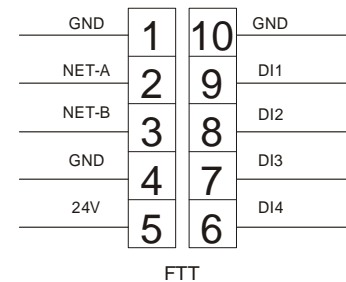


Software Description

Subject to technical alteration

Issue 26.05.11

WRF06LCD 2011



1 Overview

The application for the room operating panel WRF06LCD can take over the functions temperature detection, set point adjustment, presence button with overtime function and fan stage adjustment and functions for light and blind. The defaults of the LonMark® function profiles **8500 „Space Comfort Controller“**, **„3200 „Switch“** and **1060 „Occupancy Sensor“** are considered. For extended setting options, user defined configuration properties (UCPT) are used. The UCPTs used are defined in the **Thermokon Device Resource Files** from version 2.3 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 as well as by pressing a menu button on the top of the device. If the device was decommissioned, a voltage reset must be made if the device shall be commissioned again by pressing a menu button.

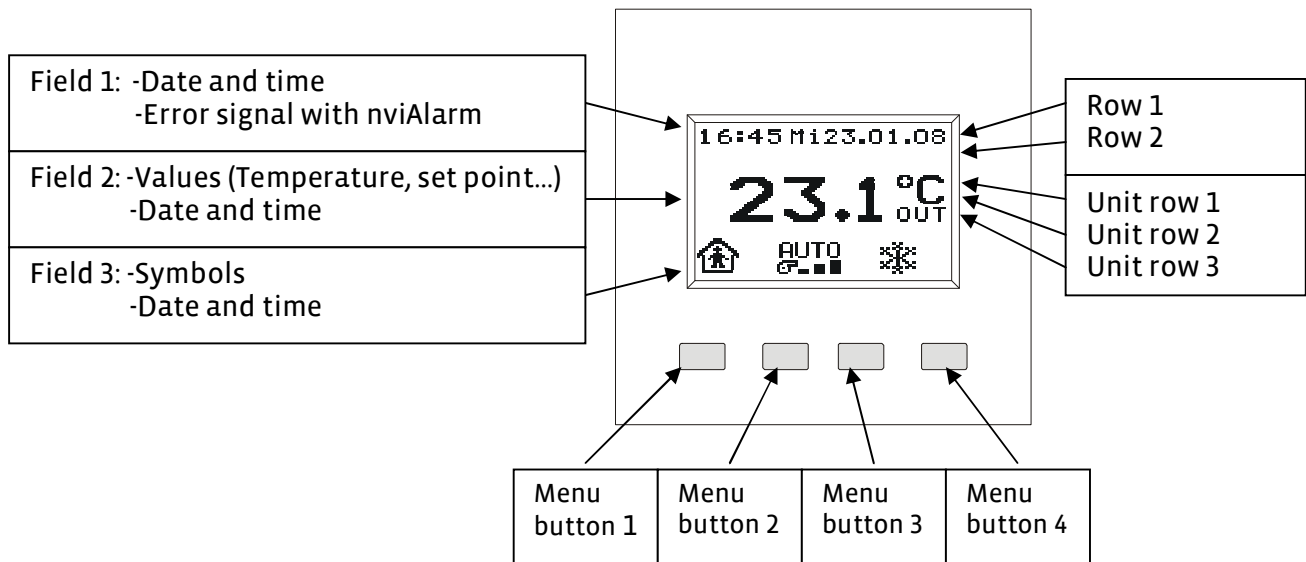
1.2 Inputs

The device has 4 dry inputs which are free for parametrizing e.g. for

- Switching light,
- Dim control
- Blind
- Dew point, energy hold off
- Room occupancy

1.3 Upper Part

The display is divided into 3 display areas: field 1 in the upper range, field 2 in the middle and field 3 in the bottom range.



The symbols displayed and their functions are as follows:

 Set point adjustment

 Error

 Heating

 Cooling

 Window "open"

 De point detector "active"

 Occupied (comfort) / Unoccupied (stand-by)

 Occupied (Extension of party time)

