automation.					
628	**Facade Heat protection threshold value in °C**	**Input/Output**	**2 Bytes**	**R,W,C, T**	**9.001 temperature (°C)**
Temperature heat protection value set to which when exceeded by actual temperature the protection mode is activated.					
629	**Facade Frost alarm threshold value in °C (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the Heat protection threshold value in °C.					
630	**Facade Frost alarm start temperature in °C**	**Input/Output**	**2 Bytes**	**R,W,C, T**	**9.001 temperature (°C)**
Frost can be detected below this start TVL (Temperature Value limit).					
631	**Facade Frost alarm start**	**Input**	**1 Bit**	**W,C**	**1.007 step**

	temperature in °C (1:+ | 0:-)				
Increments or decrements the Frost start temperature in °C.					
632	**Facade Frost alarm start delay in hours**	**Input/Output**	**2 Bytes**	**R,W,C, T**	**7.007 time (h)**
Delay time before the frost alarm is triggered ensures that the frost condition is confirmed, taking into account not only a temperature drop but also precipitation.					
633	**Facade Frost alarm start temperature in hours (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the Frost alarm start delay time in hours.					
634	**Facade Frost alarm stop temperature in °C**	**Input/Output**	**2 Bytes**	**R,W,C, T**	**9.001 temperature (°C)**
Frost is not detected anymore above this stop temperatue.					
635	**Facade Frost alarm stop temperature in °C (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the Frost stop temperature in °C.					
636	**Facade Frost alarm stop delay in hours**	**Input/ Output**	**2 Bytes**	**R,W,C, T**	**7.007 time (h)**
Delay time before the frost alarm is deactivated ensures that the system confirms the frost condition has truly ended, accounting for any potential temperature fluctuations or precipitation change, rather than stopping the alarm immediately after a slight temperature rise.					
637	**Facade Frost alarm stop delay in hours (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Increments or decrements the Frost alarm stop delay time in hours.					
638/.../645	**Facade Pyranometer measured value 1/.../4 in W/m²**	**Input**	**2 Bytes 4 Bytes**	**C,W,T**	**9.022 power density (W/m2) 14.005 amplitude**

External Pyranometer measurement input 1/.../4 for façade automation.					
648	**Facade X channel status output (1: activate)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Output information for all façades can be activated when set to 1.					
649	**Facade X channel name**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Output of the façade name (when changing façades). Name of the parameter can be adapted.					
650	**Facade X channel (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Change to the next/previous façade between façades 1 to 12. 1 = next, 0 = previous. This selection influences the façade displayed in associated objects. E. g. the name of the selected façade is output in object 649 and the status text in object 651.					
651	**Facade X channel state text**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Text of the condition of the selected façade. Saftey, Wind extention block, …).					
652	**Facade X channel status bit text**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Text output about the reason behind the current condition.(Wind alarm, Rain alarm, ...).					
653	**Facade X channel status bit state**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the Status bit state (1 = True or not = 0)					
654	**Facade X channel delay**	**Output**	**2 Bytes**	**R,C,T**	**7.005 time(s)**
Displaying the delay time for the selected status-bit. Some automation functions have delay times that must first be run through before the status-bit is (re-)set.					
655	**Facade X channel status bit**	**Input**	**1 Bit**	**W,C**	**1.007 step**

