

Software Description

Subject to technical alteration

Issue 27.07.12

thanos SR

1 Overview

The application for room operating panel **thanos** can take over the functions temperature control with PI-controller for heating/cooling, temperature detection, set point adjustment, occupancy button with overtime function and fan stage adjustment. The defaults of the LonMark® function profiles 8090 „Space Comfort Control Command Module“, 3200 „Switch“ und 1 „Open Loop Sensor“ are considered. Furthermore the application enables the receipt and evaluation of max. 6 EnOcean wireless sensors. You will find an overview of the supported sensors in chapter 6.3. For extended setting options, user defined configuration properties (UCPT) are used. The UCPTs used are defined in the Thermokon Device Resource Files from version 2.5 or higher.

Temperature measurement: The measurement is made by an internal sensor or by an external LON sensor via the input variables nviSpaceTemp.

1.1 Integration

The device can be commissioned via the Service-Pin. The call-up is made by simultaneous pressing of key 1 and 7 for about 5s. See 2.4.3 Service PIN.

Note: Application thanos_scc_01 can only be used using LNS Version 3.20 and higher!

IMPORTANT: After the device was parameterized using the Plugin, the network variable nviWriteConfig has to be written once (regardless of which value) to activate the configuration parameters in device!!

2 Device description

2.1 Operating control surface

For the **thanos** type S / SQ the operating interface is divided into one, and for the L / LQ into two zones:

- Menu area for control and display
- Keypad for control (Version L / LQ only)

On **thanos** S / SQ is also the possibility to configure submenus, over which a similar functionality as the keypad on **thanos** L / LQ is available. For details, see Chapter [Configuration Parameters Switch Object](#):

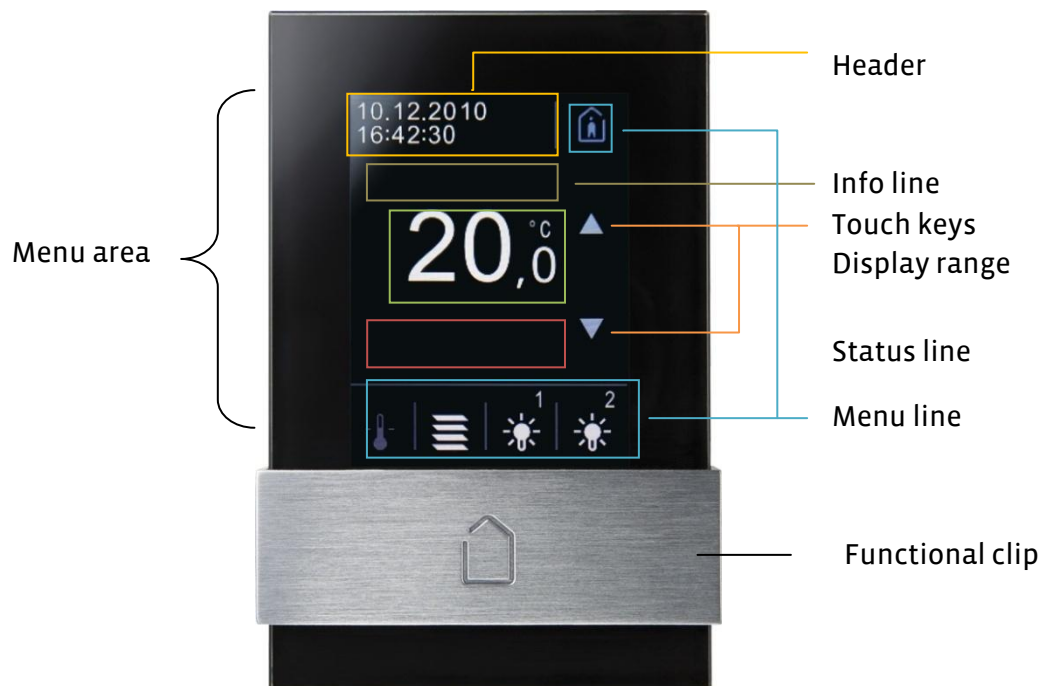


Figure 1 – **thanos** S

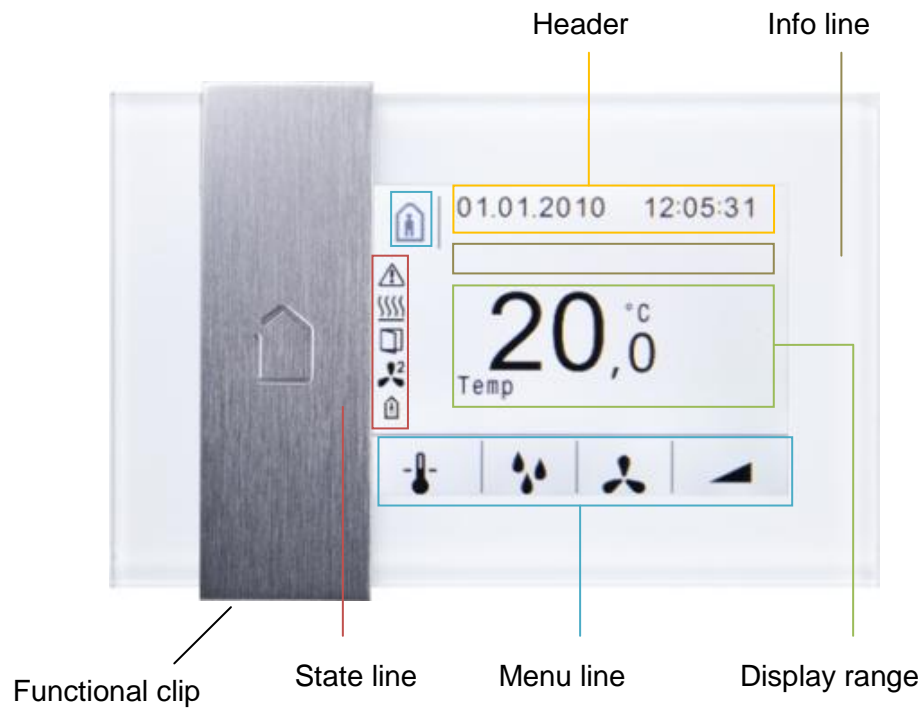


Figure 2- thanos SQ

Device description

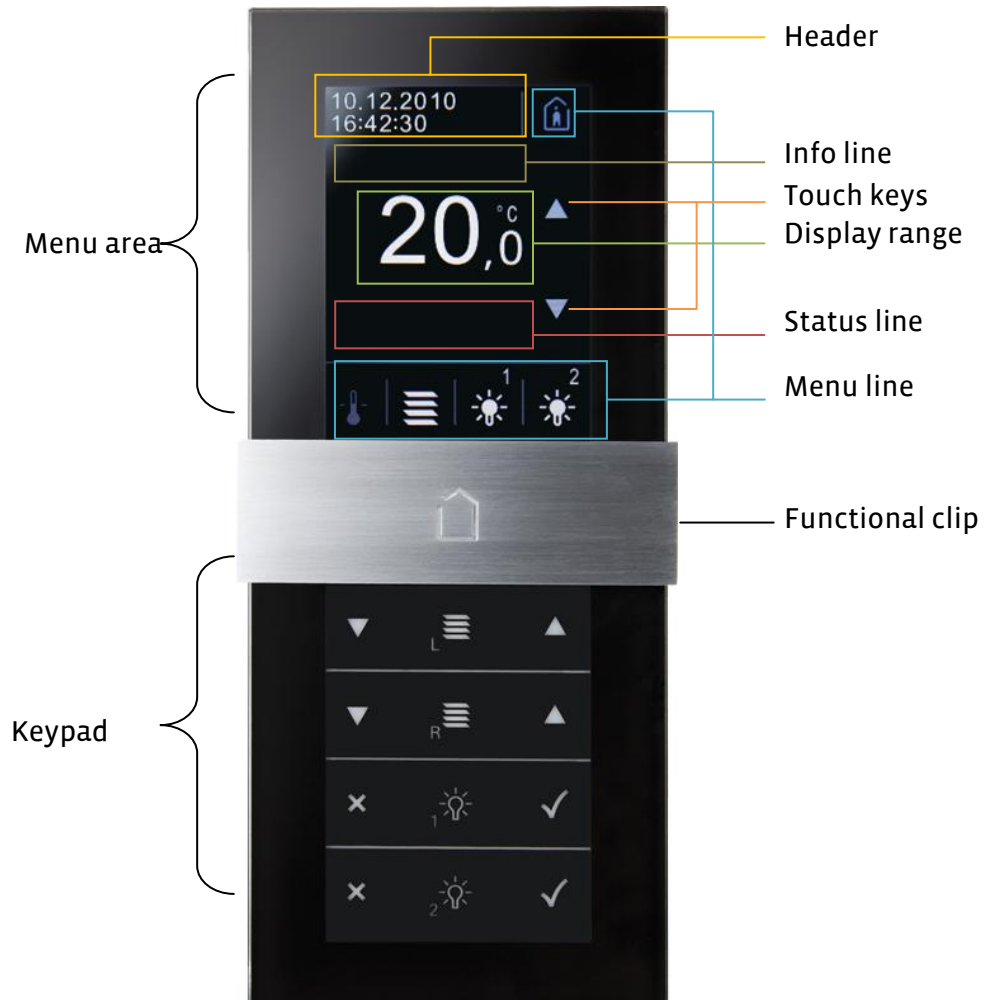


Figure 2-3 thanos L Operating interface

Functional clip

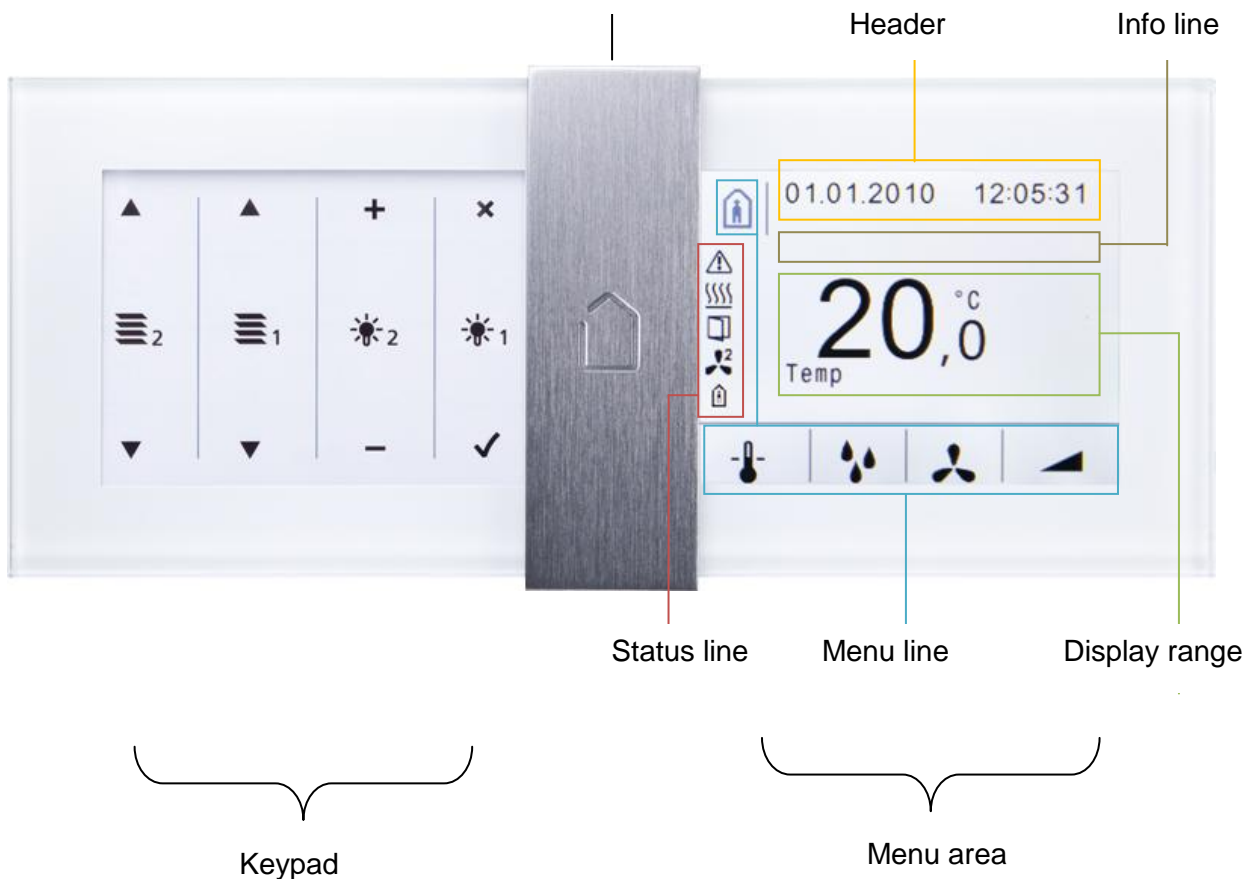


Figure 3-4 - thanos LQ operating interface

The menu area consists of a 3.5" big TFT-Display with 262.144 colors and a touch-display for controlling.