 Fan off

 Fan stage 1

 Fan stage 2

 Fan stage 3

 Fan off

 Fan stage 1

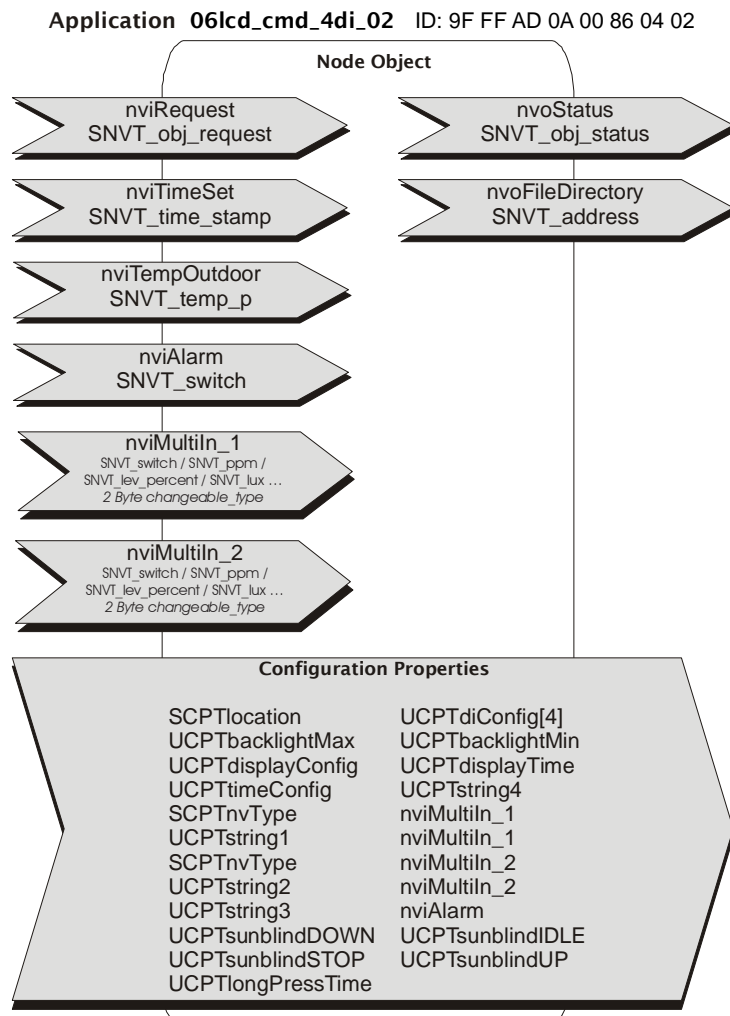
 Fan stage 2

 Fan stage 3

If menu buttons 1 and 4 are pressed at the same time for approx. 5 seconds, the calibration mode of the device is polled and an offset for the temperature of the device can be set.

2 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 Buttons:

By UCPTdiConfig the menu buttons 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. after a module reset or if no button actuation is made for more than 15 sec., the value UCPTbacklightMin determines the brightness of the LCD. By button actuation the stand-by mode is left and the value

UCPTbacklightMax determines the brightness of the background illumination.

2.1 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 LCD 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.

Node Object

nviTempOutdoor

SNVT Type: SNVT_temp_p, Index 105

Function: By this input variable the outdoor temperature can be prescribed additionally.

nviMultiIn_1; nviMultiIn_2

SNVT Type: Changeable_type, i.e. the type of variable can be set via a LON-installation tool, e.g. the LonMaker. All 2 byte values can be displayed.
(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: Depending on the configuration the input variable is indicated in the display.

Property: By the property UCPTString1 respectively UCPTString2 the unit is prescribed.

2.2 Output Variable Node Object:

nvoStatus

SNVT Type: SNVT_obj_status, Index 93

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

nvoFileDirectory

SNVT Type: SNVT_address, Index 114

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

2.3 Configuration Property Node Object:

SCPTlocation

SCPT Index: 17, SNVT_str_asc

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

UCPTtimeConfig

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

Function: 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.
UCPTtimeConfig[1].Byte[0...3] configures time and date in the main field of the display.
!! Please note: After a module reset the display for date and time is faded out. The time is only
!! faded in after receipt of a telegram via the input variable nviTimeSet. The time should be
!! synchronized by a LON system clock once a day.

UCPTtimeConfig.Byte[0] = 0 ==> **Weekday** faded out
UCPTtimeConfig.Byte[0] = 1 ==> **Weekday** English
UCPTtimeConfig.Byte[0] = 2 ==> **Weekday** German
UCPTtimeConfig.Byte[1] = 0 ==> **Date** faded out
UCPTtimeConfig.Byte[1] = 1 ==> **Date** English (JJ.MM.TT)
UCPTtimeConfig.Byte[1] = 2 ==> **Date** German (TT.MM.JJ)
UCPTtimeConfig.Byte[2] = 0 ==> **Time** faded out
UCPTtimeConfig.Byte[2] = 1 ==> **Time** 24-hours mode
UCPTtimeConfig.Byte[2] = 2 ==> **Time** 12-hours mode
Preset values: .Byte[0] = 2, .Byte[1] = 2, .Byte[2] = 1

UCPTtimeConfig[1].Byte[0] = 0 ==> **Date** English (MM.TT)
UCPTtimeConfig[1].Byte[0] = 1 ==> **Date** German (TT.MM)
UCPTtimeConfig[1].Byte[1] = 0 ==> **Time** 24-hours mode
UCPTtimeConfig[1].Byte[1] = 1 ==> **Time** 12-hours mode
Present values: .Byte[0] = 1, .Byte[1] = 0

Node Object

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

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 determines the background illumination of the LCD.

UCPTbacklightMax

UCPT Index: 47, SNVT_lev_cont

Function: If the stable state is left by actuating a button, the value UCPTbacklightMax determines the brightness of the background illumination of the LCD.

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.bit[0] = 1* ==> **Room temperature** displayed

UCPTdisplConfig.bit[0] = 0 ==> **Room temperature** not displayed

UCPTdisplConfig.bit[1] = 1 ==> **Outdoor temperature** displayed

UCPTdisplConfig.bit[1] = 0* ==> **Outdoor temperature** not displayed

UCPTdisplConfig.bit[2] = 1 ==> **Set temperature effective** displayed

UCPTdisplConfig.bit[2] = 0* ==> **Set temperature effective** not displayed

UCPTdisplConfig.bit[3] = 1 ==> **Set point offset** displayed

UCPTdisplConfig.bit[3] = 0* ==> **Set point offset** not displayed

If bit2 = 1 and bit3 = 1, then the effective set point temperature is displayed

UCPTdisplConfig.bit[4] = 1 ==> **nviMultiIn_1** displayed

UCPTdisplConfig.bit[4] = 0* ==> **nviMultiIn_1** not displayed

UCPTdisplConfig.bit[5] = 1 ==> **nviMultiIn_2** displayed

UCPTdisplConfig.bit[5] = 0* ==> **nviMultiIn_2** not displayed

UCPTdisplConfig.bit[6] = 1 ==> **Time** displayed

UCPTdisplConfig.bit[6] = 0* ==> **Time** not displayed

UCPTdisplConfig.bit[7] = 1 ==> **Date** displayed

UCPTdisplConfig.bit[7] = 0* ==> **Date** not displayed

UCPTdisplConfig.bit[8] = 1* ==> **°C** is the unit of measurement for the temperature display