	selection (1:+ | 0:-)				
Selects the states of the automatic functions (channel status bit information) for the selected façade, that are then output in objects 652 and 653. 1 = next status info, 0 = previous status info. The text for the selected information is output in object 652 and the condition (true or false) is output in object 653.					
656	**Facade Wind simulation in m/s**	**Input**	**2 Bytes**	**R,W,C**	**9.005 speed (m/s)**
Simulation value of the Wind speed (m/s), used for façade different weather condtions tests.					
657	**Facade Wind extension blocking simulation (1: active)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
If the wind extension block is active, the façade couldn't extend anymore.(Remain in its position).					
658	**Facade Wind alarm simulation (1: active)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Simulation value of the Wind alarm. Ex: When = 1, move the face to the determined safe position.(if wind fuction is activated).					
659	**Facade Rain simulation (1: active)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Simulation value of the Rain alarm. Ex: When = 1, move the face to the determined safe position.(if rain fuction is activated).					
660	**Facade External temperature in °C simulation**	**Input**	**2 Bytes**	**R,W,C**	**9.001 temperature (°C)**
Simulation value of the External Temperature in (°C) used for façade different weather condtions tests.					
661	**Facade Internal temperature in °C simulation**	**Input**	**2 Bytes**	**R,W,C**	**9.001 temperature (°C)**
Simulation value of the Internal Temperature in (°C) used for façade different weather condtions tests.					

662	**Facade Brightness in Lux simulation**	**Input**	**2 Bytes**	**R,W,C**	**9.004 lux (Lux)**
Simulation value of the Brightness (Lux), used for façade different weather condtions tests.					
663	**Facade Sun intensity simulation in watts/m²**	**Input**	**2 Bytes**	**R,W,C**	**9.022 power density (W/m2)**
Simulation value of the Brightness (watts/m2)"intensity of radiant energy", The Output is 1. used for façade different weather condtions tests.					
664	**Facade Date simulation**	**Input**	**3 Bytes**	**R,W,C**	**11.001 date**
Date Value used for simulation. (Will affect the Sun location/direction/...).					
665	**Facade Time simulation**	**Input**	**3 Bytes**	**R,W,C**	**10.001 time of day Day**
Time Value used for simulation. (Will affect the Sun location/direction/...).					
666	**Facade Sun direction simulation in °, with date & time**	**Output**	**4 Bytes**	**R,C,T**	**14.007 angle (degree)**
Sun direction based on simulation Date and Time.					
667	**Facade Sun height simulation in °, with date & time**	**Output**	**4 Bytes**	**R,C,T**	**14.007 angle (degree)**
Sun Hight based on simulation Date and Time.					
668	**Facade Sun direction simulation in °**	**Input**	**4 Bytes**	**R,W,C**	**14.007 angle (degree)**
Sun direction in ° used for façade different weather condtions tests.					
669	**Facade Sun height simulation in °**	**Input**	**4 Bytes**	**R,W,C**	**14.007 angle (degree)**
Sun hight in ° used for façade different weather condtions tests.					
670	**Facade Reset simulation (1: reset)**	**Input**	**1 Bit**	**W,C**	**1.001 switch**

Writing a 1 will reset all simulation values.					
671	**Facade Sun angle mode simulation (1: On | 0: Off)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
If activated = 1, Sun angle is recieved via Obj. Nr. 668 & 669.					
672	**Facade 1 simulation (1: On | 0: Off)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Set this value of the (1 = activate / 0 = deactivate) simulation for façade 1.					
673	**Facade1 block**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
If activated = 1 the façade 1 can't be controlled. (Default)					
674	**Facade 1 safety (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the saftey function that ensure the protection and proper functioning of the façade 1 in different weather conditions (is it depending Wind, Rain, Frost). (1 = on, 0 = off)					
675	**Facade 1 wind extension block (1: On | 0: Off)**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Is a safety feature used to protect the façade 1 from potential damage (prevent further extention of the façade) caused by high winds. (Remain in same position). (1 = on, 0 = off)					
676	**Facade 1 wind extension block threshold value in m/s**	**Input**	**2 Bytes**	**R,W,C, T**	**9.005 speed (m/s)**
Reference point of setting and/or reading the Fac.1 Wind threshold value.					
677	**Facade 1 wind extension block threshold value (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Fac.1 Wind threshold value.					
678	**Facade 1 wind extension block status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the wind safety feature used with façade 1. (1 = on, 0 = off)					