Via filed menus in the menu-line different values can be displayed and changed. It can be parameterized which values are displayed and which menu-points are present.

The keypad consists of an individually printable slide-in foil and a touch-surface. The keys of the area can be occupied with several functions.

2.2 Menu area

Headline:

The current date and time can be displayed in different formats and types. The battery-buffered Real Time Clock of the **thanos** provides for the correct time in case of a voltage reset.

Info line:

Arbitrary messages with a length of max. 14 symbols can be displayed in the info line.

Display range:

In the display range following functions can be chosen:

- Room temperature, relative humidity (optional)
- 1 Setpoint of integrated controller
- 5 set-points effective and offset with arbitrary unit and description
- 5 external values with arbitrary unit and description

Furthermore values and states of the currently activated menu are displayed.

Status line:

In the status line different symbols for fan levels, room occupation, malfunction, heating, cooling, window and dew point can be displayed.



Menu line:

In the menu line different menu points can be saved and called by the user through touching the corresponding symbol.

Following menu items can be parameterized:

Set point



Fan coil







Occupancy mode



Light, Blind, Universal



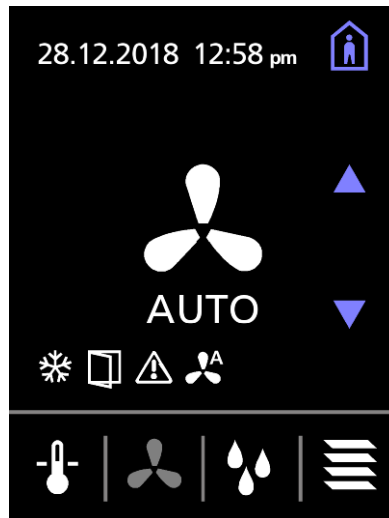
If a menu point is selected, the corresponding symbol is displayed grey-shaded in the menu line and in the display line the value/status is displayed which can be changed in the corresponding menu. By means of the operating key (depending on the function: either  /  or  / ) the value/status can be changed afterwards.

Device description

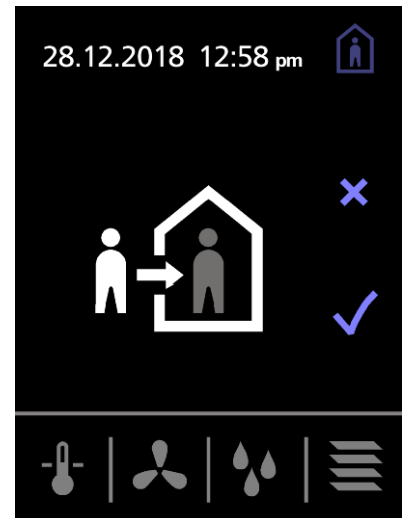
Examples:



Menu „temperature set point“
mode“



Menu „fan stages“



Menu „occupancy

Illustration 2-5 Menus


2.3 Touch keys

The keypad consists of 8 keys in total. The keys are soft keys, so that the functions of the keys can be freely adjusted via the configuration software. If a key is touched, the corresponding function is visually shown in the display

Example:



Illustration 2-6 Touch keys

In the lower operating interface, the key “blind 2 up” was selected. In the display area the corresponding symbol is displayed in big. Next to it the actuated symbol, e.g.  is displayed. After a freely programmable time, the display indication is reset to the original display indication.

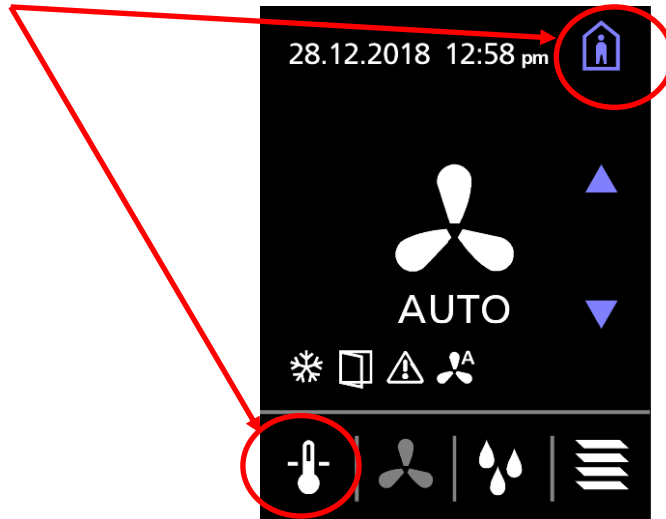
For **thanos** S/SQ it is possible to parameterize a field programmable sub-menu by which a functionality similar to the keypad of **thanos** L/LQ can be realized.

Device description

2.4 Startup

For LON-specific properties the **thanos** has an special menu. The selection is made by simultaneous pressing of keys 1 and 7 for about 5s. The start-up screen at first indication will look like following:

key 1 and 7



Button functions



scrolling in the menu



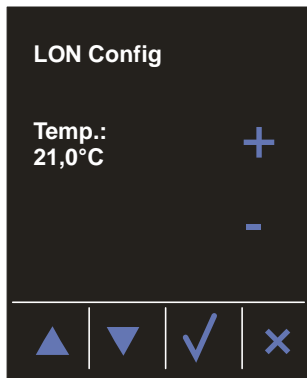
set values



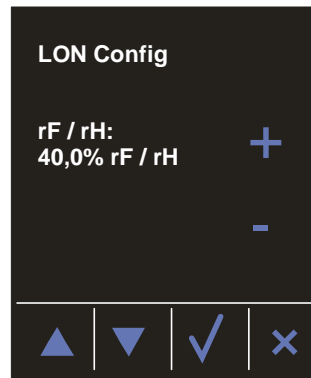
Accept/Quit action. Both actions will exit the configuration menu.

Device description

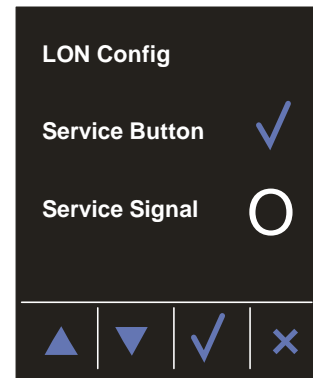
Following settings are possible in the modification mode: temperature offset, humidity offset and service PIN:



Menu temperature offset



Menu humidity offset



Menu service PIN

2.4.1 Temperature offset

Each temperature sensor is factory-calibrated. Because of the voltage-dependent self-heating of the electronics and the temperature dynamic of the wall, in some cases a subsequent calibration can be necessary. The calibration mode enables a possibility for the user to calibrate the device itself via keys.

2.4.2 Humidity offset (in case of existing humidity sensor)

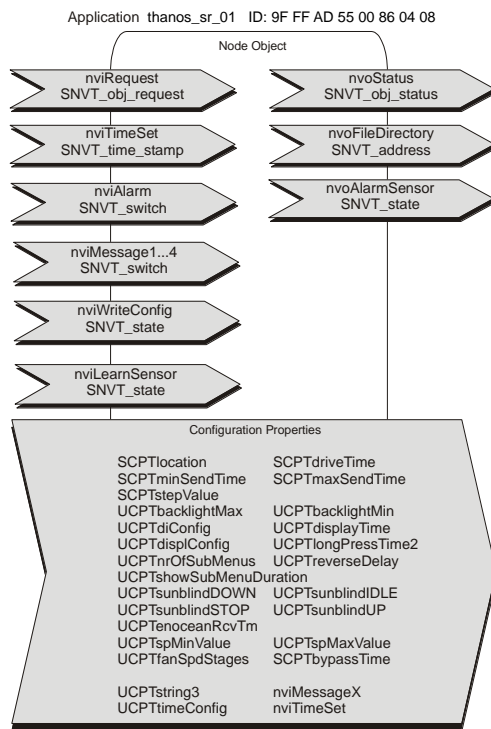
For the calibration of the humidity

2.4.3 Service PIN

Service-Pin must be pushed for integration into the network!

3 Node Object

The Node Object supervises and controls the functions of the individual objects in the device. The basic functions required by the LonMark® are supported, whereas general network variables and configuration properties for the control and parameterization of the device were added.



Time/Date:

Time and date can be shown in the display in field 1 and 2. After a module reset the display for date and time is faded out in the upper field. Only if a message is received via the input variable nviTimeSet the time is faded in. The time should be synchronized via a LON system clock once a day. The display of the time can be adapted to individual requests by UCPTtimeConfig.

Display of Measuring Values: Additionally to the room temperature also other values such as set point, outdoor temperature, CO2 concentration and percentage values can be displayed. Configuration is made via UCPTdisplConfig whereas the display is changing between the different readings in the time interval UCPTdisplayTime. Measuring values are displayed in field 2.

Menu Keys:

By UCPTdiConfig the menu keys of the display and the digital inputs including set point adjustment, fan stage adjustment, room occupancy and switch functions can be configured.

Background Illumination:

In the stand-by mode, i.e. if no button actuation is made for more than 30 sec., the value UCPTbacklightMin determines the

brightness of the LCD. Through button actuation the stand-by mode is left and the value UCPTbacklightMax determines the brightness of the background illumination.

IMPORTANT: After the device was parameterized using the Plugin, the network variable nviWriteConfig has to be written once (regardless of which value) to activate the configuration parameters in device!!

3.1 Input Variables Node Object:

nviRequest

SNVT Type: SNVT_obj_request, Index 92

Function: Input variable including the functions RQ_NORMAL, RQ_UPDATE_STATUS and RQ_REPORT_MASK.

nviTimeSet

SNVT Type: SNVT_time_stamp, Index 84

Function: Input variable for synchronisation of the time displayed by means of a LON system clock. After a module reset the time is faded out as long as the first valid value is received.

nviAlarm

SNVT Type: SNVT_switch, Index 95

Function: The input variable controls the display symbol „failure“:

nviAlarm = 100.0 1 ==> symbol „ failure“ on

nviAlarm = 0.0 0 ==> symbol „ failure“ off

By the configuration property UCPTString3 the error signal is defined. The failure message is indicated in display 1.

nviMessage1; nviMessage2 ... nviMessage4

SNVT Type: SNVT_switch, Index 95

Function: The input variable will be shown in the display depending on the configuration.

Parameter: With the property UCPTString3 text will be indicated. Messages are displayed alternating when more than one nviMessage-variable is “switched on”.

Node Object

nviWriteConfig

SNVT Type: SNVT_state, Index 83

Funktion: After the device was parameterized using the Plugin, the network variable nviWriteConfig has to be written once (regardless of which value) to activate the configuration parameters in device!

nviLearnSensor

SNVT Type: SNVT_state, Index 83

Funktion: Upon installation of the sensors the objects can be placed in the learning mode by means of nviLearn..., whereas each bit of a network variable is allocated to a SR-sensor object.

nviLearn.bit0 ==> SR-Sensor-Object[0]

nviLearn.bit1 ==> SR-Sensor-Object[1]

::

nviLearn.bit5 ==> SR-Sensor-Object[5]

Bit-value = 1, the object is switched to the learning mode. After having received a correct message, the ID is stored in the selected object and the learning modus is automatically left (Bit is set to 0).

3.2 Output Variables Node Object:

nvoStatus

SNVT Type: SNVT_obj_status, Index 93

Funktion: Output variable including the requested status bits „invalid_id“ and „invalid_request“.

nvoFileDirectory

SNVT Type: SNVT_address, Index 114

Funktion: The output variable makes the address data of the configuration property in the device available to the LON-integration tool.

nvoAlarmSensor

SNVT Type: SNVT_state, Index 83

Funktion: If no telegram is received for a time exceeding the monitor time UCPTenOceanRcvTm, an alarm message is generated by nvoAlarmSensor, whereas each sensor is allocated to a bit. The alarm bits are cleared automatically by receiving the next associated telegram.

nvoAlarmSensor.bit0 = 1 ==> Alarm for SR-Sensor-Object[0]

nvoAlarmSensor.bit1 = 1 ==> Alarm for SR-Sensor-Object[1]

:

nvoAlarmSensor.bit5 = 1 ==> Alarm for SR-Sensor-Object[5]

3.3 Configuration Property Node Object:

SCPTlocation

SCPT Index: 17, SNVT_str_asc

Funktion: Additional input option to save information on the location in the device.

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Funktion: Heartbeat function. Stipulates interval time after which all output variables of the device are sent independently of a value change. By means of the input values = 0, the heartbeat function is deactivated. (Preset value: 0, i.e. the output variables are only sent, if an output value has changed, e.g. with an alarm message or if a sensor telegram is received)

UCPTtimeConfig

UCPT Index: 45, typedef struct {unsigned short Byte[4]} UNVT_str_hex4

Funktion: By UCPTtimeConfig the display mode of weekday, date and time can be configured.

UCPTtimeConfig[0].Byte[0...3] configures time and date in the upper field of the display.

