Application description lumina MS4 / MS4-RC

Version 2.00

Moers, 03/21/2014

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1. Applications

Using one of the multisensor applications you can capture and control different HVAC and lighting systems. The following applications/multisensors are available:

Multisensor	Application	NodeObject	LightSensor	Occupancy Sensor	Universal Sensor	Command Module	Switch	ScenePanel	Occupancy Controller	DewPoint Calculator	SpaceComfort Controller	ThermoController	ConstantLight Controller
lumina MS4	SC911113EC_01	1	1	1	-	1	8	1	1	1	1	1	1
lumina MS4-RC	SC911313EC_01	1	1	1	3	1	8	1	1	1	1	1	1

1.1. Application data

You can select the desired application in the spega device template manager. All the required application files, resource files and plug-ins for the relevant project will be loaded.

Application	**SC911113EC_01**
Multisensor	lumina MS4
Application files	SC911113EC_01.APB
	SC911113EC_01.NXE
	SC911113EC_01.XIF
	SC911113EC_01.XFB
Ressource files	spega_ec Ressource files required, from version 1.14 onwards sistema_mc16 Ressource files required, from version 1.02 onwards
Plug-ins	Multisensor device plug-in, object plug-ins

Application	**SC911313EC_01**
Multisensor	lumina MS4-RC
Application files	SC911313EC_01.APB
	SC911313EC_01.NXE
	SC911313EC_01.XIF
	SC911313EC_01.XFB
Ressource files	spega_ec Ressource files required, from version 1.14 onwards sistema_mc16 Ressource files required, from version 1.02 onwards
Plug-ins	Multisensor device plug-in, object plug-ins

The software complies with LonMark™ Interoperability Guidelines. When using LNS-based integration tools we recommend the use of the resource files listed.

1.2. Automation functions

You can achieve a wide range of various automation functions with the spega multisensors. Their availability depends on which multisensor is used and how the objects are configured.

1.2.1 VDI3813 – Functions

Sensor functions

- Presence detection
- Brightness measurement
- Air temperature measurement
- Window monitoring (radio)
- Air quality measurement (radio)

Operating and display functions

- Actuate light
- Actuate sunshade
- Actuate drive
- Signal presence
- Adjust temperature setpoint
- Select room utilization type

Application functions

- Occupancy evaluation
- Control via room utilization types
- Automatic lights
- Daylight-dependent lighting
- Constant light control
- Automatic thermal control
- Energy mode selection
- Energy mode selection with start optimization
- Setpoint calculation
- Function selection
- Temperature control (heating/cooling)
- Air quality control
- Fan control
- Night time cooling

1.2.2 Extended functions

Sensor functions

- Measurement of relative Humidity (radio)

Application functions

- Dew point calculation

Object behaviour

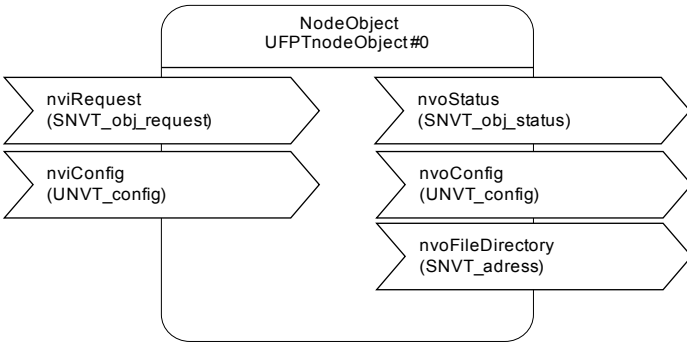
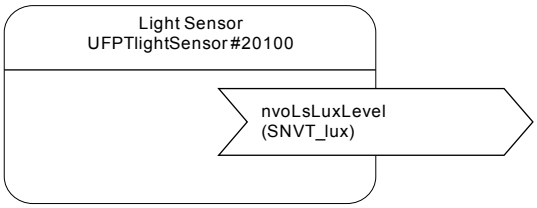
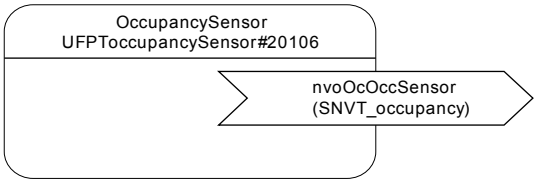
- Action in the event of communication faults
- Action following resumption of power supply or reset
- Switchable network variable types
- Transmission response for output network variables