679	**Facade 1 wind alarm (1: On | 0: Off)**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Alarm triggered after the wind speed exceeds the threshold value 1 and can initiate an action. (1 = on, 0 = off)					
680	**Facade 1 wind alarm threshold value in m/s**	**Input**	**2 Bytes**	**R,W,C, T**	**9.005 speed (m/s)**
Reference point of setting and/or reading the Façade 1 Wind alarm threshold value.					
681	**Facade 1 wind alarm threshold value (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 Façade 1 Wind alarm threshold value.					
682	**Facade 1 wind alarm status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the wind alarm for façade 1 (1 = alarm / wind value exceeded threshold value 1, 0 = no alarm). Transmission behaviour can be set within the parameters.Can also trigger an action. Will be set to 1 for safety reasons, when no value sent has been sent for 48 hours					
683	**Facade 1 frost alarm status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,W,C,T**	**1.001 switch**
Status of the frost alarm for façade 1 (1 = alarm / wind value exceeded threshold value 1, 0 = no alarm). Transmission behaviour can be set within the parameters.Can also trigger an action. Will be set to 1 for safety reasons, when no value sent has been sent for 48 hours					
684	**Facade1 release/block rain automatic**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Façade 1 rain automation function activation = 1 or Block = 0 when rain condition is true. (Default).					
685	**Facade 1 rain alarm status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the rain alarm (1 = alarm / precipitation detected, 0 = no alarm).					

686	**Facade1 release/block timed opening**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Write (Active = 1 or deactivated = 0) façade 1 timed opening function.					
687	**Facade 1 timed opening status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of façade 1 timed opening function.(1= Timed Opening function is active). (1 = on, 0 = off)					
688	**Facade1 outside temp. Release/block block**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Façade 1 Blocking function based on when outdoor temp is below the threshold value. (Active = 1 or deactivated = 0) .					
689	**Facade1 outside temp. Block in °C**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**9.001 temperature (°C)**
It is a Reference Point of façade 1 used for setting or reading the Temperature block value in °C.					
690	**Facade1 outside temp. Block in °C (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the external Temperature block threshold value for façade 1.					
691	**Facade1 outside temp. Block status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the Façade 1 external Temperature block function. (Active = 1 or inactive = 0).					
692	**Facade1 release/block timed closure**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Write (activated = 1 or deactivated = 0) façade 1 timed closure function. Default.					
693	**Facade 1 timed closure status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of façade 1 timed closure function.(1= Timed Closure function is active). (1 = on, 0 = off)					

694	**Facade1 release/block night closure**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Write (activated = 1 or deactivated = 0) façade 1 night closure function. Default.					
695	**Facade 1 night closure status (1: On | 0: Off)**		**1 Bit**	**R,C,T**	**1.001 switch**
Status of façade 1 timed closure function.(1= Night Closure function is active, 0=Night Closure function is deactivate).					
696	**Facade1 release/block heat protection**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Write (activated = 1 or deactivated = 0) façade 1 Heat Protection function. Default.					
697	**Facade 1 heating protection status (1: On | 0: Off)**		**1 Bit**	**R,C,T**	**1.001 switch**
Status of façade 1 Heat Protection function.(1= Heat Protection function is active,0= Heat Protection function is deactivate).					
698	**Facade1 release/block pyranometer**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Pyranometer sensor input for façade 1 is (1 = activated or 0 = deactivated). Default.					
699	**Facade 1 pyranometer in W/m²**	**Input/ Output**	**2 Bytes**	**R,W,C, T**	**9.022 power density (W/m2)**
Reference value used for setting or reading the Façade 1 Pyranometer (Light intensity) threshold value.					
700	**Facade 1 pyranometer in W/m² (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Façade 1 Pyranometer (Light intensity) threshold value.					
701	**Facade 1 pyranometer status (1:**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**