UCPTdisplConfig.bit[8] = 0 ==> **°F** is the unit of measurement for the temperature display

UCPTdisplConfig.bit[9] = 1* ==> **Decimal point for temperature** displayed

UCPTdisplConfig.bit[9] = 0 ==> **Decimal point for temperature** not displayed

UCPTdisplConfig.bit[10] = 1* ==> **Decimal point for nviMultiIn_1** displayed

UCPTdisplConfig.bit[10] = 0 ==> **Decimal point for nviMultiIn_1** not displayed

UCPTdisplConfig.bit[11] = 1* ==> **Decimal point for nviMultiIn_2** displayed

UCPTdisplConfig.bit[11] = 0 ==> **Decimal point for nviMultiIn_2** not displayed

UCPTdisplConfig.bit[12] = 1* ==> **Symbols room occupancy** displayed (status of nvoEffectOccup)

UCPTdisplConfig.bit[12] = 0 ==> **Symbols room occupancy** not displayed

UCPTdisplConfig.bit[13] = 1 ==> **Symbols fan** displayed

UCPTdisplConfig.bit[13] = 0* ==> **Symbols fan** not displayed

UCPTdisplConfig.bit[14] = 1 ==> **Display set point offset** with set point adjustment

UCPTdisplConfig.bit[14] = 0* ==> **Set temperature effective** with set point adjustment

UCPTdisplConfig.bit[15] = 1 ==> **Russian letters** will be used in textfields

UCPTdisplConfig.bit[15] = 0* ==> **Latin letters** will be used in textfields

* = present values

Node Object

UCPTdiConfig[0]...[1]

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

Function: The following configuration properties determine the menu button functions and the digital input function.

The device has 4 Switch-Objects. They can be customized allocated to the buttons and the digital inputs, adjustable via UCPTdiConfig[1,3].Byte[x]. Furthermore, the functions a make or break contact for the digital inputs can be set via UCPTdiConfig[1,3].Byte[x].

UCPTdiConfig[0].Byte[0] configures **Menu button 1**UCPTdiConfig[0].Byte[1] configures **Menu button 2**UCPTdiConfig[0].Byte[2] configures **Menu button 3**UCPTdiConfig[0].Byte[3] configures **Menu button 4**UCPTdiConfig[1].Byte[0] configures allocation **Switch-Object for menu button 1**UCPTdiConfig[1].Byte[1] configures allocation **Switch-Object for menu button 2**UCPTdiConfig[1].Byte[2] configures allocation **Switch-Object for menu button 3**UCPTdiConfig[1].Byte[3] configures allocation **Switch-Object for menu button 4**UCPTdiConfig[2].Byte[0] configures **digital input 1**UCPTdiConfig[2].Byte[1] configures **digital input 2**UCPTdiConfig[2].Byte[2] configures **digital input 3**UCPTdiConfig[2].Byte[3] configures **digital input 4**UCPTdiConfig[3].Byte[0] configures allocation **Switch-Object / Make – Break Contact/ for DI 1**UCPTdiConfig[3].Byte[1] configures allocation **Switch-Object / Make – Break Contact/ for DI 2**UCPTdiConfig[3].Byte[2] configures allocation **Switch-Object Make – Break Contact/ for DI 3**UCPTdiConfig[3].Byte[3] configures allocation **Switch-Object / Make – Break Contact/ for DI 4**

Preset values:

[0].Byte[0] = 0x01, [0].Byte[1] = 0x02, [0].Byte[2] = 0x21, [0].Byte[3] = 0x00
 [1].Byte[0] = 0x00, [1].Byte[1] = 0x00, [1].Byte[2] = 0x00, [1].Byte[3] = 0x00
 [2].Byte[0] = 0x40, [2].Byte[1] = 0x40, [2].Byte[2] = 0x40, [2].Byte[3] = 0x40
 [3].Byte[0] = 0x00, [3].Byte[1] = 0x00, [3].Byte[2] = 0x00, [3].Byte[3] = 0x00

UCPTdiConfig[0,2], Configuration of Menu Buttons and digital inputs	
Allocation Button – Function Block	
Byte[0...3]	Description
	No Function
0x00	Unoccupied
	Set point adjustment
0x01	Set temperature Plus
0x02	Set temperature Minus
	Fan Stage
0x10	Plus by AUTO
0x11	Minus by AUTO
0x12	Plus without AUTO
0x13	Minus without AUTO
0x14	Plus with AUTO toggle
0x15	Minus with AUTO toggle
0x16	Plus without AUTO toggle
0x17	Minus without AUTO toggle
0x18	Only AUTO

Node Object

	Room Occupancy
0x20	With overtime function
0x21	With toggle function
0x22	Only Occupied
0x23	Only UnOccupied
0x24	Button pressed Occupied /button released UnOccupied
	Value Display
0x30	Indoor temperature - nviSpaceTemp respect. nvoSpaceTemp
0x31	Outdoor temperature - nviTempOutdoor
0x32	Effective set point - nvoSetptEffect
0x33	Offset set point - nvoSetptOffset
0x34	Individual value - nviMultiIn_1
0x35	Individual value - nviMultiIn_2
0x36	Time
0x37	Date
	Switch function
0x40	activated / deactivated (button function)
0x41	Light toggle
0x42	Light on
0x43	Light off
0x44	Commande automatic (= 0.0 -1)
	Dim function
0x50	Light toggle On = maximum value
0x51	Light toggle On = last value
0x52	Light brighter On = maxium value
0x53	Light brighter On = last value
0x54	Light darker Off
	Blind function
0x60	Blind UP
0x61	Blind DOWN
	Shutter function
0x70	Shutter UP
0x71	Shutter DOWN
	Scene function
0x80-0x8F	Scenen polling 0-15
	Scene function and Scene saving
0x90-0x9F	Scene polling 0-15 - If the button is pressed for a longer period of time, the scene is saved