!! The time should be synchronized by a LON system clock once a day.

UCPTtimeConfig.Byte[0] = 0 ==> Display date faded out

UCPTtimeConfig.Byte[0] = 1 ==> Display date english

UCPTtimeConfig.Byte[0] = 2 ==> Display date german

Default

UCPTtimeConfig.Byte[1] = 0 ==> Display time faded out

Node Object

UCPTtimeConfig.Byte[1] = 1 ==> Display time with seconds
 UCPTtimeConfig.Byte[1] = 2 ==> Display time without seconds
 UCPTtimeConfig.Byte[2] = 0 ==> Display time mode 24h
 UCPTtimeConfig.Byte[2] = 1 ==> Display time mode 12h

Default
Default

UCPTdisplayTime

UCPT Index: 16, SNVT_time_sec

Function: The configuration property defines the period of time of a display message respectively the up-date interval of the display. (Preset value: 5,0 sec)

UCPTbacklightMin[2]

UCPT Index: 48, SNVT_lev_cont

Function: In the stable state, i.e. after module reset or if no button actuation is made for a period longer than 15 sec. the value UCPTbacklightMin[0] determines the background illumination of the LCD. The value UCPTbacklightMax[1] determines the brightness of the inscription field.

UCPTbacklightMax[2]

UCPT Index: 47, SNVT_lev_cont

Function: If the stable state is left by actuating a button, the value UCPTbacklightMax[0] determines the brightness of the background illumination of the LCD. The value UCPTbacklightMax[1] determines the brightness of the inscription field.

UCPTdisplConfig

UCPT Index: 46, SNVT_state

Function: By UCPTdisplConfig the display type and the values that shall be indicated in the main field can be configured. If several measuring values are shown, the display toggles between the measuring values in the time interval UCPTdisplayTime.

UCPTdisplConfig.Byte[0]	Function	Wert	Default
Byte[0].bit[0]	Rotation	0=Vertical 1=Horizontal	0
Byte[0].bit[1]	Background illumination LCD	0=black 1=white	0
Byte[0].bit[2]	Show temperature on/off	0 = hide 1 = show	1
Byte[0].bit[3]	Show humidity on/off	0 = hide 1 = show	0
Byte[0].bit[4]	Show decimal place temperature	0 = without a tenth 1 = with a tenth	1
Byte[0].bit[5]	Show decimal place rel. humidity	0 = without a tenth 1 = with a tenth	0
Byte[0].bit[6]	Activation of the device by actuating a button	0 = disabled 1 = enabled	0
Byte[0].bit[7]	Unit of the temperature	0 = °F 1 = °C	1
Byte[0].bit[8]	Show fan stage after reset	0 = Off 1 = On	0
Byte[0].bit[9]	Show room occupation after reset		1
Byte[0].bit[10]	Display menu line 1		0
Byte[0].bit[11]	Display menu line 2		0
Byte[0].bit[12]	Display menu line 3		0
Byte[0].bit[13]	Display menu line 4		0
Byte[0].bit[14]	Display menu line 5		0

Node Object

Byte[0].bit[15]	Show fanstage in automatic mode		0
UCPTdisplConfig.Byte[1]	Function	value	Default
Byte[1].bit[0]	External value 1: resolution	0 = without decimal point 1 = with decimal point	0
Byte[1].bit[1]	External value 1: Show in display	0 = Off 1 = On	0

UCPTlongPressTime2

UCPT Index: 78, typedef struct { SNVT_time_sec dimming; SNVT_time_sec sunblind;
SNVT_time_sec scene; SNVT_time_sec universal; }

Function: The action for a long press can be defined with this configuration property, e.g. dimming, blind, scene and universal. (Preset value: 2.0;2.0;2.0;2.0)

UCPTstring3

UCPT Index: 3, SNVT_str_asc

Function: By means of this property, the corresponding message text which shall be faded-in upon activation of the associated nviMessage in the display is configured.

3.3.1 Blind settings

SCPTdriveTime

UCPT Index: 45, SNVT_time_sec

Function: This configuration property defines the updating interval of the displays in the main menu as well as the display period of a displayed message in case several messages are faded-in (see description of nviMessageX). Preset value: 5,0 sec.

UCPTreverseDelay

UCPT Index: 14, SNVT_count

Function: The configuration parameter defines the reverse delay with a rotation reverse of the blind motors in ms. Thus an alternate command e.g. from nvoSetting = SET_UP to nvoSetting = SET_DOWN is output with a delay. (Preset value: 500 ms)

UCPTsunblindUP

UCPT Index: 72, SNVT_setting

Function: This configuration property defines, which SNVT_setting value is transmitted while opening the blind.
(Preset value: SET_UP 100.0 0.0)

UCPTsunblindDOWN

UCPT Index: 73, SNVT_setting

Function: This configuration property defines, which SNVT_setting value is transmitted while shutting the blinds..
(Preset value: SET_DOWN 100.0 0.0)

UCPTsunblindSTOP

UCPT Index: 74, SNVT_setting

Function: This configuration property defines, which SNVT_setting value is transmitted while stopping the blind.
(Preset value: SET_STOP 0.0 0.0)

UCPTsunblindIDLE

UCPT Index: 75, SNVT_setting

Node Object

Function: This configuration property defines, which SNVT_setting value will be transmitted for the standby mode of the blind. UCPTsunblindIDLE is transmitted 500ms after stopping the blind, only if UCPTsunblindIDLE is unequal UCPTsunblindSTOP.
(Preset value: SET_NUL 0.0 0.0)

3.3.2 Submenu (only **thanos S!!**)

UCPTnrOfSubmenus

UCPT Index: 79, unsigned short

Function: Selection, if a sub-menu shall be used. A sub-menu is only available in the S-version!!!

UCPTshowSubMenuDuration

UCPT Index: 80, SNVT_time_sec

Function: The configuration property defines the period of time of a submenu is faded in.

3.3.3 Dimming settings

SCPTminSendTime

SCPT Index: 52, SNVT_time_sec

Function: This configuration parameter stipulates the sending interval of the output variables in the dimming mode. By means of input values = 0 the function is deactivated. (Preset value: 0,3 s)

SCPTstepValue

SCPT Index: 92, SNVT_lev_cont

Function: This configuration parameter defines the step size of the variables nvoSwitch.value in the dimming mode.

3.3.3.1 General Settings

UCPTenocanRcvTm

UCPT Index: 33, SNVT_time_min

Function: If no telegram is received for a time exceeding the monitor time UCPTenocanRcvTm, an alarm message is generated, whereas each sensor of a bit is allocated to the SNVT_state - variable nvoAlarm and can be identified, thus. The individual alarm bits are automatically cleared upon receipt of the next associated telegram. (Preset value: 60 min).

SCPTbypassTime

SCPT Index: 34, SNVT_time_min

Function: Configuration property for the output variable nvoMultiOut_2 of the presenence key / wireless chair /slide switch in the Sensor-Objects.

SCPTbypassTime = 0: Upon actuation nvoMultiOut_2 only sends the value OC_OCCUPIED / 100.0 1. A reset to the value OC_UNOCCUPIED / 0.0 0 is not made.

SCPTbypassTime = 1: The status of the contact is output. The output variable nvoMultiOut_2 sends with closed contact OC_OCCUPIED / 100.0 1 and is reset to OC_UNOCCUPIED / 0.0 0 without any time delay by opening the contact.

By SCPTbypassTime = 2 each button actuation leads to a toggling of the lighting, i.e. between ON and OFF (only with the network variable type: SNVT_switch)

SCPTbypassTime >= 3: Herewith the overtime function is activated. By actuation, the output variable nvoMultiOut_2 receives the value OC_OCCUPIED / 100.0 1. After expiration of the delay time, it is reset to the value OC_UNOCCUPIED / 0.0 0. Each actuation restarts the timer .

(Range: < 1000, preset value : 90 min)

UCPTspMinValue, UCPTspMaxValue

UCPT Index: 40, 41, SNVT_temp_p

Function: The parameter determines the output values of nvoSetpoint with left and right stop of the set point potentiometer and defines the adjustment range. (Preset values: -3 °C and +3 °C)

Node Object

UCPTfanSpdStages

UCPT Index: 13, SNVT_count

Function: Configuration property for default of fan stages.

With switch position Auto	Without switch position Auto
1 – 1 Stage with Auto	11 – 1 Stage without Auto
2 – 2 Stage with Auto	12 – 2 Stage without Auto
3 – 3 Stage with Auto	13 – 3 Stage without Auto

(Preset value: 3 ==> OFF, 33,0 %, 66,5 %, 100,0 %, AUTO)

UCPTdiConfig[0]...[13]

UCPT Index: 44, typedef struct {unsigned short Byte[4]} UNVT_str_hex4

Function: This configuration parameter determines the button function.

UCPTdiConfig[0].Byte[x] configures clip

UCPTdiConfig[1].Byte[x] configures button 1

...

UCPTdiConfig[12].Byte[x] configures button 14

UCPTdiConfig[13].Byte[x] configures button 15

UCPTdiConfig[x].Byte[0] configures the function

Response via display UCPTdiConfig[x].Byte[0] > 0

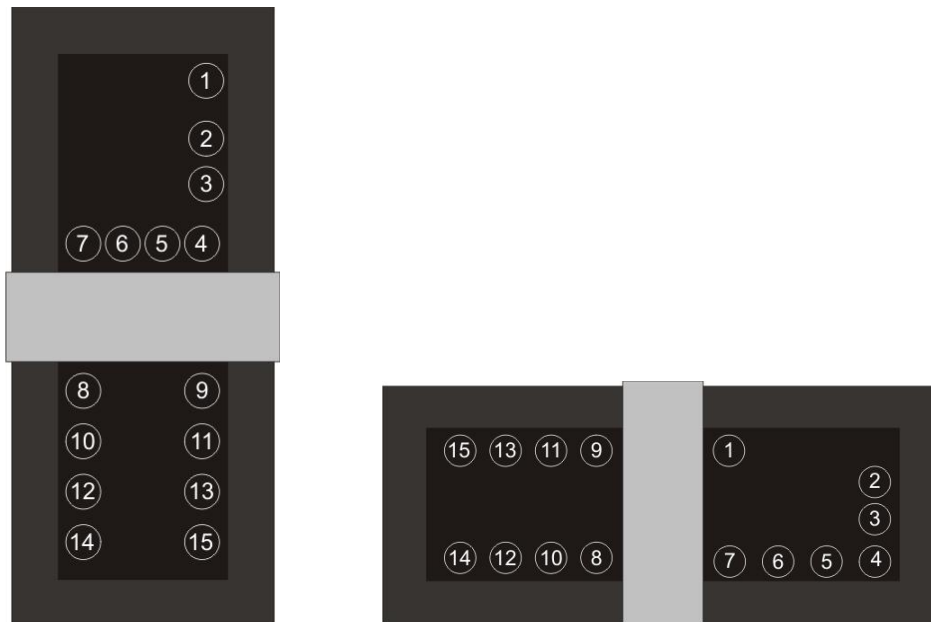
No response via display UCPTdiConfig[x].Byte[0] = 0

UCPTdiConfig[x].Byte[1] configures set-point index and type

UCPTdiConfig[x].Byte[2] configures accompanying switch object

UCPTdiConfig[x].Byte[3] configures function of the button with no special function

Notice: Buttons 2 and 3 are assigned to the menus and cannot be field programmed!



Picture 3-1 Buttons **thanos** L

Instead of the lower direct buttons, which are only available on thanos L / LQ, on thanos S / SQ up to 4 submenus can be configured.

Up to 6 configurable buttons for each submenu can be configured with the functions given below:

- Light on / off

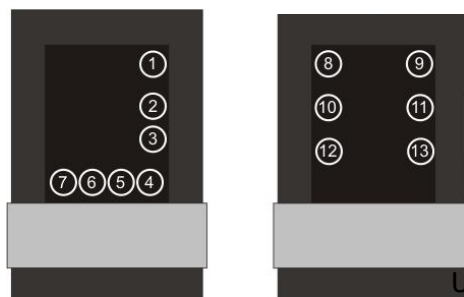
Node Object

- Light toggle
- Shutter / Blind up / down
- Universal on / off
- Universal toggle
- Occupancy toggle

To switch to the submenu, one of the buttons 1, 4...7 has to be configured as „submenu right“.

The buttons in the submenu are numbered consecutively (8 ... 13).

In addition, if a submenu should be used the parameter "number of sub-menus" has to be set (range 0 ... 1).



Picture 8
Buttons **th**ianos S

Menu area keys with symbol indication in the display

Selection of button functions via UCPTdiConfig[x].Byte[0]

Selection symbol and index UCPTdiConfig[x].Byte[1]

A set-point has to be connected with a symbol. For a better differentiation by the index the function can be marked.