	On | 0: Off)				
Status of the Façade 1 Pyranometer (Light intensity). (1: Light intensity value exceeded threshold).					
702	**Facade 1 internal temperature in °C**	**Input**	**2 Bytes**	**C,W,T**	**9.001 temperature (°C)**
Indoor input temperature value used for setting Façade 1 automation.					
703	**Facade1 release/block inside temp. block**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Temperature sensor input for façade 1 is (1 = activated or 0 = deactivated). Default.					
704	**Facade1 inside temp. Block in °C**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**9.001 temperature (°C)**
Threshold value used to block the façade 1 according to the internal Temperature in °C.					
705	**Facade1 inside temp. Block in °C (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Fac.1 internal Temperature block threshold value.					
706	**Facade1 inside temp. Block status (1: On | 0: Off)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the Façade internal Temperature block. (1 = Blocking Function is active, 0=Blocking Function is deactivate).					
707	**Facade 1 internal temperature block release/block via bit object**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Send 1 to this obj to activate Façade 1 internal temp blocking function.					
708	**Facade1 release/block sun auto.**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Send 1 to this obj to activate Façade 1 automation based on Sun (1 = active/ 0 = inactive). Default.					
709	**Facade1 Sun auto. Azimuth from**	**Input**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**

	(in °)				
Used to set the Sun starting Azimuth angle in (°).					
710	**Facade1 Sun auto. Azimuth from (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 Fac.1 Sun starting Azimuth angle value.					
711	**Facade1 Sun auto. Azimuth up to (in °)**	**Input**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**
Used to set Fac.1 Sun Ending Azimuth angle in (°).					
712	**Facade1 Sun auto. Azimuth up to (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 Fac.1 Sun ending Azimuth angle value.					
713	**Facade1 Sun auto. Elevation from (in °)**	**Input**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**
Used to set Fac.1 Sun starting Elevation angle in (°).					
714	**Facade1 Sun auto. Elevation from (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 Fac.1 Sun starting Elevation angle value.					
715	**Facade1 Sun auto. Elevation up to (in °)**	**Input**	**4 Bytes**	**R,W,C,T**	**14.007 angle (degree)**
Used to set Fac.1 Sun Ending Elevation angle in (°).					
716	**Facade1 Sun auto. Elevation up to (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 Fac.1 Sun ending Elevation angle value.					
717	**Facade1 Sun auto. AziEle status**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**

	(1: On | 0: Off)				
If the Sun is within the set angle range according to façade 1 automation then the value is 1.					
718	**Facade1 Sun auto. Brightness measurement in lux**	**Input**	**2 Bytes**	**C,W,T**	**9.004 lux (Lux)**
Brightness measured for Fac.1 in Lux.					
719	**Facade1 Sun auto. Brightness threshold value in lux**	**Input**	**2 Bytes**	**R,W,C,T**	**9.004 lux (Lux)**
Reference point of setting and/or reading the Sun Auto brightness Fac.1 threshold value.					
720	**Facade1 Sun auto. Brightness threshold (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Sun Auto brightness Fac.1 threshold value.					
721	**Facade1 Sun auto. Bright. Short status (1: On)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status is high when Brightness is above the Sun auto. Threshold, longer than short delay setting value.					
722	**Facade1 Sun auto. Bright. Long status (1: On)**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status is high when Brightness is above the Sun auto. Threshold, longer than Long delay setting value.					
723	**Facade 1 extension delay in min.**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**7.006 time (min)**
Value used for setting extention time in Minutes in which when brightness value is over thershold for more then this time it activates the façade 1 sun protection.					
724	**Facade 1 extension delay in min. (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**