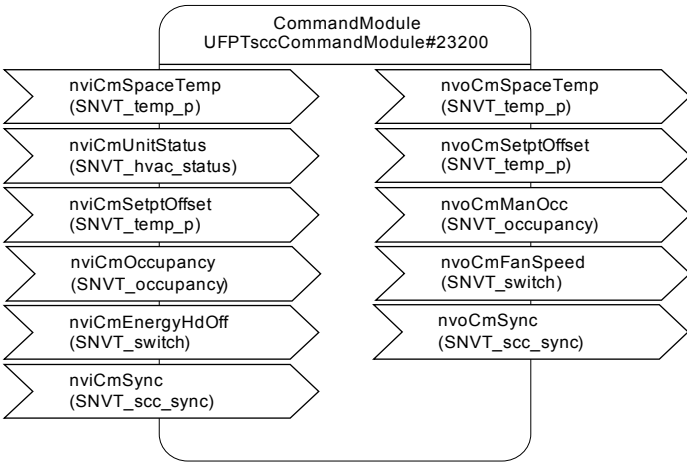
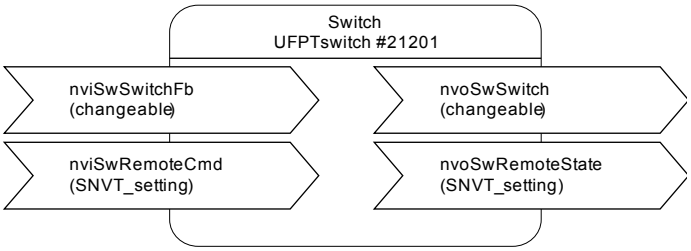
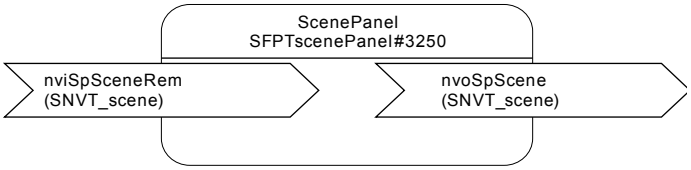
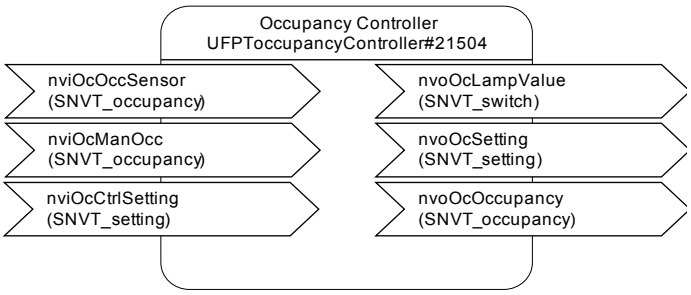
1.3. Device templates - Interfaces