Node Object

UCPTdiConfig[1,3] Allocation of Switch Objects to the digital inputs and selection Make /Break Contact	
Allocation Button – Function block	
Byte[0...3]	Description
0x00	Make contact Switch-Object 0
0x01	Make contact Switch-Object 1
0x02	Make contact Switch-Object 2
0x03	Make contact Switch-Object 3
0x10	Break contact Switch-Object 0
0x11	Break contact Switch-Object 1
0x12	Break contact Switch-Object 2
0x13	Break contact Switch-Object 3

SCPTnvType

SCPT Index: 254, SNVT_nv_type

Function: One SCPTnvType is available for nviMultiIn_1 and nviMultiIn_2 each. This configuration property specifies the type of the network variable nviMultiIn_1 respectively nviMultiIn_2. If SCPTnvType is not automatically adapted to the new variable type of nviMultiIn_1 / nviMultiIn_2 by the installation tool, the following settings must be input manually. Further values can be found in the Echelon SNVT-Master-List.

nviMultiIn = 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_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

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_press

==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 30, NVT_CAT_SIGNED_LONG, 1 bytes, A=1, B=-1, C=0

UCPTstring1, UCPTstring2, UCPTstring3

By the configuration properties alarm texts and units can be put in. The texts are displayed in two different type sizes. By means of the configuration properties alarm texts and units can be entered. The texts are displayed in two different sizes:

Type size 1 -> smallest size

Type size 2 -> medium size

Depending on the type size more or less letters are fitting into the display

UCPTstring1[0],[1],[2]

SCPT Index: 1, SNVT_str_asc

Function: Unit for nviMultiIn_1. If UCPTstring1[1] is empty, UCPTstring1[0] is automatically displayed in type size 2. Otherwise, the unit of type size 1 is displayed. UCPTstring1[2] is always displayed in type size 1. In type size 1 up to three signs and in type size 2 one sign as well as the degree symbol can be displayed.

UCPTstring2[0],[1],[2]

SCPT Index: 2, SNVT_str_asc

Function: Unit for nviMultiIn_2. If UCPTstring2[1] is empty, UCPTstring2[0] is automatically displayed in type size 2. Otherwise, the unit is shown in type size 1. UCPTstring2[2] is always displayed in type size 1. In type size 1 up to three signs and in type size 2 one sign as well as the degree symbol can be displayed.

Node Object

UCPTstring3[0],[1]

SCPT Index: 3, SNVT_str_asc

Function: Alarm message, which is polled by nviAlarm = 100.0 1.. If UCPTstring3[1] is empty, UCPTstring3[0] is automatically displayed in type size 2. Otherwise, the alarm message is displayed in type size 1. In type size 1 up to 12 signes and in type size 2 up to 7 signs can be displayed.

UCPTstring4[0],[1]

SCPT Index: 4, SNVT_str_asc

Function: Textfield, which is shown after a reset in row 1 and row 2. If UCPTstring4[1] is empty, UCPTstring4[0] is automatically displayed in type size 2. Otherwise, the text is displayed in type size 1. In type size 1 up to 14 signes and in type size 2 up to 9 signs can be displayed.

UCPTsunblindUP

UCPT Index: 72, SNVT_setting

Function: By means of this configuration property it can be adjusted which SNVT_setting value shall be sent when the blind/shutter is going up. (Preset value: SET_UP 100.0 0.0)

UCPTsunblindDOWN

UCPT Index: 73, SNVT_setting

Function: By means of this configuration property it can be adjusted which SNVT_setting value shall be sent when the blind/shutter is going down. (Preset value: SET_DOWN 100.0 0.0)

UCPTsunblindSTOP

UCPT Index: 74, SNVT_setting

Function: By means of this configuration property it can be adjusted which SNVT_setting value shall be sent when the blind/shutter is stopped. (Preset value: SET_STOP 0.0 0.0)

UCPTsunblindIDLE

UCPT Index: 75, SNVT_setting

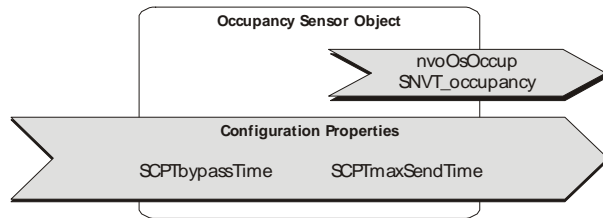
Function: By means of this configuration property you it can be adjusted which SNVT_setting value shall be sent for the standby mode of the blind/shutter. UCPTsunblindIDLE is sent 500ms after the stop of the blind/shutter, if UCPTsunblindIDLE is unequal UCPTsunblindSTOP. (Preset value: SET_NUL 0.0 0.0)

UCPTlongPressTime

UCPT Index: 71, typedef struct { SNVT_time_sec dimming; SNVT_time_sec sunblind;
SNVT_time_sec scene; SNVT_time_sec universal; }

Function: By means of this configuration property the time (in seconds) for dimming, blinds, scene and universal can be input by a long button actuation. (Preset value: 1.0;2.0;2.0;2.0)

3 Occupancy Sensor Object



Overtime Function with Presence Button:

If a menu button respectively a digital input are configured with presence, the output nvoOsOccup receives the value OCCUPIED upon confirmation. After expiration of the SCPTbypassTime it is reset to the value UNOCCUPIED. For realization of the overtime function and for indication in the display, nvoOsOccup must be binded to the input variable nviOccSensor.

The Occupancy Sensor Object can be switched by a conventional occupancy sensor. The occupancy sensor shall be connected to a digital input. Via UCPTdiConfig[1] (in NodeObject) the function for a motion detection is adjusted.