Used to increment=1 or decrement=0 the Fac.1 extension delay value.					
725	**Facade 1 short delay in seconds**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**7.005 time(s)**
Reference point of setting extention time in Seconds in which when brightness value is over thershold for more then this time it activated the façade 1 sun protection.					
726	**Facade 1 short delay in seconds (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Fac.1 extension delay value.					
727	**Facade 1 retraction delay in min.**	**Input/ Output**	**2 Bytes**	**R,W,C,T**	**7.006 time (min)**
Value used for setting retraction time in Seconds in which when brightness value is below thershold for more then this time it deactivated the façade 1 sun protection.					
728	**Facade 1 retraction delay in min. (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Used to increment=1 or decrement=0 the Fac.1 retraction delay value.					
729	**Facade 1 movement position**	**Output**	**1 Bit**	**R,C,T**	**5.001 percentage (0...100%)**
Send the Movment position on the bus to control the actuators of the façade 1.					
730	**Facade1 blind position**	**Output**	**1 Bit**	**R,C,T**	**5.001 percentage (0...100%)**
Send the Slats position on the bus to control the actuators of the façade 1.					
731	**Facade 1 channel status output (1: On | 0: Off)**	**Input**	**1 Bit**	**R,W,C**	**1.001 switch**
Indicates if Fac.1 channel is activated or not.					
732	**Facade 1 channel state text**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**

Text of the condition of façade 1 Saftey, Wind extention block, …).					
733	**Facade 1 channel status bit text**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Text output about the reason behind the current condition.(Wind alarm, Rain alarm, ...).					
734	**Facade 1 channel status bit state**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Status of the Status bit state (1 = True or not = 0).					
735	**Facade 1 channel delay**	**Output**	**2 Bytes**	**R,C,T**	**7.005 time(s)**
Displaying the delay time for the selected status-bit. Some automation functions have delay times that must first be run through before the status-bit is (re-)set.					
736	**Facade 1 channel status bit selection (1:+ | 0:-)**	**Input**	**1 Bit**	**W,C**	**1.007 step**
Selects the states of the automatic functions (channel status bit information) for façade 1, that are then output in objects 732 and 733. 1 = next status info, 0 = previous status info. The text for the selected information is output in object 732 and the condition (true or false) is output in object 733.					

Table5.25 Communication object of “Facades”

5.26 Communication object of “Computer”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1530	Computer 1: Input I1	Input			2 bytes	C	R	W	T	-	pulses difference	Low
1531	Computer 1: Input I2	Input			2 bytes	C	R	W	T	-	pulses difference	Low
1532	Computer 1: Input I3	Input			2 bytes	C	R	W	T	-	pulses difference	Low
1533	Computer 1: Output O1	Output			1 bit	C	R	-	T	-	switch	Low
1534	Computer 1: Output O2	Output			1 bit	C	R	-	T	-	switch	Low
1535	Computer 1: Condition text	Output			14 bytes	C	R	-	T	-	Character String (ASCII)	Low
1536	Computer 1: Monitoring status	Output			1 bit	C	R	-	T	-	switch	Low
1537	Computer 1: Block (1: block)	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.26 Communication object of “Computer”

NO.	Name	Function	Types	Property	DPT
1530/.../ 1532	**Calculator 1: Input I1/2/3**	**Input**	**4 Bytes**	**R,W,C,T**	**Depending on setting**
First Input for Computer 1/2/3 (bit/byte/percentage/degree/...).					
1533/15 34	**Calculator 1: Output O1/2**	**Output**	**4 Bytes**	**R,C,T**	**Depending on setting**
First Output for Computer 1 (bit/byte/percentage/degree/...).					
1535	**Calculator 1: Condition text**	**Output**	**14 Bytes**	**R,C,T**	**16.000 Character String (ASCII)**
Text output for the condition: met(True)/not met(False).					
1536	**Calculator 1: Monitoring status**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
Indicates the current condition of the monitored inputs, If no value recieved for the inputs in the set time range, This status is True = 1 indicating an issue. Default					
1537	**Calculator 1: Block (1: Block)**	**Input**	**1 Bit**	**W,C**	**1.001 switch**
Used to receive a binary state block = 1 or allow = 0 the switching of an output Obj.No. 1533 & 1534.					