Example:

Menu set-point 1 with symbol temperature and index 1

Byte[0] = 0x02

Byte[1] = 0x11

Selection Switch-Object UCPTdiConfig[x].Byte[2]

UCPTdiConfig, configuration of keys				
Taste 1...5 - function				
Byte[0] Function selection		Byte[1] Symbol and index selection		Byte[2] Switch-object selection
0x00	No special function	See: No special function (no indication in the display)		
0x01	Menu set-point temperature regulation SCC	0x1x Symbol Temperature 0x2x Symbol humidity 0x3x Symbol value	0xx0 Index 0 0xx1 Index 1 0xx2 Index 2 0xx3 Index 3 0xx4 Index 4 0xx5 Index 5 0xx6 Index 6 0xx7 Index 7 0xx8 Index 8 0xx9 Index 9	Not defined
0x07	Menu fan stage	Not defined		
0x08	Menu Light			Selection Switch Object
0x09	Menu Light-Dimming			
0x0A	Menu blind			
0x0B	Menu Universal			
0x0C	Menu Presence			

Keypad with user-defined channel assignment

Working with **thanos L** the keys on the keypad and working with **thanos S** the keys in the submenu can be configured with the following functions. Up to 10 channels (Light, blinds, ...) can be controlled.

Selection of button functions via UCPTdiConfig[x].Byte[0]

Selection Index UCPTdiConfig[x].Byte[1]

The function can be marked for a better differentiation by the index.

Example:

Light ON and index 1

Byte[0] = 0xA0

Byte[1] = 0x01

Selection Switch-Object UCPTdiConfig[x].Byte[2]

UCPTdiConfig, Configuration of Menu Keys			
Taste 0,6...13 - function			
Byte[0] function selection		Byte[1] Symbol and Index selection	Byte[2] Switch-Object selection
0x00	No special function	See: No special function (no indication in the display)	
0xA0	Light ON	0xx0 Index 0 0xx1 Index 1 0xx2 Index 2 0xx3 Index 3 0xx4 Index 4 0xx5 Index 5 0xx6 Index 6 0xx7 Index 7 0xx8 Index 8 0xx9 Index 9	Selection Switch Objekt
0xA1	Light OFF		
0xA2	Blind UP		
0xA3	Blind DOWN		
0xA4	Universal ON		
0xA5	Universal OFF		
0xA6	Light toggle		
0xA7	Universal toggle		
0xA8	Presence toggle		

Switch Object

Keypad with fixed channel 0 assignment

Working with **thanos L** the keys on the keypad and working with **thanos S** the keys in the submenu can be configured with the following functions. All functions refer to channel 0.

UCPTdiConfig[x].Byte[0] = 0x00

Selection of button functions via UCPTdiConfig[x].Byte[3]

UCPTdiConfig, configuration of keys	
Byte[3]	button 1...14 - function
No function	
0x00	unoccupied

0x10 – 0x14 Dimming function

UCPTdiConfig, configuration of keys		
Byte[3]	Button 1...14 - function	SNVT-Type
Dimming		
0x11	Light toggle with dimming Switch-on value = last On-value	SNVT_switch
0x13	Light only brighter with dimming Switch-on value = last On-value	SNVT_switch SNVT_setting
0x14	Light only darker with dimming nvoMultiOut_1	SNVT_switch SNVT_setting

Short keystroke switches ON/OFF of the background illumination. With long keystroke light can be dimmed.

In toggle-mode the dimming-direction will be changed (brighter respectively darker) through a following keystroke.

0x20 – 0x21 blinds

UCPTdiConfig, configuration of keys		
Byte[3]	Taste 1...14 - function	SNVT-Type
Jalousie		
0x20	Blind UP	SNVT_setting
0x21	Blind DOWN	SNVT_setting

Short keystrokes result in stopping or adjusting the blinds. Long keystrokes activate the automatic opening or closing (0-100%).

Switch Object

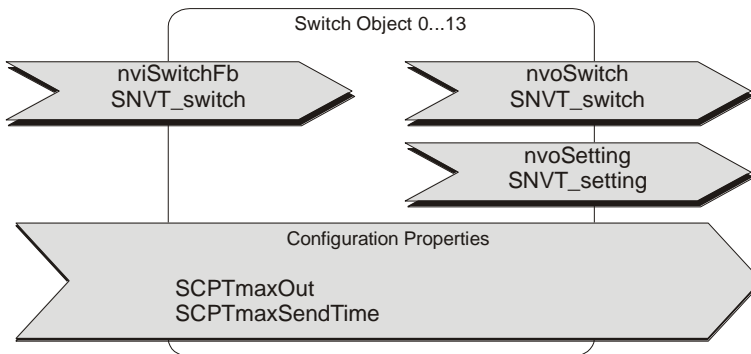
0x30 – 0x31 shutters

UCPTdiConfig, configuration of keys		
Byte[3]	Taste 1...14 - function	SNVT-Type
Shutters		
0x30	Shutter UP	SNVT_setting
0x31	Shutter DOWN	SNVT_setting

The shutter opens or shuts as long as a button is pressed. Short keystrokes activate the automatic opening or shutting.

Switch Object

4 Switch Object



14 identical switch objects for light and blind control. Both, the allocation of the buttons to the individual objects and the determination of the functions are made by the configuration parameters UCPTdiConfig[0]...[13] in the Node Object.

Possible functions are light control ON/OFF, light control ON/OFF with dimming or blinds UP/DOWN with automatic run.

4.1 Input Variable Switch Object:

nviSwitchFb

SNVT Typ: SNVT_switch, Index 95

Function: Input Variable for the current state of the nvoSwitch controlled illumination groups.

4.2 Output Variable Switch Object:

nvoSwitch / nvoSetting

SNVT Typ: SNVT_switch, Index 95 / SNVT_setting, Index 119

Function: Depending on the configuration UCPTdiConfig the output variables send the current switch status of the button (active/inactive) or values for manual light control.

Switch/ Button

Button pressed/ not pressed

SNVT Type: SNVT_switch

Button pressed

nvoSwitch.value = SCPTmaxOut

nvoSwitch.state = 1

Button not pressed

nvoSwitch.value = 0

nvoSwitch.state = 0

SNVT Type: SNVT_setting

Button pressed

nvoSetting.function = SET_ON;

nvoSetting.setting = SCPTmaxOut;

Button not pressed

nvoSetting.function = SET_OFF;

nvoSetting.setting = 0;

Lighting Toggle

Each button actuation results in a toggling of the lighting, i.e. between ON and OFF

SNVT Type: SNVT_switch

Lighting ON

nvoSwitch.value = SCPTmaxOut

nvoSwitch.state = 1

Lighting OFF

nvoSwitch.value = 0

SNVT Type: SNVT_setting

Lighting ON

nvoSetting.function = SET_ON;

nvoSetting.setting = SCPTmaxOut;

Lighting OFF

nvoSetting.function = SET_OFF;

nvoSetting.setting = 0;

Lighting ON

Each button actuation results in a toggling of the lighting

SNVT Type: SNVT_switch

Lighting ON

nvoSwitch.value = SCPTmaxOut

nvoSwitch.state = 1

SNVT Type: SNVT_setting

Lighting ON

nvoSetting.function = SET_ON;

nvoSetting.setting = SCPTmaxOut;

Switch Object

Lighting OFF

Each button actuation results in a switching-off of the lighting

SNVT Type: SNVT_switch

Lighting OFF	nvoSwitch.value	= 0
	nvoSwitch.state	= 0

SNVT Type: SNVT_setting

Lighting OFF	nvoSetting.function	= SET_OFF;
	nvoSetting.setting	= 0;

Automatic

The actuation of an "Automatic-Button" switches the variable nvoSwitch to the value 0,0 -1. Thus, e.g. a light controller can be reset in the automatic mode after external override.

SNVT Type: SNVT_switch

Dimming

Lighting: Toggle by Dimming, Switch-ON Value = Last Switch-ON Value

Short button actuations result in a toggling of the current lighting status, whereas the .value -turn-on value always is SCPTmaxOut. By longer button actuations the dimming function is activated, i.e. based on the current lighting status, the .value-value of the switch variables is raised or lowered in present steps of UCPTstepValue as long as the button is pressed. A renewed long time button actuation results in a reversal of the dimming direction.

SNVT Type: SNVT_switch

Lighting on maximum value	nvoSwitch.value	= last ON-value
	nvoSwitch.state	= 1
Lighting on 50%	nvoSwitch.value	= 50,0
	nvoSwitch.state	= 1
Lighting OFF	nvoSwitch.value	= 0
	nvoSwitch.state	= 0

SNVT Typ: SNVT_setting

Last On-value	nvoSetting.function	= SET_ON
	nvoSetting.setting	= SCPTmaxOut
Brighter dimming of lighting	nvoSetting.function	= SET_UP
	nvoSetting.setting	= SCPTstepValue
Darker dimming of lighting	nvoSetting.function	= SET_DOWN
	nvoSetting.setting	= SCPTstepValue
Lighting Off	nvoSetting.function	= SET_OFF
	nvoSwitch.setting	= 0

Lighting ON by Brighter Dimming, Switch-ON Value = last ON-value

If the lighting is switched-off, a button actuation results in an immediate switching-on of the lighting. By longer button actuations the function "dim brighter" is activated, i.e. based on the current light status the .value - value of the switch variable is reduced in present steps of UCPTstepValue as long as the maximum value SCPTmaxOut is reached. The sending interval in the mode dimming is adjusted by SCPTminSendTime and is preadjusted to approx. 300ms.

SNVT Type: SNVT_switch

Switching-on of lighting	nvoSwitch.value	= last ON-value
	nvoSwitch.state	= 1
Brighter dimming of lighting	nvoSwitch.value	= last value + UCPTstepValue
	nvoSwitch.state	= 1

SNVT Type: SNVT_setting

Switching-on of lighting	nvoSetting.function	= SET_ON;
--------------------------	---------------------	-----------

Switch Object

Brighter dimming of lighting	nvoSetting.setting	= last ON-value
	nvoSetting.function	= SET_UP;
	nvoSetting.setting	= UCPTstepValue;

Lighting OFF by Darker Dimming

If the lighting is turned-on, a short button actuation leads to an immediate switching-off of the lighting. By longer button actuations the function "dim darker" is activated, i.e. based on the current lighting status the .value -value of the switch variables is reduced in percent steps of UCPTstepValue as long as the value 0 is reached. The sending interval in the mode dimming is adjusted by SCPTminSendTime and amounts to approx. 300ms preset.

SNVT Type: SNVT_switch

Switching-off of lighting	nvoSwitch.value	= 0
	nvoSwitch.state	= 0
Darker dimming of lighting	nvoSwitch.value= last value - UCPTstepValue	
	nvoSwitch.state	= 1

SNVT Type: SNVT_setting

Switching-off of lightning	nvoSetting.function	= SET_OFF;
	nvoSetting.setting	= 0;
Darker dimming of lightning	nvoSetting.function	= SET_DOWN;
	nvoSetting.setting	= SCPTstepValue;

Blind

Blind UP

In the configuration mode "blind UP" only the nvoSetting variables are changed and sent. Short button actuations are used for a fine adjustment of the lamellas. A long button acutation starts the automatic run and drives the blind contiuously in the direction open for the time SCPTdriveTime. The automatic run can be stopped by a renewed button actuation.

SNVT Type: SNVT_setting

Open blind	nvoSetting.function	= UCPTsunblindUP;
Stop blind	nvoSetting.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Blind DOWN

In the configuration mode "blind DOWN" only the nvoSetting variables are changed and sent. Short button actuations are for the fine adjustment of the lamellas. A long button actuation starts the automatic run and drives the blind for the time SCPTdriveTime continuously into the direction close. The automatic run can be stopped by a renewed button actuation.

SNVT Type: SNVT_setting

Close blind	nvoSetting.function	= UCPTsunblindDOWN;
stop blind	nvoSetting.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Shutter

Shutter UP

In the configuration mode "Shutter UP" only the nvoSetting variables are changed and sent. Short button actuation starts the automatic run and drives the shutter continuously in the direction open for the time SCPTdriveTime. The automatic run can be stopped by a renewed button actuation. By a long button actuation the position of the shutter can be individually adjusted.

Switch Object

SNVT Type: SNVT_setting		
Open blind	nvoSetting.function	= UCPTsunblindUP;
Stop blind	nvoSetting.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Shutter UP

In the configuration mode "shutter DOWN" only the nvoSetting variables are changed and sent. Short button actuation starts the automatic run and drives the shutter continuously into the direction close for the time SCPTdriveTime. The automatic run can be stoped by a renewed button actuation. By a long button actuation the position of the shutter can be adjusted individually.