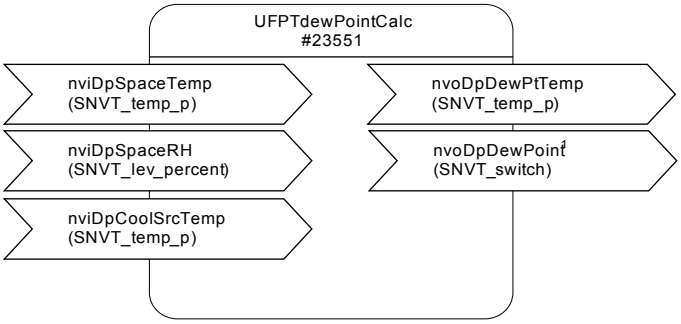
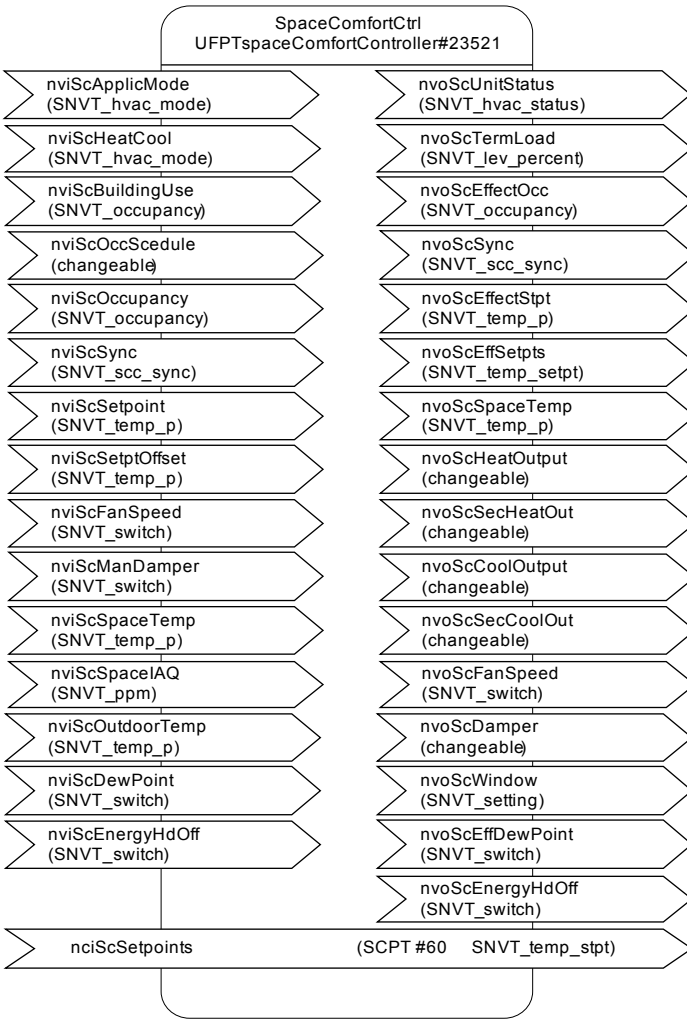
This section contains a brief description of the device templates of the applications available for the device.

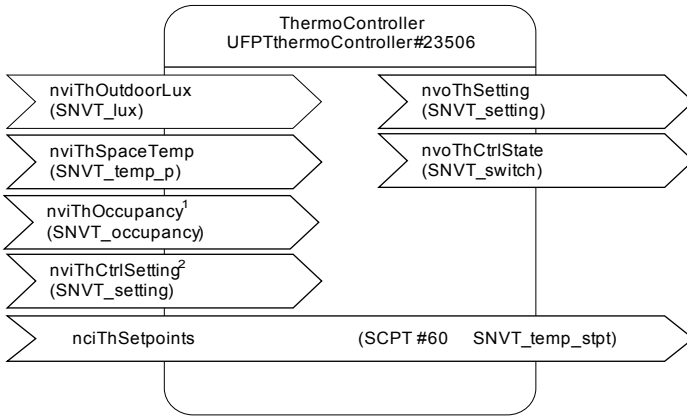
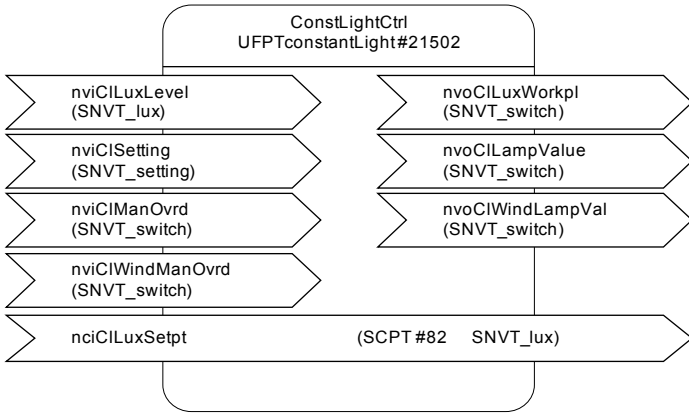
1.3.1 Applications