Table5.26 Communication object of “Computer”

5.27 Communication object of “Week time switch”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1600	Weekly time switch period 1: Switch-on time	Input			3 bytes	C	R	W	T	-	time of day	Low
1601	Weekly time switch period 1: Switch-off time	Input			3 bytes	C	R	W	T	-	time of day	Low
1602	Weekly time switch period 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
1603	Weekly time switch period 1: 8-bit output	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low

Fig.5.27 Communication object of “Week time switch”

No.	Name	Function	Types	Property	DPT
1600	**Weekly timer period 1: Switch-on time**	**Input**	**R,W,C,T**	**3 Bytes**	**10.001 time of day**
Sets the specific time (hours and minutes) at which the WTP 1 should start for selected days. WTP (Weekly timer period).					
1601	**Weekly timer period 1: Off time**	**Input**	**R,W,C,T**	**3 Bytes**	**10.001 time of day**
Sets the specific time (hours and minutes) at which the WTP 1 should end for selected days.					
1602	**Weekly timer period 1: Switching output**	**Output**	**R,C,T**	**1 Bit**	**1.001 switch**
Value is High(1) when WTP 1 is active & Value is Low(0) when WTP 1 is inactive .					
1603	**Weekly timer period 1: 8-bit output**	**Output**	**R,C,T**	**1 Byte**	**5.010 counter pulses (0...255)**
According to WTP 1 Switching output, two preset values possible (0-255). Value If WTP 1 is active & Value If WTP 1 is Not-active.					

Table 5.27 Communication object of “Week time switch”

5.28 Communication object of “Calendar time switch”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1720	Calendar time switch period 1: Start date	Input			3 bytes	C	R	W	T	-	date	Low
1721	Calendar time switch period 1: End date	Input			3 bytes	C	R	W	T	-	date	Low
1722	Cal. time switch period 1 seq. 1: Switch-on time	Input			3 bytes	C	R	W	T	-	time of day	Low
1723	Cal. time switch period 1 seq. 1: Switch-off time	Input			3 bytes	C	R	W	T	-	time of day	Low
1724	Cal. time switch period 1 seq. 1: Switching output	Output			1 bit	C	R	-	T	-	switch	Low
1725	Calendar time switch period 1 seq. 1: 8-bit output	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low

Fig.5.28 Communication object of “Calendar time switch”

NO.	Name	Function	Types	Property	DPT
1720	**Calendar timer period 1: Start date**	**Input**	**3 Bytes**	**R,W,C,T**	**11.001 date**
The starting Month and Day of the CTP 1 . CTP (Calendar timer period)					
1721	**Calendar timer period 1: End date**	**Input**	**3 Bytes**	**R,W,C,T**	**11.001 date**
The ending Month and Day of the CTP 1.					
1722	**Calendar timer period 1 sequence 1: Switch-on time**	**Input**	**3 Bytes**	**R,W,C,T**	**10.001 time of day**
CTP 1 Seq 1 Switch On Time: Hours: 0 to 23 / Minutes: 0 to 59.					
1723	**Calendar timer period 1 sequence 1: Off time**	**Input**	**3 Bytes**	**R,W,C,T**	**10.001 time of day**
CTP 1 Seq 1 Switch Off Time : Hours: 0 to 23 / Minutes: 0 to 59.					
1724	**Calendar timer period 1 sequence 1: Switching output**	**Output**	**1 Bit**	**R,C,T**	**1.001 switch**
If the CTP 1 Seq 1 is active and the current time falls within the defined time range, the output is high (1); If the period is not active or the current time is outside the defined time range, the output is low (0).					
1725	**Calendar timer period 1**	**Output**	**1 Byte**	**R,C,T**	**5.010 counter pulses (0...255)**

	sequence 1: 8-bit output				
According to CTP 1 Seq 1 Switching output, two preset values in the parameters are possible (0-255). Value If CTP 1 Seq 1 is active & Value If CTP 1 Seq 1 is Not-active.					