SNVT Type: SNVT_setting		
Close shutter	nvoSetting.function	= UCPTsunblindDOWN;
Stop shutter	nvoSetting.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

4.3 Configuration Parameters Switch Object:

SCPTmaxOut

SCPT Index: 93, SNVT_lev_cont

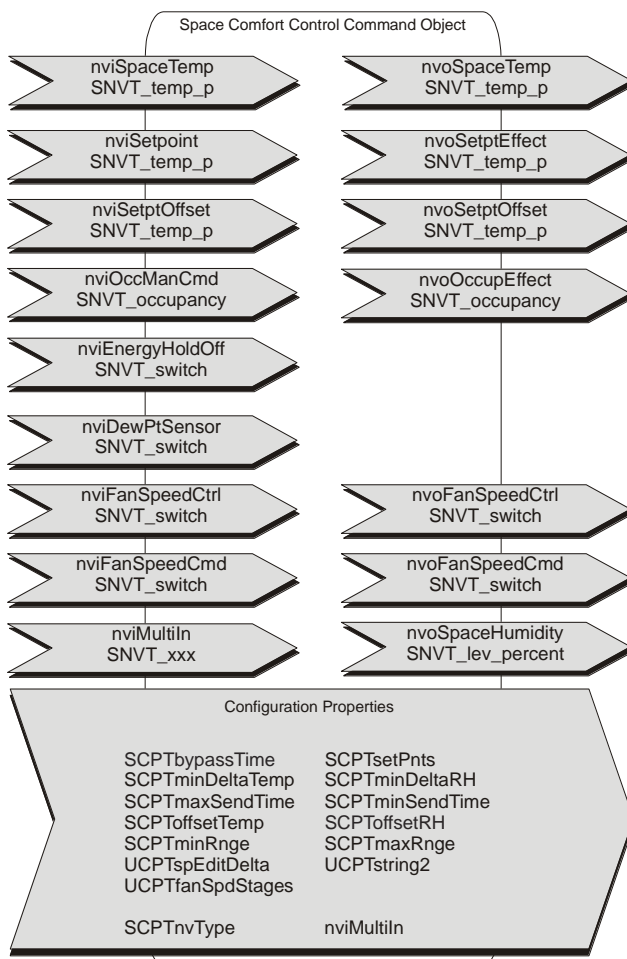
Function: Configuration property to limitate the Value of the Output Variable nvoSwitch.value.
(Preset value: 100 %)

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. This configuration property stimulates the interval time after which the output variables are sent. By means of input values =0, the heartbeat function is deactivated.
(Preset value: 0 s)

5 Space Comfort Control Command Object



The Object includes the functions temperature measuring, setpoint control, occupancy control and fan coil stage control.

Set point adjustment: The set point temperature can be increased/ lowered in the range of SCPTminRange and SCPTmaxRnge via the menu keys. Output of the offset value is made by nvoSetptOffset.

The effective set point (basic set point) nvoSetptEffect is calculated in reliance on the input variables to the room occupancy (nviOccManCmd and nviOccSensor) of the set point defaults SCPTsetPnts respectively nviSetpoint and the set point offset.

5.1 Input Variables Space Comfort Control Command Object

nviSpaceTemp

SNVT Type: SNVT_temp_p, Index 105

Function: Input variable for connection of an external LON temperature sensor. The external value is taken over, if the initialisation value 0x7FFF (=327,67 °C) was changed by a NV-Update after reset. As long as the initialisation value is not changed after reset, the internal temperature sensor remains active

nviMultiIn

SNVT Typ: changeable_type, i.e. the variable type can be configured via LON-installation tool e.g. the LonMaker. All 2 Byte-values can be shown. (default: SNVT_switch)

valid values: SNVT_switch, Index 95; SNVT_lux, Index 79; SNVT_lev_percent, Index 81; SNVT_ppm, Index 29; SNVT_press, Index 30 ...

Function: The input variable is shown in the display depending on the configuration. Displayable values from -3276,7 to +3276,8.

Parameter: With the parameter UCPTString2[0] the unit (3 symbols) and with UCPTString2[1] a 4 symbol text have to be defined for the value to display.

Space Comfort Control

nviOccManCmd

SNVT Typ: SNVT_occupancy, Index 109

Function: Input variable for default of the room occupancy. The current room occupancy determines the values of the control parameter „effective set point“ and „neutral zone“ and thus the set points for heating and cooling (see table 1). Initialisation value for both variables: OC_NUL
nviOccManCmd: default with GLT via: OC_OCCUPIED, OC_STANDBY, OC_UNOCCUPIED
Via the configuration property *UCPTgeneralCPI* the behaviour of the device can be determined if nviOccManCmd = OC_UNOCCUPIED is switched.

nviOccManCmd	Internal room occupation		room occupancy nvoOccupEffect	Setpoint Heat nvoSetptEffect (nvoUnitStatus.mode = HVAC_HEAT)	Setpoint Cool nvoSetptEffect (nvoUnitStatus.mode = HVAC_COOL)
OC_NUL	OC_NUL	>>>	OCCUPIED	SCPTsetPnts.occupied_heat + nviSetptOffset	SCPTsetPnts.occupied_cool + nviSetptOffset
OC_OCCUPIED	****	>>>		or nviSetptOffset + nviSetpoint - (SCPTsetPnts.occupied_cool - SCPTsetPnts.occupied_heat) / 2	or nviSetptOffset + nviSetpoint + (SCPTsetPnts.occupied_cool - SCPTsetPnts.occupied_heat) / 2
****	OC_OCCUPIED	>>>			
OC_STANDBY	OC_NUL OC_UNOCCUPIED	>>>	STANDBY	SCPTsetPnts.standby_heat + nviSetptOffset or nviSetptOffset + nviSetpoint - (SCPTsetPnts.standby_cool - SCPTsetPnts.standby_heat) / 2	SCPTsetPnts.standby_cool + nviSetptOffset or nviSetptOffset + nviSetpoint + (SCPTsetPnts.standby_cool - SCPTsetPnts.standby_heat) / 2
OC_UNOCCUPIED	OC_NUL OC_UNOCCUPIED	>>>	UNOCCUPIED	SCPTsetPnts.unoccupied_heat	SCPTsetPnts.unoccupied_cool

Tabelle 1: Control property depending on the room occupancy

nviFanSpeedCmd

SNVT Typ: SNVT_switch, Index 95

Function: Input variable for external default of the displayed and with *nvoFanSpeed* transmitted fan-stage setting. The value range is equal to the Output Variable *nvoFanSpeed*.

nviFanSpeedCtrl

SNVT Typ: SNVT_switch, Index 95

Function: The input variable nviFanSpeedCtrl enables the display of the current fan speed if the externally connected fan coil controller selects the fan speed autonomously by nviFanSpeedCmd 0,0 -1. Therefore, the output variable of the controller (e.g. nvoFanSpeedCmd) must be connected with the input variable nviFanSpeedCtrl.
Example: nviFanSpeedCmd = 0,0 -1 (Automatic mode) and nviFanSpeedCtrl = 33,0 1 => Display shows Automatic Stage 1 (assumed that the parameter “Display fan stage in auto mode” is activated). The output variable nvoFanSpeedCtrl outputs 33,0 1.

.nviSetpoint

SNVT Type: SNVT_temp_p, Index 105

Function: Input variable for default of the basic set point temperature. It is obligatory necessary to bind these network variables with a higher node. If no update is made for nviSetpoint, the initialisation value 0x7FFF (=327,67°C) is maintained and the values of the configuration properties SCPTsetPnts are used for the calculation of the effective set point (basic set point +

Space Comfort Control

Offset). If nviSetpoint receives an update with a valid set point, the effective set point is calculated by the value of the input variables.

nviSetptOffset

SNVT Type: SNVT_temp_p, Index 105

Function: Input variable for default of an offset value for the offset of the basic set point temperature in the mode OCCUPIED or STANDBY (see table 1).

nviEnergyHoldOff

SNVT Type: SNVT_switch, Index 95

Function: Input variable of e.g. window or door contact for activation of the energy-saving function. By nviEnergyHoldOff = 100.0 1 the function is activated and the control variables heating/cooling are reset to their minimum values. With an active energy-saving function the antifreeze function is switched on (see UCPTspAntiFreez). After deactivation of the energy-hold-off function the temperature control is restarted.

nviDewPtSensor

SNVT Type: SNVT_switch, Index 95

Function: Input variable for evaluation of a dew point detector in the operating mode cooling. By nviDewPtSensor = 100.0 1 the control variable cooling is reset to its minimum value. After deactivation of this function, the temperature control is started anew.

5.2 Output Variables Space Comfort Control Command Object

nvoSpaceTemp

SNVT Type: SNVT_temp_p, Index 105

Function: Output variable for measured temperature value. Measuring range 0 - 50°C, resolution 1/100 °C. Data output is made depending of SCPTmaxSendTime, and approx. 1,5s - 4,0s after reset.

nvoSetptEffect

SNVT Type: SNVT_temp_p, Index 105

Function: The output variable sends the set point used by the control algorithm. Output is depending on the operating mode of the controller:

nvoUnitStatus.mode = HVAC_HEAT ==> nvoSetptEffect = set point heating

nvoUnitStatus.mode = HVAC_Cool ==> nvoSetptEffect = set point cooling

The effective set point is calculated depending on nviSetpoint, nviOccManCmd, nviOccSensor, SCPTsetPnts and nviSetptOffset (see table 1). Data output is made depending on SCPTmaxSendTime, upon value change and 1,5s- 4s after reset.

nvoSetptOffset

SNVT Type: SNVT_temp_p, Index 105

Function: Output variable for set point correction, which can be prescribed by nviSetptOffset. Data output is made analogue to nvoSetptEffect.

nvoOccupEffect

SNVT Type: SNVT_occupancy, Index 109

Function: Output variable for effective room occupancy (see table 1). Data output is made depending on SCPTmaxSendTime, upon value change and 1,5s- 4s after reset.

nvoFanSpeedCtrl

SNVT Type: SNVT_switch, Index 95

Function: Output variable for adjusted fan speed. The number of the fan speed stages is adjusted by the configuration property UCPTfanSpdStages. The indication in the display shows the currently adjusted fan speed and whether the controller is in the automatic mode.

UCPTfanSpdStages = 1

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	100 %	1

UCPTfanSpdStages = 2

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	50 %	1
2	100 %	1

UCPTfanSpdStages = 3

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	33,0 %	1
2	66,5 %	1
3	100 %	1

Space Comfort Control

nvoFanSpeedCmd

SNVT Typ: SNVT_switch, Index 95

Function: Output Variable for the set fan stage and for combining several devices. The number of devices is adjustable with the configuration property UCPTfanSpdStages. The indication in the display shows the currently adjusted fan speed and whether the controller is in the automatic mode.

UCPTfanSpdStages = 1

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	100 %	1

UCPTfanSpdStages = 2

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	50 %	1
2	100 %	1

UCPTfanSpdStages = 3

Lüfterstufe	nvoFanSpeedCtrl .value	nvoFanSpeedCtrl .state
0	0 %	0
1	33,0 %	1
2	66,5 %	1
3	100 %	1

UCPTfanSpdStages = 11

Lüfterstufe	nvoFanSpeedCmd .value	nvoFanSpeedCmd .state
AUTO	0 %	-1
0	0 %	0
1	100 %	1

UCPTfanSpdStages = 12

Lüfterstufe	nvoFanSpeedCmd .value	nvoFanSpeedCmd .state
AUTO	0 %	-1
0	0 %	0
1	50 %	1
2	100 %	1

UCPTfanSpdStages = 13

Lüfterstufe	nvoFanSpeedCmd .value	nvoFanSpeedCmd .state
AUTO	0 %	-1
0	0 %	0
1	33,0 %	1
2	66,5 %	1
3	100 %	1

nvoSpaceHumidity

SNVT Typ: SNVT_levPercent, Index 95

Function: Output Variable for indication of relative humidity (only devices with humidity). Data output is made after a change of the value, depending on *SCPTmaxSendTime* and 1,5s-4s after Reset.

5.3 Configuration Property Space Comfort Control Command Object - General:

SCPTnvType

SCPT Index: 254, SNVT_nv_type

Es steht jeweils eine SCPTnvType für nvoMultiOut_1 und nvoMultiOut_2 zur Verfügung. Dieser Konfigurationsparameter spezifiziert den Typ der Netzwerkvariablen nvoMultiOut_1 bzw. nvoMultiOut_2. Sollte SCPTnvType nicht automatisch durch das Inbetriebnahmetool an den neuen Variablentyp von nvoMultiOut_1 / nvoMultiOut_2 angepasst werden, dann müssen die folgenden Einstellungen manuell eingetragen werden.

nvoMultiOut = SNVT_switch

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 95, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_setting

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 117, NVT_CAT_STRUCT, 4 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_lev_percent

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 81, NVT_CAT_SIGNED_LONG, 2 bytes, A=5, B=-3, C=0

nvoMultiOut = SNVT_lux

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 79, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_occupancy

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 109, NVT_CAT_ENUM, 1 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_scene

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 115, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_ppm

Space Comfort Control

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 29, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0

SCPTmaxSendTime

Index: 49, SNVT_time_sec

Function: The configuration property defines the interval time for the calculation of new control variables for the temperature control and the sending time of the output variable. By input values = 0, data output is deactivated. (Preset value: 30 s)

SCPTOffsetTemp

Index: 272, SNVT_temp_diff_p

Function: Offset for the temperature value. By this parameter a software calibration is possible.