SC911113EC_01

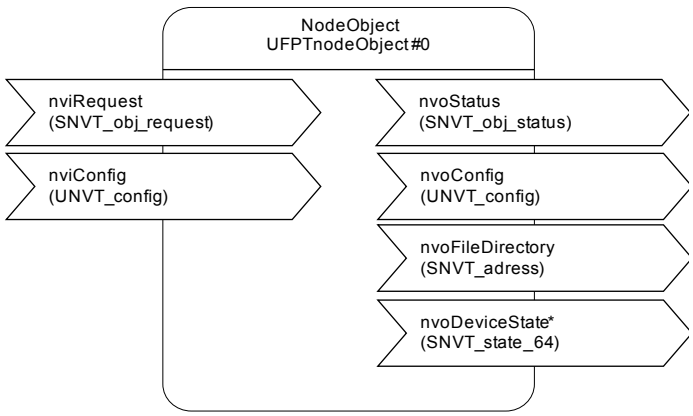
Count	Object	Interface
1	NodeObject UFPT #0	
1	LightSensor UFPT #20100	
1	OccupancySensor UFPT #20106	

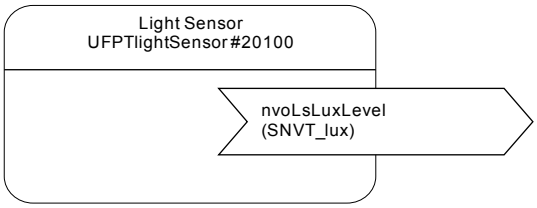
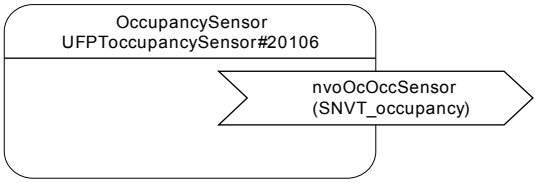
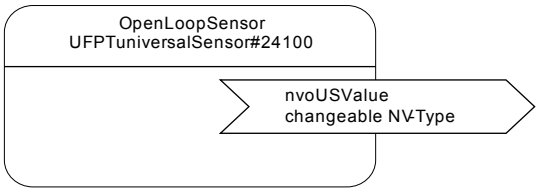
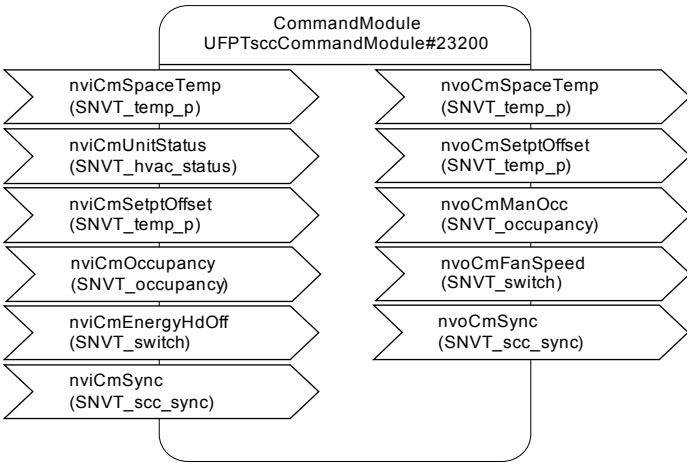
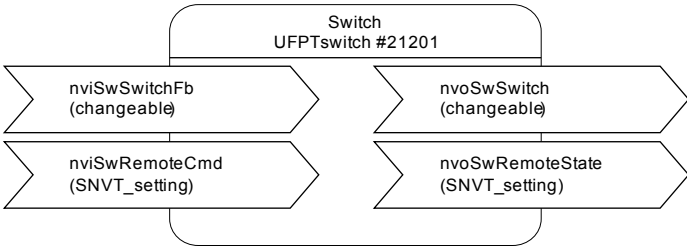
Count	Object	Interface
1	CommandModule UFPT #23200	
8	Switch UFPT #21201	
1	ScenePanel UFPT #3250	
1	Occupancy Controller UFPT #21504	