3.1 Output Variables Occupancy Sensor Object:

nvoOsOccup

SNVT Type: SNVT_occupancy, Index 109

Function: Output variable for presence detection in rooms. The output values are depending on the function settings. By UCPTdiConfig.Byte[0...3] = the menu buttons are allocated to the Occupancy-Sensor-Object. UCPTdiConfig.Byte[0...3] = 20_{hex} - 23_{hex} allocates a function to these buttons. Several buttons can be allocated to an Occupancy-Sensor-Object. For local presence detection nvoOsOccup can also be binded to the input variable nviOccSensor.

UCPTdiConfig.Byte[0...3] = 20_{hex}, Presence button with overtime function

By button actuation the output variable nvoOsOccup receives the value OC_OCCUPIED and the transit time is started. After expiration of the delay time SCPTbypassTime the output variable is reset to the value UNOCCUPIED. Each button actuation restarts the tracking time.

UCPTdiConfig.Byte[0...3] = 21_{hex}, Presence button with toggle function

By button actuation the output variable nvoOsOccup is toggled between the values OC_OCCUPIED and OC_UNOCCUPIED.

UCPTdiConfig.Byte[0...3] = 22_{hex}, Presence button OCCUPIED

By button actuation the output variable nvoOsOccup receives the value OC_OCCUPIED.

UCPTdiConfig.Byte[0...3] = 23_{hex}, Presence button UNOCCUPIED

By button actuation the output variable nvoOsOccup receives the value OC_UNOCCUPIED.

3.2 Configuration Property Occupancy Sensor Object:

SCPTbypassTime

SCPT Index: 34, SNVT_time_min

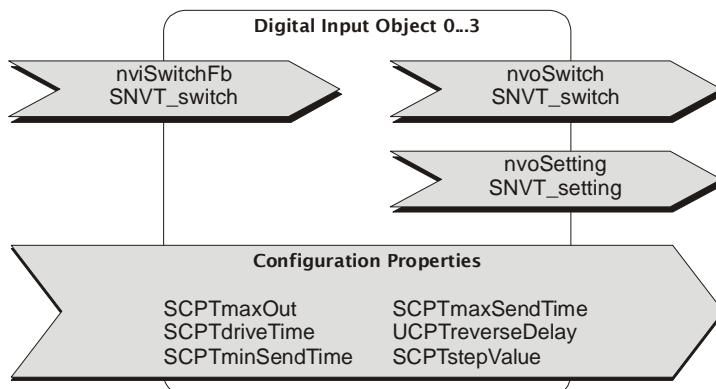
Function: Delay time in minutes. After expiration of SCPTbypassTime the output variable nvoOsOccup is set back to OC_UNOCCUPIED. (Preset value: 90 min)

SCPTmaxSendTime

Index: 49, SNVT_time_sec

Function: Heartbeat function. This configuration property stipulates the interval time after which the output variables are sent. By means of input values =0, the heartbeat function is deactivated. (Preset value: 120 s)

4 Digital Inputs



The status of the four potential-free digital inputs is detected and output by the output variables type `SNVT_switch` and `SNVT_setting`, depending on the configuration (`UCPTdiConfig`), whereas with `SNVT_switch` an absolute light value for manual override is sent

The digital inputs can be set by the following functions:

- Switch function: toggle, status
 - For light switch, window contact, dew point detector, air-flow monitoring
- Dim functions
- Blind functions
- Occupancy sensor

4.1 Input Variable Digital Input Object:

`nviSwitchFb_x`

SNVT Type: `SNVT_switch`, Index 95

Function: Input variable for current status of the light groups controlled by `nvoSwSwitch`.

4.2 Output Variable Digital Input Object:

`nvoSwitch_x`

`nvoSwitch_x`

SNVT Typ: `SNVT_switch`, Index 95

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

Switch/ Button

Button pressed/ not pressed

`UCPTdiConfig[x].Byte[0...3] = 40hex`

SNVT Type: `SNVT_switch`

Button pressed	<code>nvoSwitch.value</code>	= <code>SCPTmaxOut</code>
	<code>nvoSwitch.state</code>	= 1
Button not pressed	<code>nvoSwitch.value</code>	= 0
	<code>nvoSwitch.state</code>	= 0

SNVT Type: `SNVT_setting`

Button pressed	<code>nvoSetting.function</code>	= <code>SET_ON</code> ;
	<code>nvoSetting.setting</code>	= <code>SCPTmaxOut</code> ;
Button not pressed	<code>nvoSetting.function</code>	= <code>SET_OFF</code> ;
	<code>nvoSetting.setting</code>	= 0;

Lighting Toggle

`UCPTdiConfig[x].Byte[0...3] = 41hex`

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

SNVT Type: `SNVT_switch`

Lighting ON	<code>nvoSwitch.value</code>	= <code>SCPTmaxOut</code>
	<code>nvoSwitch.state</code>	= 1
Lighting OFF	<code>nvoSwitch.value</code>	= 0

Digital Inputs

SNVT Type: SNVT_setting	nvoSwitch.state	= 0
Lighting ON	nvoSetting.function	= SET_ON;
Lighting OFF	nvoSetting.setting	= SCPTmaxOut;
	nvoSetting.function	= SET_OFF;
	nvoSetting.setting	= 0;

Lighting ONUCPTdiConfig[x].Byte[0...3] = 42_{hex}

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;

Lighting OFFUCPTdiConfig[x].Byte[0...3] = 43_{hex}

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;

AutomaticUCPTdiConfig[x].Byte[0...3] = 44_{hex}

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

Lighting: Toggle by Dimming, Switch-ON Value = max. Value
UCPTdiConfig[x].Byte[0...3] = 50_{hex}

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 percent 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	= SCPTmaxOut
	nvoSwitch.state	= 1
Lighting on 50%	nvoSwitch.value	= 50,0
	nvoSwitch.state	= 1
Lighting OFF	nvoSwitch.value	= 0
	nvoSwitch.state	= 0