SCPTminSendTime

Index: 52, SNVT_time_sec

Function: Stipulates the smallest update interval of the output variable nvoSpaceTemp. An update is made after expiration of „SCPTminSendTime“, if the temperature value of the output variable has changed by more than „SCPTminDeltaTemp“. By means of the input values = 0 the function is deactivated. (Preset value: 5,0 sec)

SCPTminDeltaTemp

Index: 64, SNVT_temp_p

Function: If the temperature has changed by the adjusted value „SCPTminDeltaTemp“ the new temperature value is transmitted. The function is depending on the adjustment of the property „SCPTminSendTime“. (Range >= 0 °C; preset value: 0,30 °C)

SCPTminDeltaRH

Index: 64, SNVT_lev_percent

Funktion: If the humidity has changed by the adjusted value „SCPTminDeltaTemp“ the new humidity value is transmitted. (Range >= 0 %; preset value: 3%)

UCPTstring2

Index: 2, SNVT_str_asc

Function: With this property the text for the unit (max. 3 ASCII signs) and the description (max. 4 ASCII signs) of the controller set point are set. These texts are displayed when the set point is faded-in.

SCPTbypassTime

SCPT Index: 34, SNVT_time_min

Function: Delay time in minutes. After expiration of SCPTbypassTime the Output Variable nvoOsOccup is set back to OC_UNOCCUPIED. (Preset value: 0 min). It should be noted that with a value > 0 every trigger of the presence button restarts the bypass time. To use the occupancy toggle function the value should be set to 0.

SCPToffsetRH

Index: 69, SNVT_lev_percent

Function: Compensate deviations due to voltage-dependent self-heating of the electronics and temperature dynamic of the wall

5.4 Configuration Property Space Comfort Control Command Object - Set Point:

SCPTsetPnts

Index: 60, SNVT_temp_setpt

Function: Configuration property for default of the set points for heating and cooling depending on the room occupancy. By nviSetpoint the values can be overwritten by nvoOccupEffect = OCCUPIED respectively STANDBY. When having nvoOccupEffect = UNOCCUPIED, nviSetpoint is not considered, however.

Preset values: .occupied_heat 21,00 °C .occupied_cool 23,00 °C
.standby_heat 19,00 °C .standby_cool 25,00 °C
.unoccupied_heat 16,00 °C .unoccupied_cool 28,00 °C

Space Comfort Control

UCPTspEditDelta

Index: 9, SNVT_temp_p

Function: Configuration property for definition of temperature jumps via the operating keys. (Preset value: 0,5K, i.e. the set point is changed by 0,5K with any button actuation).

SCPTminRnge, SCPTmaxRnge

Index: 23, SNVT_temp_p, 20, SNVT_temp_p

Function: Configuration parameter for the value range of the adjusted set point correction, i.e. the prescribed set point can be changed by the user by means of the value +/- SCPTmaxRnge / SCPTminRnge. (Preset value: 3,0 K)

5.5 Konfigurationsparameter Space Comfort Controller Object - Fan Coil Unit:

UCPTfanSpdStages

Index: 13, SNVT_count

Function: Configuration property for default of fan stages.
(Preset value: 3 ==> AUTO, OFF, Stage 1, Stage 2, Stage 3)

6 General Remarks for Installation:

6.1 Installation by Learning Button

Step 1: Register device type in UCPTdeviceType

Step 2: Adjust the SNVT-type of nvoMultiOut (SNVT_switch, SNVT_setting, SNVT_lux, SNVT_lev_percent, SNVT_occupancy)

Step 3: Check adjustments of SCPTnvType

Step 4: Set the requested sensor object in the learn mode by means of nviLearn_Sensor (see below, Node Object)

Step 5: Actuate learn button on the sensor. ==> All bits of nviLearn_Sensor are set back to „0“.

Step 6: Contrary to the manual registration, where the ID is directly written into the device and the LNSdatabase, it is only possible to store the sensor ID in the SRC receiving module upon installation by the learn button. To check the ID there are two ways:

1. In order to take over the IDs into the database, the receiver must be recommissioned by the adjustment „Current Values in Device“ or
2. The sensor ID which was latest learned in is stored in nvoLearnedID, so register nvoLearnedID in UCPTenoceanID

Example LonMaker:

The screenshot shows a configuration window with two main sections. The left section, titled 'State', contains four radio buttons: 'Default' (unselected), 'Offline' (unselected), 'Online' (selected), and 'Disable' (unselected). The right section, titled 'Source of Configuration Property Values', contains three radio buttons: 'Current values in database' (unselected), 'Default values' (unselected), and 'Current values in device' (selected).

6.2 Clearing of a Sensor

If the 32-Bit Sensor-ID 0,0,0,0 is entered into UCPTenoceanID, the sensor can be cleared in the Sensor-Object.

6.3 Device Types UCPTdeviceType

The following devices are available:

Universal Temperature sensor – Profile 63 Type xx ORG 7

Temperature range °C	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Universal Temperature range via SCPTminRnge and SCPTmaxRnge	7		

Temperature Sensor without operating elements – Profile A5-02-xx

Temperature range in °C	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Temperature sensor measuring range 40 K			
-40 – 0	2017	A5-02-01	
-30 – 10	2027	A5-02-02	
-20 – 20	2037	A5-02-03	
-10 – 30	2047	A5-02-04	
0 – 40	2057	A5-02-05	
10 – 50	2067	A5-02-06	
20 – 60	2077	A5-02-07	
30 – 70	2087	A5-02-08	
40 – 80	2097	A5-02-09	
50 – 90	2107	A5-02-0A	
60 – 100	2117	A5-02-0B	
Temperature sensor measuring range 80 K			
-60 – 20	2167	A5-02-10	
-50 – 30	2177	A5-02-11	
-40 – 40	2187	A5-02-12	
-30 – 50	2197	A5-02-13	
-20 – 60	2207	A5-02-14	
-10 – 70	2217	A5-02-15	
0 – 80	2227	A5-02-16	
10 – 90	2237	A5-02-17	
20 – 100	2247	A5-02-18	
30 – 110	2257	A5-02-19	
40 – 120	2267	A5-02-1A	
50 – 130	2277	A5-02-1B	

Space Comfort Control

Temperature Sensor with operating elements– Profile A5-10-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Room operating panel			
Set point, fan, button (PST)	16017	A5-10-01	
Set point, fan, slide switch (PS MS)	16027	A5-10-02	
Set point(P)	16037	A5-10-03	
Set point, fan, (PS)	16047	A5-10-04	
Set point, button, (PT)	16057	A5-10-05	
Set point, slide switch (P MS)	16067	A5-10-06	
Fan (S)	16077	A5-10-07	
Fan, button (ST)	16087	A5-10-08	
Fan, slide switch (S MS)	16097	A5-10-09	
Room operating panel with humidity			
Set point, button (PT)	16167	A5-10-10	
Set point, slide switch (P MS)	16177	A5-10-11	
Set point (P)	16187	A5-10-12	
Button (T)	16197	A5-10-13	
Slide switch (MS)	16207	A5-10-14	

Humidity Sensor without operating elements – Profile A5-04-xx

Temperature range in °C	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Humidity and temperature sensor measuring range 40 K 0 – 40 °C			
0 – 40	4017	A5-04-01	

Motion Sensor– Profile A5-07-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Motion sensor			
Motion sensor (SR PIR 360°)	7017	A5-07-01	

Light and Motion– Profile A5-08-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Light and motion detector			
Light and motion detector (SR MDS)	8017	A5-08-01	

Gas– Profile A5-09-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
CO2 detector			
CO2 detector (SR04 CO2)	9047	A5-09-04	

Wireless actuator – Profile A5-20-xx

Device	UCPTdeviceType - Typ	EnOcean Profiles (EEP)	Equipment
Actuator	32017	A5-20-01	

Window Contact – ORG 6

Device	UCPTdeviceType - Type
SRW01	
Window contact (SRW01)	6

Universal Switch – ORG 5

Device	UCPTdeviceType - Type
Universal switch	5

Window Handle – ORG 5

Device	UCPTdeviceType - Type
Window handle Opened/Closed (SRG01)	502
Window handle opened/tilted/closed (SRG01)	503

KeyCard – ORG 5

Device	UCPTdeviceType - Typ
Room occupancy (SR-KCS)	505

6.4 Parameterisation of Button Functions with UCPTdiConfig

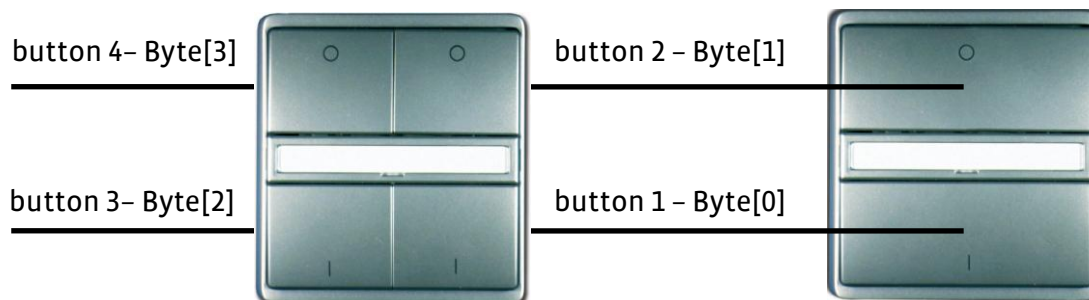
For parameterisation of the tactile sensors, the configuration property *UCPTdiConfig.Byte[0...3]* in the Objects is used.

In UCPTdiConfig the functions of the individual buttons are parameterised, whereas:

- UCPTdiConfig.Byte[0] defines the function of button 1
- UCPTdiConfig.Byte[1] defines the function of button 2
- UCPTdiConfig.Byte[2] defines the function of button 3
- UCPTdiConfig.Byte[3] defines the function of button 4

6.5 Tactile Sensor

A wireless switch / key can be allocated to each object. The button functions of a tactile sensor can be adjusted via the configuration property UCPTdiConfig in the NodeObject. UCPTdiConfig.Byte[0...3] allocates a function to each button.



Example:

Tactile sensor in Sensor-Object 3:

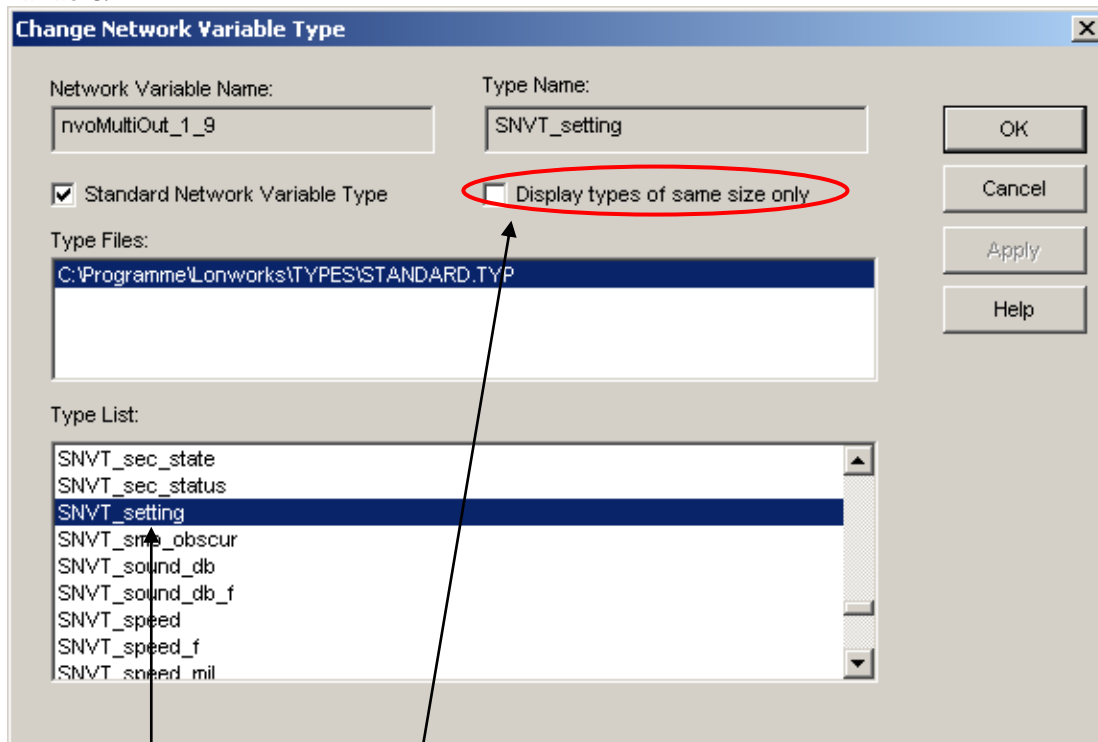
- Button 1 Light ON -> UCPTdiConfig.Byte[0] = 0x05
- Button 2 Light OFF -> UCPTdiConfig.Byte[1] = 0x07
- For this a type change from nvoMultiOut_1 to SNVT_switch must be made.
- Button 3 button Shutter UP -> UCPTdiConfig.Byte[2] = 0x32
- Button 4 button Shutter DOWN -> UCPTdiConfig.Byte[3] = 0x33

For this a type change from nvoMultiOut_2 to SNVT_setting must be made.