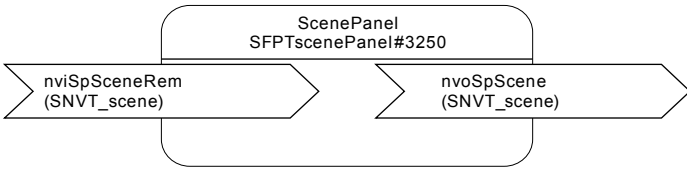
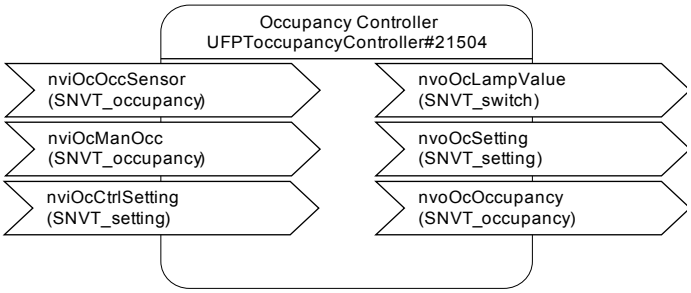
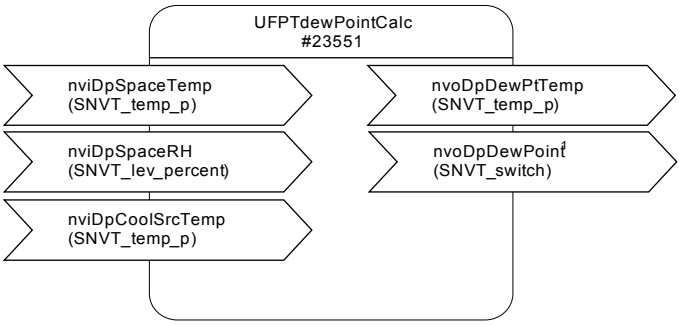
Count	Object	Interface
1	DewPoint Calculator UFPT #23551	
1	SpaceComfort Controller UFPT #23521	