Lighting: Toggle by Dimming, Switch-ON Value = Last Switch-ON Value
UCPTdiConfig[x].Byte[0...3] = 51_{hex}

Function as with 50_{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-Dimmeing, Switch-ON Value = max. Value
UCPTdiConfig[x].Byte[0...3] = 52_{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	nvoSwitch.value	= SCPTmaxOut
	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;
	nvoSetting.setting	= SCPTmaxOut;
Brighter dimming of lighting	nvoSetting.function	= SET_UP;
	nvoSetting.setting	= UCPTstepValue;

Lighting ON by Brighter Dimming, Switch-ON Value = last ON-value
UCPTdiConfig[x].Byte[0...3] = 53_{hex}

Function as with 52_{hex} but with the difference, that not the value SCPTmaxOut is taken over when switching-on the light, but the last turn-on value. The smallest turn-on value is limited to 20%.

Lighting OFF by Darker Dimming
UCPTdiConfig[x].Byte[0...3] = 54_{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	nvoSwitch.value	= 0
	nvoSwitch.state	= 0

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Darker dimming of lighting	nvoSwitch.value= last value - UCPTstepValue nvoSwitch.state	= 1
SNVT Type: SNVT_setting Switching-off of lightning	nvoSetting.function nvoSetting.setting	= SET_OFF; = 0;
Darker dimming of lightning	nvoSetting.function nvoSetting.setting	= SET_DOWN; = SCPTstepValue;

Blind

Blind UP

UCPTdiConfig[x].Byte[0...3] = 60_{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 actuation 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		
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[x].Byte[0...3] = 61_{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	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

UCPTdiConfig[x].Byte[0...3] = 70_{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	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

UCPTdiConfig[x].Byte[0...3] = 71_{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

Digital Inputs

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 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.

Scene call

UCPTdiConfig[x].Byte[0...3] = 80_{hex} ... 8F_{hex}

Output variable to control a scene controller. The scene numbers 0-15 can be allocated to the button.

Scene call and scene save

UCPTdiConfig[x].Byte[0...3] = 90_{hex} ... 9F_{hex}

Output variable for control of a scene controller. The scene numbers 0-15 can be allocated to the button. With short button actuations the scene is called by SC_RECALL. With long button actuations, the scene is learned-in again by SC_LEARN. The output is made to nvoScScene.

4.3 Configuration Parameter Digital Input Object:

SCPTdriveTime

UCPT Index: 45, SNVT_time_sec

Function: This configuration property defines the maximum switch-on time of the blind motors in the automatic run. (Preset value: 100,0 s)

UCPTreverseDelay

UCPT Index: 14, SNVT_count

Function: This configuration property defines the toggling delay with a rotation reversing of the blind motors. Thus, a change command from e.g. nvoSetting = SET_UP to nvoSetting = SET_DOWN is output delayed. (Preset value: 500 ms)

SCPTminSendTime

SCPT Index: 52, SNVT_time_sec

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

SCPTstepValue

SCPT Index: 92, SNVT_lev_cont

Function: This configuration property defines the step size of the variable nvoSwitch.value in the dimming mode. (Preset value: 5.0)

SCPTmaxOut

SCPT Index: 93, SNVT_lev_cont

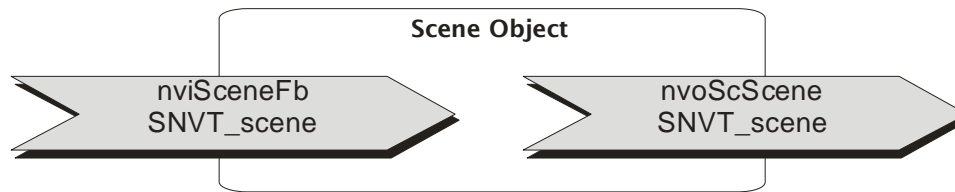
Function: Configuration parameter to determine the maximal output value of the variable nvoSwitch.value. (Present Value: 100 %)

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat interval. After expiration of the time SCPTmaxSendTime the digital input is polled and the output variables are up-dated. By input values = 0 the heartbeat function is deactivated. (Preset value: 0)

5 Scene Panel



Input Variables Scene Panel:

nviScSceneFb

SNVT Type: SNVT_scene, Index 115

Function: Input variable for current illumination scene.

Output Variables Scene Panel:

nvoScScene

SNVT Type: SNVT_scene, Index 115

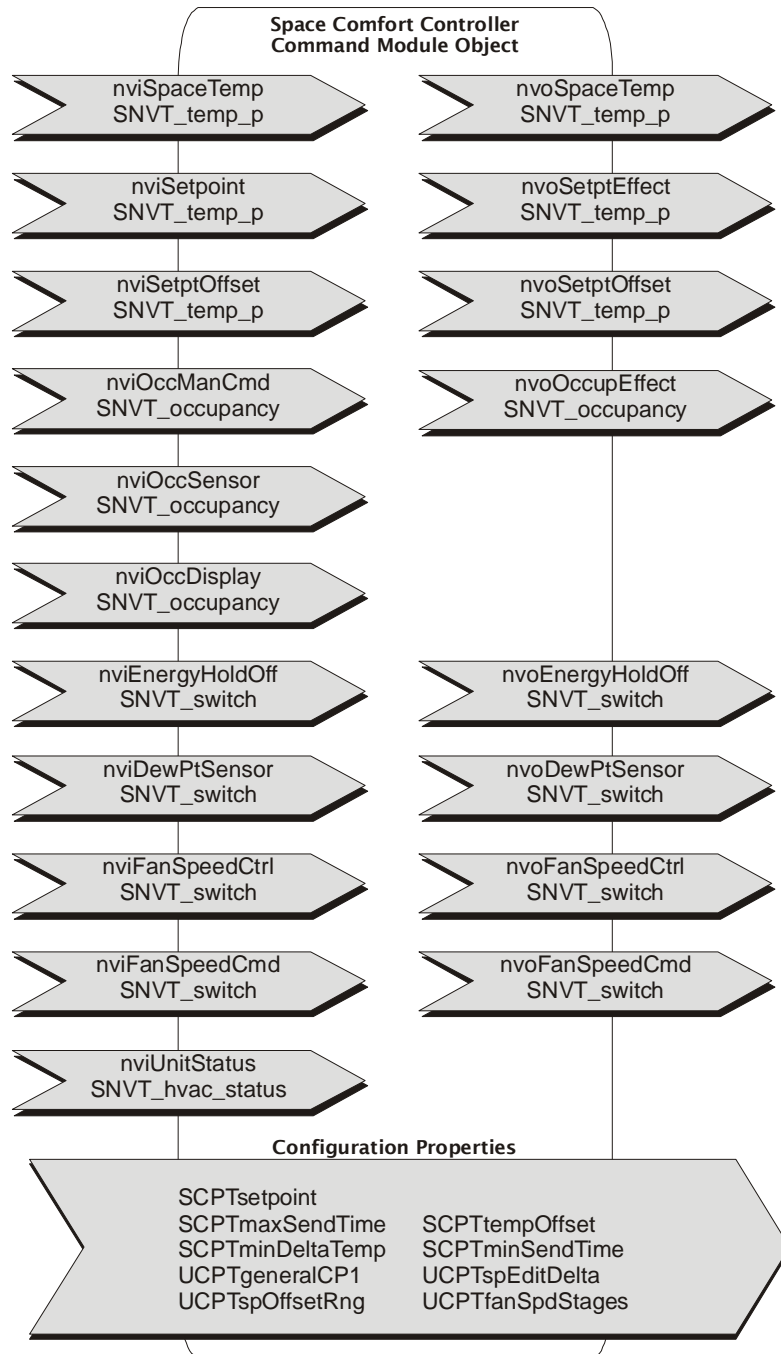
Function: Output variable for control of a scene panel. The output values are depending on the function adjustments.

By UCPTdiConfig[0,2].Byte[x] = 0x80 – 0x9F the buttons are allocated to the scene object. UCPTdiConfig[0,2].Byte[x] = 80_{hex} - 8F_{hex} allocates a scene number to these buttons, which are called-off with short-term button actuations by SC_RECALL.

By UCPTdiConfig[0,2].Byte[x] = 0x90 – 0x9F the buttons are allocated to the scene object. UCPTdiConfig[0,2].Byte[x] = 90_{hex} - 9F_{hex} allocates a scene number to these buttons, which are called-off with short-term button actuations by SC_RECALL. With long-term button actuations (> 2s) the scene is learned in.

6 Space Comfort Controller

The Object includes functions for temperature detection and set point adjustment. Output of the control variables is made via network variables.



Set point default: Via the menu buttons the set point temperature can be increased or reduced in the range of UCPTspOffsetRng. Output of the offset value is made with nvoSetptOffset. The effective set point (basic set point) nvoSetptEffect is calculated by the set point defaults via SCPTsetpoint or nviSetpoint and the adjusted set point offset.

6.1 Input Variables Space Comfort Control Command Module

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.

nviOccManCmd und nviOccSensor

SNVT Type: 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 via building control technology: OC_OCCUPIED, OC_BYPASS, OC_STANDBY, OC_UNOCCUPIED
 nviOccSensor: presence status message in rooms: OC_OCCUPIED, OC_UNOCCUPIED
 Via the configuration property *UCPTgeneralCP1* the behaviour of the device can be determined if nviOccManCmd = OC_UNOCCUPIED is switched.

nviOccManCmd	nviOccSensor		room occupancy nvoOccupEffect	Setpoint nvoSetptEffect
OC_NUL	OC_NUL	>>>	OCCUPIED	SCPTsetpoint + nviSetptOffset or nviSetptOffset + nviSetpoint
OC_OCCUPIED	****	>>>		
****	OC_OCCUPIED	>>>		
OC_STANDBY	OC_NUL OC_UNOCCUPIED	>>>	STANDBY	SCPTsetpoint + nviSetptOffset or nviSetptOffset + nviSetpoint
OC_UNOCCUPIED	OC_NUL OC_UNOCCUPIED	>>>	UNOCCUPIED	SCPTsetpoint or nviSetpoint

Table 1: Control porperty depending on the room occupancy

nviOccDisplay

SNVT Typ: SNVT_occupancy, Index 109

Function: Input variable for display occupancy in display.

Space Comfort Controller

nviFanSpeedCmd

SNVT Type: SNVT_switch, Index 95

Function: Input variable to set a new fan speed value for display and nvoFanSpeed.

nviFanSpeedCtrl

SNVT Type: SNVT_switch, Index 95

Function: The input variable nviFanSpeedCtrl enables the display of the current fan speed if the externally connected controller selects the fan speed autonomously by nvoFanSpeedCmd 0,0 -1. Therefore, the output variable of the controller (e.g. nvoFanSpeedCmd) must be connected with the input variable nviFanSpeedCtrl.

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 + 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.

nviDewPtSensor

SNVT Type: SNVT_switch, Index 95

Function: Input variable for evaluation of a dew point detector in the operating mode cooling.

nviUnitStatus

SNVT Type: SNVT_hvac_status, Index 112

Function: Input variable for operating mode. Need for display symbol heating / cooling.