Space Comfort Control

6.6 Type Change from nvoMultiOut_1 / nvoMultiOut_2 and nviMultiIn_1 / nviMultiIn_2

Depending on the function of the sensor / transmitter object a type change of the output variables is necessary. When using the LONMaker the network variable to be changed can be called by a right click on "Change Type". During a type change, it is recommendable to deactivate the "Monitoring" of the network variable.



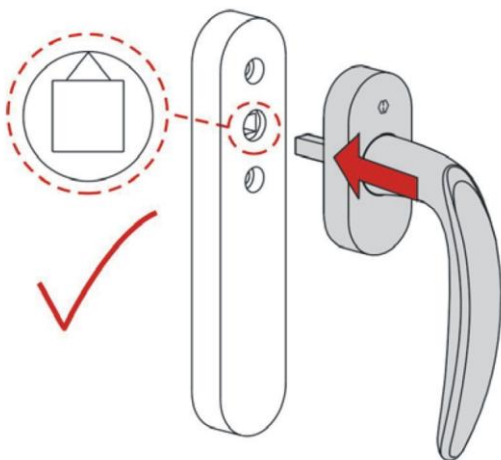
Picture 6-1: Type Change

Select SNVT Type

Deactivate the check mark

6.7 SecuSignal® Window Handle

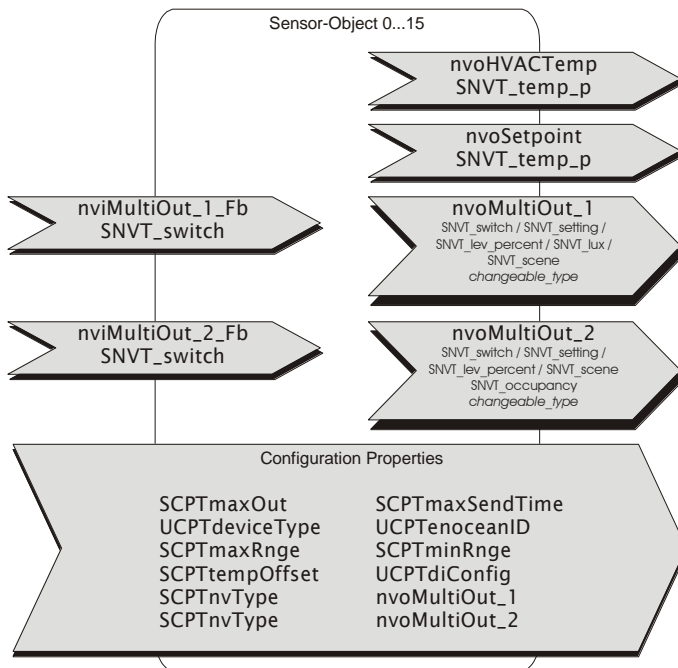
As for the SecuSignal® window handle a proper and accurate installation is of paramount importance. (Please also see the SecuSignal® data sheet)



6.8 Sensors

For other device specific settings and parameters such as temperature range, jumper for transmission time etc., please see the corresponding data sheets.

7 Sensor-Objects



Six identical objects for the detection of EnOcean wireless sensors as well as for the detection of EnOcean wireless keys / switches.

The temperature is output via nvoHVACTemp and the set point by nvoSetpoint.

The network variables nvoMultiOut_1 and nvoMultiOut_2 are changeable and can be adapted to the respective function by a SNVT type change.

7.1.1 Input Variables Sensor-Object:

nviMultiOut_1_Fb, nviMultiOut_2_Fb

SNVT Type: SNVT_switch, Index 95

Function: Input variable for the current status of the lighting groups controlled by nvoMultiOut_1_Fb respectively nvoMultiOut_2_Fb.

7.1.2 Output Variables Sensor-Object:

nvoHVACTemp

SNVT Type: SNVT_temp_p, Index 105

Function: Output variable for the measured temperature value (resolution 1/100 °C). Data output is made depending on the configuration property SCPTmaxSendTime and upon receipt of a new sensor telegram.

nvoSetpoint

SNVT Type: SNVT_temp_p, Index 105

Function: Output variable for set point correction respectively set point temperature, that can be adjusted by the set point adjuster. As a standard, the value range is lying between -3 and +3 K and can be adjusted by UCPTspMinValue and UCPTspMinValue. Data output is made analogue to nvoHVACTemp.

Space Comfort Control

nvoMultiOut_1

SNVT Type: changeable_type, i.e. the variable type can be set via a LON installation tool e.g. the LonMaker . (default: SNVT_setting)

Valid values: SNVT_switch, Index 95; SNVT_setting, Index 117; SNVT_lev_percent, Index 81; SNVT_lux, Index 79; SNVT_occupancy, Index 109; SNVT_scene, Index 115

Function: Depending on the configuration, the output variable can either transmit relative humidity, the position of the rotary switch for fan stage adjustment, the light intensity, the status of the digital input module, the status of a window (opened/closed) and functions for switching/dimming/blind.

Fan Stage

Type: SR04..S (with rotary switch for fan stage adjustment)

- SNVT Type: SNVT_switch
- UCPTdeviceType 7

UCPTfanSpdStages = 1

Fan Stage	nvoMultiOut_1	
	.value	.state
AUTO	0 %	-1
0	0 %	0
1	100 %	1

UCPTfanSpdStages = 2

Fan Stage	nvoMultiOut_1	
	.value	.state
AUTO	0 %	-1
0	0 %	0
1	50 %	1
2	100 %	1

UCPTfanSpdStages = 3

Fan Stage	nvoMultiOut_1	
	.value	.state
AUTO	0 %	-1
0	0 %	0
1	33,0 %	1
2	66,5 %	1
3	100 %	1

UCPTfanSpdStages = 11

Fan Stage	nvoMultiOut_1	
	.value	.state
0	0 %	0
1	100 %	1

UCPTfanSpdStages = 12

Fan Stage	nvoMultiOut_1	
	.value	.state
0	0 %	0
1	50 %	1
2	100 %	1

UCPTfanSpdStages = 13

Fan Stage	nvoMultiOut_1	
	.value	.state
0	0 %	0
1	33,0 %	1
2	66,5 %	1
3	100 %	1

Humidity

Type: SR04..rH (combi sensor with relative humidity)

Type: SR04..rH CO2 (combi sensor with relative humidity)

- SNVT Type: SNVT_lev_percent
- nvoMultiOut_1 = 0.0 ... 100.0 %

Light Sensor

Type: SR MDS (multi sensor, light sensor)

- SNVT Type: SNVT_lux
- nvoMultiOut_1 = 0 ... 512 lx

Motion Sensor

Type: SR-PIR 360°

- SNVT Type: SNVT_switch
- Motion: nvoMultiOut_1 = 100.0 1
- No motion: nvoMultiOut_1 = 0.0 0

Space Comfort Control
Window Contact

Type: SRW01

- SNVT Type: SNVT_switch
- UCPTdeviceType 6
- Window OPENED ==> nvoMultiOut_1 = 100.0 1
- Window CLOSED ==> nvoMultiOut_1 = 0.0 0

Type: Secu-Signal - Window handle

- SNVT Type: SNVT_switch
- UCPTdeviceType 502
- Window OPENED ==> nvoMultiOut_1 = 100.0 1
- Window CLOSED ==> nvoMultiOut_1 = 0.0 0
- UCPTdeviceType 503
- Window OPENED ==> nvoMultiOut_1 = 100.0 1
- Window tilted ==> nvoMultiOut_1 = 50.0 1
- Window CLOSED ==> nvoMultiOut_1 = 0.0 0

Switch

Type: Easyfit / EasySens

- SNVT Type: SNVT_scene, SNVT_switch or SNVT_setting depending on function
- UCPTdeviceType 5

Actual Value

Type: Actuator (07-20-01, A5-20-01)

- SNVT Type: SNVT_lev_percent
- UCPTdeviceType 32017
- nvoMultiOut_1 = 0.0 ... 100.0 %

Space Comfort Control

nvoMultiOut_2

SNVT Type: changeable_type, i.e. the variable type can be set via a LON installation tool, e.g the LonMaker.
(default: SNVT_setting)

Valid values: SNVT_switch, Index 95; SNVT_setting, Index 117; SNVT_occupancy, Index 109; SNVT_ppm, Index 29; SNVT_scene, Index 115

Function: Depending on the configuration, the output variable can either transmit the presence key or the functions for switching/dimming/blind.

CO2 Sensor

Type: SR04 CO2

- SNVT Type: SNVT_ppm
- CO2: nvoMultiOut_2

Presence

Type: SR04..T (with button respectively slide switch)

- UCPTdeviceType 7, 16017...16327

Typ: SR-KCS (KeyCard)

- UCPTdeviceType 505

SNVT Typ: SNVT_switch

- By nviMultiOut_2_FB the current status of the controlled lighting group can be transferred.
- By SCPTbypassTime = 0 only the value 100.0 1 is sent with button actuation. A reset to the value 0.0 0 is not made.
- By SCPTbypassTime = 1 the status of the contact is output. The output variable is reset to 0.0 0 without any time delay by opening the contact.
- By SCPTbypassTime = 2 each button actuation leads to a switching-over of the lighting, i.e. between ON and OFF
- By SCPTbypassTime >= 3 the overwork function is activated. By button actuation the output variable receives the value 100.0 1. After expiration of the delay time it is reset to the value 0.0 0. Each button actuation restarts the timer.

SNVT Type: SNVT_occupancy

- By SCPTbypassTime = 0 only the value OC_OCCUPIED is sent with button actuation. A reset to the value OC_UNOCCUPIED is not made.
- BY SCPTbypassTime = 1 the status of the contact is output. The output variable is reset to the value OC_UNOCCUPIED without any time delay by opening the contact.
- By SCPTbypassTime >= 2 the overwork function is activated. By button actuation the output variable receives the value OC_OCCUPIED. After expiration of the delay time it is set back to the value OC_UNOCCUPIED. Each button actuation restarts the timer.

Motion sensors

Type: SR-PIR 360°

- SNVT Type: SNVT_occupancy
- Motion: nvoMultiOut_2 = OC_OCCUPIED
- No motion: nvoMultiOut_2 = OC_UNOCCUPIED

Type: SR MDS

- SNVT Type: SNVT_occupancy
- Motion: nvoMultiOut_2 = OC_OCCUPIED
- No motion: nvoMultiOut_2 = OC_UNOCCUPIED

Space Comfort Control
Switch

Type: Easyfit / EasySens

- SNVT Typ: SNVT_scene, SNVT_switch or SNVT_setting depending on the function
- UCPTdeviceType 5

Button Evaluation nvoMultiOut_1 / nvoMultiOut_2

Switch/ Button

Button pressed/ not pressed

UCPTdiConfig.Byte[0...3] = 01_{hex} / 02_{hex}

SNVT Type: SNVT_switch

Button pressed	nvoMultiOut_1/2.value	= SCPTmaxOut
	nvoMultiOut_1/2.state	= 1
Button not pressed	nvoMultiOut_1/2.value	= 0
	nvoMultiOut_1/2.state	= 0

SNVT Type: SNVT_setting

Button pressed	nvoMultiOut_1/2.function	= SET_ON;
	nvoMultiOut_1/2.setting	= SCPTmaxOut;
Button not pressed	nvoMultiOut_1/2.function	= SET_OFF;
	nvoMultiOut_1/2.setting	= 0;

Lighting Toggle

UCPTdiConfig.Byte[0...3] = 03_{hex} / 04_{hex}

Each button actuation results in a toggling of the lighting, i.e. between ON and OFF

SNVT Type: SNVT_switch

Lighting ON	nvoMultiOut_1/2.value	= SCPTmaxOut
	nvoMultiOut_1/2.state	= 1
Lighting OFF	nvoMultiOut_1/2.value	= 0
	nvoMultiOut_1/2.state	= 0

SNVT Type: SNVT_setting

Lighting ON	nvoMultiOut_1/2.function	= SET_ON;
	nvoMultiOut_1/2.setting	= SCPTmaxOut;
Lighting OFF	nvoMultiOut_1/2.function	= SET_OFF;
	nvoMultiOut_1/2.setting	= 0;

Lighting ON

UCPTdiConfig.Byte[0...3] = 05_{hex} / 06_{hex}

Each button actuation results in a toggling of the lighting

SNVT Type: SNVT_switch

Lighting ON	nvoMultiOut_1/2.value	= SCPTmaxOut
	nvoMultiOut_1/2.state	= 1

SNVT Type: SNVT_setting

Lighting ON	nvoMultiOut_1/2.function	= SET_ON;
	nvoMultiOut_1/2.setting	= SCPTmaxOut;

Lighting OFF

UCPTdiConfig.Byte[0...3] = 07_{hex} / 08_{hex}

Each button actuation results in a switching-off of the lighting

SNVT Type: SNVT_switch

Lighting OFF	nvoMultiOut_1/2.value	= 0
	nvoMultiOut_1/2.state	= 0

SNVT Type: SNVT_setting

Lighting OFF	nvoMultiOut_1/2.function	= SET_OFF;
	nvoMultiOut_1/2.setting	= 0;

Space Comfort Control
Dimming

Lighting: Toggle by Dimming, Switch-ON Value = Last Switch-ON Value

UCPTdiConfig.Byte[0...3] = 12_{hex} / 13_{hex}

Function as with 10_{hex} / 11_{hex}, but with the difference, that not the value SCPTmaxOut but the last turn-on value is taken over. The smallest turn-on value is limited to 20%.