Table5.28 Communication object of “Calendar time switch”

5.29 Communication object of “Logic”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
1780	Logic input 1	Input			1 bit	C	-	W	-	-	boolean	Low
1781	Logic input 2	Input			1 bit	C	-	W	-	-	boolean	Low
1782	Logic input 3	Input			1 bit	C	-	W	-	-	boolean	Low
1783	Logic input 4	Input			1 bit	C	-	W	-	-	boolean	Low
1784	Logic input 5	Input			1 bit	C	-	W	-	-	boolean	Low
1785	Logic input 6	Input			1 bit	C	-	W	-	-	boolean	Low
1786	Logic input 7	Input			1 bit	C	-	W	-	-	boolean	Low
1787	Logic input 8	Input			1 bit	C	-	W	-	-	boolean	Low
1788	Logic input 9	Input			1 bit	C	-	W	-	-	boolean	Low
1789	Logic input 10	Input			1 bit	C	-	W	-	-	boolean	Low
1790	Logic input 11	Input			1 bit	C	-	W	-	-	boolean	Low
1791	Logic input 12	Input			1 bit	C	-	W	-	-	boolean	Low
1792	Logic input 13	Input			1 bit	C	-	W	-	-	boolean	Low
1793	Logic input 14	Input			1 bit	C	-	W	-	-	boolean	Low
1794	Logic input 15	Input			1 bit	C	-	W	-	-	boolean	Low
1795	Logic input 16	Input			1 bit	C	-	W	-	-	boolean	Low
1800	AND logic 1: 1 bit switching output	Output			1 bit	C	R	-	T	-	boolean	Low
1801	AND logic 1: 8 bit output A	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low
1802	AND logic 1: 8 bit output B	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low
1803	AND logic 1: Block	Input			1 bit	C	-	W	-	-	switch	Low
1832	OR logic 1: 1 bit switching output	Output			1 bit	C	R	-	T	-	boolean	Low
1833	OR logic 1: 8 bit output A	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low
1834	OR logic 1: 8 bit output B	Output			1 byte	C	R	-	T	-	counter pulses (0..255)	Low
1835	OR logic 1: Block	Input			1 bit	C	-	W	-	-	switch	Low

Fig.5.29 Communication object of “Logic”

No.	Name	Function	Types	Property	DPT
1780/.../1795	**Logic input 1/.../16**	**Input**	**W,C**	**1 Bit**	**1.002 boolean**
Logical input 1/.../16 of type bit to be used in logical funtions.					
1800	**AND logic 1: 1-bit switching output**	**Output**	**R,C,T**	**1 Bit**	**1.002 boolean**
Output of And Logic 1 according to 4 available inputs.					
1801	**AND logic 1: 8-bit output A**	**Output**	**R,C,T**	**1 Byte**	**5.001 percentage (0...100%)**
Output A of And Logic 1 (1Byte Value set in the parameters)					

1802	**AND logic 1: 8-bit output B**	**Output**	**R,C,T**	**1 Byte**	**5.001 percentage (0...100%)**
Output B of And Logic 1 (1Byte Value set in the parameters)					
1803	**AND logic 1: Block**	**Input**	**W,C**	**1 Bit**	**1.001 switch**
Used to block the output of And Logic 1 (1 = block & 0 = released). Default					
1832	**OR logic 1: 1-bit switching output**	**Output**	**R,C,T**	**1 Bit**	**1.002 boolean**
Output of OR Logic 1 according to 4 available inputs.					
1833	**OR logic 1: 8-bit output A**	**Output**	**R,C,T**	**1 Byte**	**5.001 percentage (0...100%)**
Output A of OR Logic 1 (1Byte Value set in the parameters)					
1834	**OR logic 1: 8-bit output B**	**Output**	**R,C,T**	**1 Byte**	**5.001 percentage (0...100%)**
Output A of OR Logic 1 (1Byte Value set in the parameters)					
1835	**OR logic 1: Block**	**Input**	**W,C**	**1 Bit**	**1.001 switch**
Used to block the output of OR Logic 1 (1 = block & 0 = released). Default					

Table 5.29 Communication object of “Logic”