.heat_output_primary 0...100 %	=> Symbol heating
.cool_output_primary 0...100 %	=> Symbol cooling

6.2 Output Variables

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.

nvoEnergyHoldOff

SNVT Type: SNVT_switch, Index 95

Function: Output variable for status message of the energy-saving function.

nvoEnergyHoldOff = 0.0 0 ==> window contact inactive

nvoEnergyHoldOff = 100.0 1 ==> window contact active

Data output is made depending on SCPTmaxSendTime, upon value change and 1,5s - 4s after reset

nvoDewPtSensor

SNVT Type: SNVT_switch, Index 95

Function: Output variable for status message of the dew point detector.

nvoDewPtSensor = 0.0 0 ==> dew point detector inactive

nvoDewPtSensor = 100.0 1 ==> dew point

Data output is made depending on SCPTmaxSendTime, upon 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

UCPTfanSpdStages = 2

UCPTfanSpdStages = 3

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

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

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

!! The acutation of the buttons is only evaluated with nvoEffectOccup = OC_OCCUPIED. Otherwise, button !!actuations are ignored.

UCPTdiConfig.Byte[0...3] = 10hex - 18hex (in Node Object) allocates a function for fan speed adjustment to the menu buttons.

UCPTdiConfig.Byte[0...3] = 10hex, increase fan stage by AUTO

By button actuation the output variable *nvoFanSpeed* is increased.

UCPTdiConfig.Byte[0...3] = 11hex, reduce fan stage by AUTO

By button actuation the output variable *nvoFanSpeed* is reduced.

UCPTdiConfig.Byte[0...3] = 12hex, increase fan stage without AUTO

By button actuation the output variable *nvoFanSpeed* is increased.

UCPTdiConfig.Byte[0...3] = 13hex, reduce fan stage without AUTO

By button actuation the output variable *nvoFanSpeed* is reduced.

UCPTdiConfig.Byte[0...3] = 14hex, increase fan stage with AUTO toggling

By button actuation the output variable *nvoFanSpeed* is increased. A button actuation at max. fan stage resets the fan stage to AUTO.

UCPTdiConfig.Byte[0...3] = 15hex, reduce fan stage by AUTO toggling

By button actuation the output variable *nvoFanSpeed* is reduced. A button actuation with AUTO resets to the maximal stage.

UCPTdiConfig.Byte[0...3] = 16hex, increase fan stage without AUTO toggling

By button actuation the output variable *nvoFanSpeed* is increased. A button actuation with max. fan stage resets to „0“. The value AUTO is skipped.

UCPTdiConfig.Byte[0...3] = 17hex, reduce fan stage without AUTO toggling

By button actuation the output variable *nvoFanSpeed* is reduced. A button actuation with „0“ resets to the maximal stage. The value AUTO is skipped.

UCPTdiConfig.Byte[0...3] = 18hex, fan stage only AUTO

By button actuation the output variable *nvoFanSpeed* is toggled to the value 0.0 -1.

nvoFanSpeedCmd

SNVT Type: SNVT_switch, Index 95

Function: Output variable for adjusted fan speed and for concatenation of devices. The number of fan stages is adjustable by means of the configuration property UCPTfanSpdStages. The indication in the display shows the current fan stage adjusted and whether the controller is working in the automatic module.

UCPTfanSpdStages = 1
= 3

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

UCPTfanSpdStages = 2

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

UCPTfanSpdStages

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

!! Actuation of the buttons is **only evaluated with nvoEffectOccup = OC_OCCUPIED.**

!! Otherwise the button actuation is ignored.

6.3 Configuration Property

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)

SCPTtempOffset

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 $\geq 0^\circ\text{C}$; preset value: 0,30 $^\circ\text{C}$)

UCPTgeneralCP1

Index: 7, SNVT_state

Function: The configuration property determines the behaviour of the node nviOccManCmd = OC_UNOCCUPIED is switched.

UCPTgeneralCP1.bit[0] = 1 ==> reset **nviOccSensor** to „OC_NUL“

UCPTgeneralCP1.bit[0] = 0* ==> no reset of **nviOccSensor**

UCPTgeneralCP1.bit[1] = 1 ==> reset **nvoOsOccup** to „OC_NUL“

UCPTgeneralCP1.bit[1] = 0* ==> no reset of **nvoOsOccup**

UCPTgeneralCP1.bit[2] = 1 ==> reset **Set point offset**

UCPTgeneralCP1.bit[2] = 0* ==> no reset of **Set point offset**

UCPTgeneralCP1.bit[3] = 1 ==> reset **fan stage** to „AUTO“

UCPTgeneralCP1.bit[3] = 0* ==> no reset of **fan stage**

UCPTgeneralCP1.bit[4] = 1 ==> set **fan stage** to „Off“

UCPTgeneralCP1.bit[4] = 0* ==> no reset of **fan stage**

UCPTgeneralCP1.bit[5] = 1 ==> reset **nvoSwitch[0]** to „Off“

UCPTgeneralCP1.bit[5] = 0* ==> no reset of **nvoSwitch[0]**

UCPTgeneralCP1.bit[6] = 1 ==> reset **nvoSwitch[1]** to „Off“

UCPTgeneralCP1.bit[6] = 0* ==> no reset of **nvoSwitch[1]**

UCPTgeneralCP1.bit[7] = 1 ==> reset **nvoSwitch[2]** to „Off“

UCPTgeneralCP1.bit[7] = 0* ==> no reset of **nvoSwitch[2]**

UCPTgeneralCP1.bit[8] = 1 ==> reset **nvoSwitch[3]** to „Off“

UCPTgeneralCP1.bit[8] = 0* ==> no reset of **nvoSwitch[3]**

* = present values

SCPTsetpoint

Index: 213, SNVT_temp_p

Function: Configuration parameter for set point default (Preset value: 22,00 $^\circ\text{C}$)

UCPTspEditDelta

Index: 9, SNVT_temp_p

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

UCPTspOffsetRng

Index: 12, SNVT_temp_p

Function: Configuration property 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 +/- UCPTspOffsetRng. (Preset value: 3,0 K)

UCPTfanSpdStages

Index: 13, SNVT_count

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