Lighting ON by Brighter Dimming, Switch-ON Value = last ON-value

UCPTdiConfig.Byte[0...3] = 16_{hex} / 17_{hex}

If the lighting is switched-off, a button actuation results in an immediate switching-on of the lighting. By longer button actuations the function "dim brighter" is activated, i.e. based on the current light status the .value - value of the switch variable is reduced in percent steps of UCPTstepValue as long as the maximum value SCPTmaxOut is reached. The sending interval in the mode dimming is adjusted by SCPTminSendTime and is preadjusted to approx. 300ms.

SNVT Type: SNVT_switch

Switching-on of lighting nvoMultiOut_1/2.value = last ON-value

nvoMultiOut_1/2.state = 1

Brighter dimming of lighting nvoMultiOut_1/2.value = last value + UCPTstepValue

nvoMultiOut_1/2.state = 1

SNVT Type: SNVT_setting

Switching-on of lighting nvoMultiOut_1/2.function = SET_ON;

nvoMultiOut_1/2.setting = last ON-value;

Brighter dimming of lighting nvoMultiOut_1/2.function = SET_UP;

nvoMultiOut_1/2.setting = UCPTstepValue;

Lighting OFF by Darker Dimming

UCPTdiConfig.Byte[0...3] = 18_{hex} / 19_{hex}

If the lighting is turned-on, a short button actuation leads to an immediate switching-off of the lighting. By longer button actuations the function "dim darker" is activated, i.e. based on the current lighting status the .value -value of the switch variables is reduced in percent steps of UCPTstepValue as long as the value 0 is reached. The sending interval in the mode dimming is adjusted by SCPTminSendTime and amounts to approx. 300ms preset.

SNVT Type: SNVT_switch

Switching-off of lighting nvoMultiOut_1/2.value = 0

nvoMultiOut_1/2.state = 0

Darker dimming of lighting nvoMultiOut_1/2.value= last value - UCPTstepValue

nvoMultiOut_1/2.state = 1

SNVT Type: SNVT_setting

Switching-off of lightning nvoMultiOut_1/2.function = SET_OFF;

nvoMultiOut_1/2.setting = 0;

Darker dimming of lightning nvoMultiOut_1/2.function = SET_DOWN;

nvoMultiOut_1/2.setting = UCPTstepValue;

Blind

Blind UP

UCPTdiConfig.Byte[0...3] = 20_{hex} / 22_{hex}

In the configuration mode "blind UP" only the nvoSetting variables are changed and sent. Short button actuations are used for a fine adjustment of the lamellas. A long button acutation starts the automatic run and drives the blind continuously in the direction open for the time SCPTdriveTime. The automatic run can be stopped by a renewed button actuation.

SNVT Type: SNVT_setting

Space Comfort Control

Open blind	nvoMultiOut_1/2.function	= UCPTsunblindUP;
Stop blind	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Blind DOWN

UCPTdiConfig.Byte[0...3] = 21_{hex} / 23_{hex}

In the configuration mode "blind DOWN" only the nvoSetting variables are changed and sent. Short button actuations are for the fine adjustment of the lamellas. A long button actuation starts the automatic run and drives the blind for the time SCPTdriveTime continuously into the direction close. The automatic run can be stopped by a renewed button actuation.

SNVT Type: SNVT_setting

Close blind	nvoMultiOut_1/2.function	= UCPTsunblindDOWN;
stop blind	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Shutter

Shutter UP

UCPTdiConfig.Byte[0...3] = 30_{hex} / 32_{hex}

In the configuration mode "Shutter UP" only the nvoSetting variables are changed and sent. Short button actuation starts the automatic run and drives the shutter continuously in the direction open for the time SCPTdriveTime. The automatic run can be stopped by a renewed button actuation. By a long button actuation the position of the shutter can be individually adjusted.

SNVT Type: SNVT_setting

Open blind	nvoMultiOut_1/2.function	= UCPTsunblindUP;
Stop blind	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Shutter UP

UCPTdiConfig.Byte[0...3] = 31_{hex} / 33_{hex}

In the configuration mode "shutter DOWN" only the nvoSetting variables are changed and sent. Short button actuation starts the automatic run and drives the shutter continuously into the direction close for the time SCPTdriveTime. The automatic run can be stopped by a renewed button actuation. By a long button actuation the position of the shutter can be adjusted individually.

SNVT Type: SNVT_setting

Close shutter	nvoMultiOut_1/2.function	= UCPTsunblindDOWN;
Stop shutter	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

With a delay of 500ms the command UCPTsunblindIDLE for idle mode is sent after the command UCPTsunblindSTOP if UCPTsunblindIDLE is unequal to UCPTsunblindSTOP.

Automatic

UCPTdiConfig.Byte[0...3] = 60_{hex} / 61_{hex}

The actuation of an "Automatic-Button" switches the variable nvoMultiOut_1/2 to the value 0,0-1. Thus, e.g. a light controller can be reset in the automatic mode after external override.

SNVT Type: SNVT_switch

7.1.3 Configuration Property Sensor-Object:

SCPTnvType

SCPT Index: 254, SNVT_nv_type

There is one SCPTnvType for nvoMultiOut_1 and nvoMultiOut_2 each. The configuration property specifies the type of the network variable nvoMultiOut_1 respectively nvoMultiOut_2. If SCPTnvType is not adapted automatically to the new variable type of nvoMultiOut_1 / nvoMultiOut_2 by the installation tool, the following settings must be entered:

nvoMultiOut = SNVT_switch

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 95, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_setting

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 117, NVT_CAT_STRUCT, 4 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_lev_percent

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 81, NVT_CAT_SIGNED_LONG, 2 bytes, A=5, B=-3, C=0

nvoMultiOut = SNVT_lux

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 79, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_occupancy

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 109, NVT_CAT_ENUM, 1 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_scene

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 115, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0

nvoMultiOut = SNVT_ppm

=> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 29, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0

SCPTtempOffset

SCPT Index: 227, SNVT_temp_p

Function: Offset for the temperature value. By means of this parameter a software calibration is possible.

SCPTminRnge, SCPTmaxRnge

ONLY necessary for universal sensor UCPTdeviceType 7! As for other types, the measuring range of the respective profile is used. See 3.5. device type

SCPT Index: 23, 20, SNVT_temp_p

Function: The properties are for the adjustment of different temperature ranges of SR04..- and SR65.. - sensors. The measuring range is found in the respective data sheet.

- Standard measuring range SR04: 0 to +40 °C

- Standard measuring range SR65: -20 to +60 °C

- Standard measuring range SR65 TF: -20 to +60 °C

- Standard measuring range SR65 AKF: +10 to +90 °C

- Standard measuring range SR65 VFG: +10 to +90 °C

(Preset value: SCPTminRnge = 0,00 °C and SCPTmaxRnge = 40,00 °C)

SCPTmaxOut

SCPT Index: 93, SNVT_lev_cont

Function: This configuration property determines the maximum output value of the variable nvoMultiOut.value. (Preset value: 100.0)

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. This configuration property stipulates the interval time after which the output variable is sent. By input values = 0, the heartbeat function is deactivated. (Preset value: 0,0 s)

UCPTdeviceType

UCPT Index: 42, SNVT_count

Function: By UCPTdeviceType the different device types (SR04.../SR65... and SRW01) are selected. See 3.5 device type **Device Types UCPTdeviceType** (Preset range: 7, i.e. universal sensor)

Space Comfort Control

UCPTenoceanID

UCPT Index: 39, UNVT_str_hex4

Function: The parameter UCPTenoceanID allocates a special sensor to each object, whereas the sensor ID can either be entered manually or read automatically via the learn button on the sensor. Display format of 32-Bit Sensor-ID in the browser in hex: ID-Byte3, ID-Byte2, ID-Byte1, ID-Byte0

UCPTdiConfig

UCPT Index: 44, typedef struct {unsigned short Byte[4]} UNVT_str_hex4

Function: This configuration property determines the button function and their allocation to the output variables. UCPTdiConfig is fix allocated to the tactile sensor in the Sensor-Object. For the keys/ wireless switches -> the functions in the Sensor-Objects UCPTdeviceType must be set to 5.

UCPTdiConfig .Byte[0]	configured	Function of button 1
UCPTdiConfig .Byte[1]	configured	Function of button 2
UCPTdiConfig .Byte[2]	configured	Function of button 3
UCPTdiConfig .Byte[3]	configured	Function of button 4

No function 0x00

UCPTdiConfig, Configuration of buttons	
Byte[0...3]	button 1...4 -function
No Function	
0x00	not used

Switching functions 0x01 – 0x08

UCPTdiConfig, Configuration of buttons		
Byte[0...3]	Button 1...4 - Function	SNVT-Type
Switch		
0x01	pressed / not pressed / nvoMultiOut_1	SNVT_switch SNVT_setting
0x02	pressed / not pressed / nvoMultiOut_2	SNVT_switch SNVT_setting
0x03	Light Toggle / nvoMultiOut_1	SNVT_switch SNVT_setting
0x04	Light Toggle / nvoMultiOut_2	SNVT_switch SNVT_setting
0x05	Light only ON nvoMultiOut_1	SNVT_switch SNVT_setting
0x06	Light only ON nvoMultiOut_2	SNVT_switch SNVT_setting
0x07	Light only OFF nvoMultiOut_1	SNVT_switch SNVT_setting
0x08	Light only OFF nvoMultiOut_2	SNVT_switch SNVT_setting

0x10 – 0x19 Dim Function

UCPTdiConfig, Configuration of Buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Dimming		
0x12	Light Toggle by Dimming Switch-on value = last switch-on value nvoMultiOut_1	SNVT_switch
0x13	Light Toggle by Dimming Switch-on value = last switch-on value nvoMultiOut_2	SNVT_switch
0x16	Light only brighter by Dimming Switch-on value = last switch-on value nvoMultiOut_1	SNVT_switch SNVT_setting
0x17	Light only brighter by Dimming Einschaltwert = last switch-on value nvoMultiOut_2	SNVT_switch SNVT_setting
0x18	Light only darker by Dimming nvoMultiOut_1	SNVT_switch SNVT_setting
0x19	Light only darker by Dimming nvoMultiOut_2	SNVT_switch SNVT_setting

Short button actuations result in a switching- on/off the lighting. By long button actuations, the light can be dimmed..

In theToggle-Mode the dimming direction (brighter or darker) is changed by a new button actuation.

0x20 – 0x23 Blind

UCPTdiConfig, Configuration of buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Blind		
0x20	Blind UP nvoMultiOut_1	SNVT_setting
0x21	Blind DOWN nvoMultiOut_1	SNVT_setting
0x22	Blind UP nvoMultiOut_2	SNVT_setting
0x23	Blind DOWN nvoMultiOut_2	SNVT_setting

Short button actuations result in a stop respectively change of the blind. By a long actuation the blind is set into the automatic run.

0x30 – 0x33 Shutters

UCPTdiConfig, Configuration of buttons		
Byte[0...3]	Buttons 1...4 -functions	SNVT-Type
Shutters		
0x30	Shutter UP nvoMultiOut_1	SNVT_setting
0x31	Shutter Down nvoMultiOut_1	SNVT_setting
0x32	Shutter UP nvoMultiOut_2	SNVT_setting
0x33	Shutter Down nvoMultiOut_2	SNVT_setting

The shutter is going down/up as long a button is pressed. By a short button actuation the shutter is set into the automatic run.

UCPTdiConfig, Configuration of Buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Automatic		
0x60	Command automatic (= 0.0 –1) nvoMultiOut_1	SNVT_switch
0x61	Command Automatic (= 0.0 –1) nvoMultiOut_2	SNVT_switch

By a short button actuation the output variable is set into the automatic mode.

Example:

Tactile sensor in Sensor-Object 1:

Button 1 Light ON -> UCPTdiConfig.Byte[0] = 0x05

Button 2 Light OFF -> UCPTdiConfig.Byte[1] = 0x07

For this, a type change from nvoMultiOut_1 to SNVT_switch must be made .

Button 3 Button blind UP -> UCPTdiConfig.Byte[2] = 0x22

Button 4 Button blind UP -> UCPTdiConfig.Byte[3] = 0x23

For this, a type change from nvoMultiOut_2 to SNVT_setting must be made .