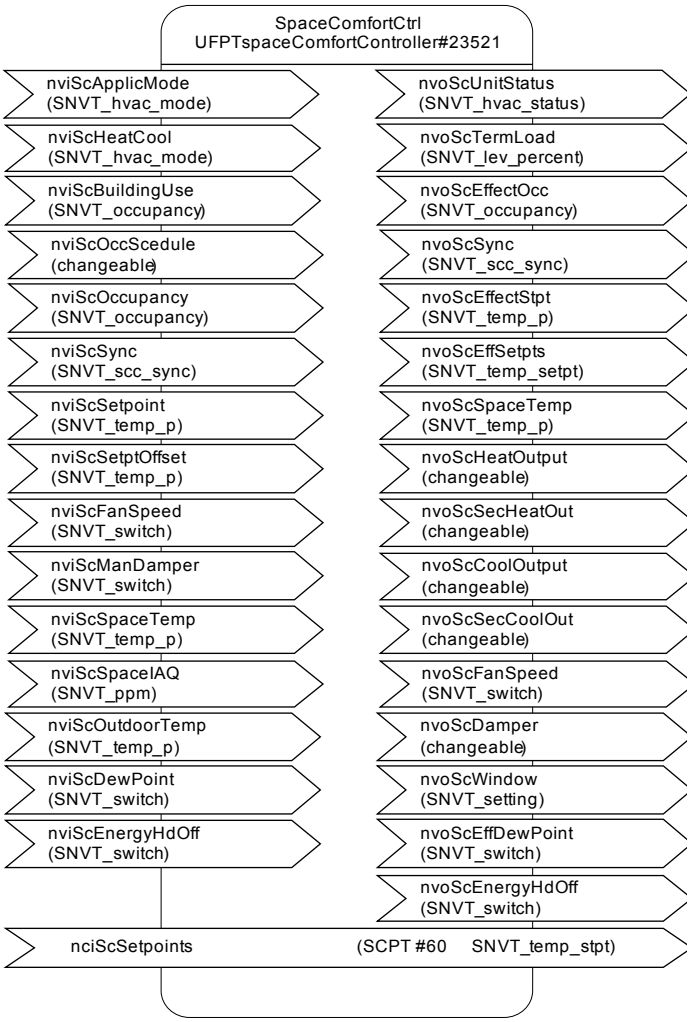
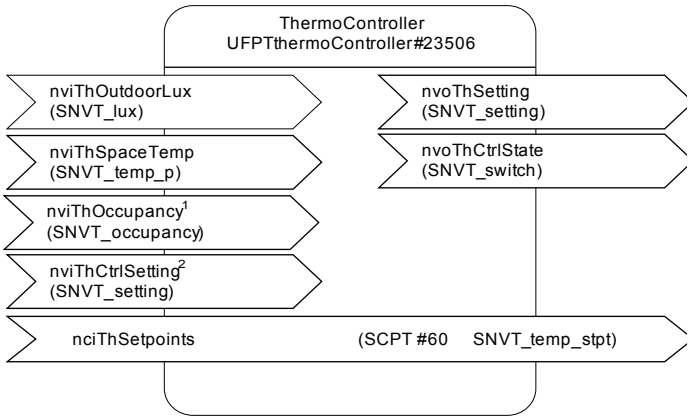
Count	Object	Interface
1	ThermoController UFPT #23506	
1	ConstantLight Controller UFPT #21502	

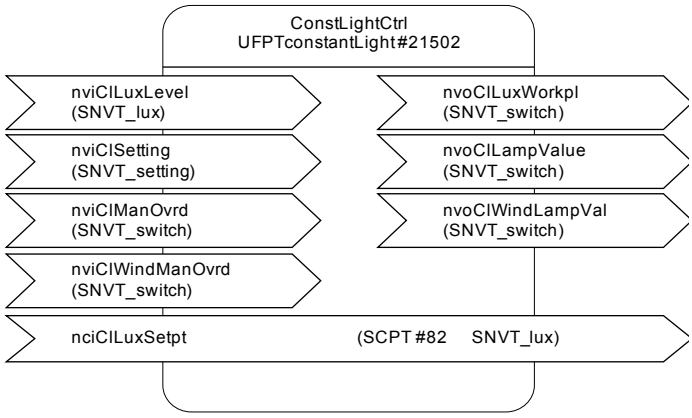
SC911313EC_01

Count	Object	Interface
1	NodeObject UFPT #0	

Count	Object	Interface
1	LightSensor UFPT #20100	
1	OccupancySensor UFPT #20106	
3	OpenLoopSensor UFPT #24100	
1	CommandModule UFPT #23200	
8	Switch UFPT #21201	

Count	Object	Interface
1	ScenePanel UFPT #3250	
1	Occupancy Controller UFPT #21504	
1	DewPoint Calculator UFPT #23551	

Count	Object	Interface
1	SpaceComfort Controller UFPT #23521	
1	ThermoController UFPT #23506	

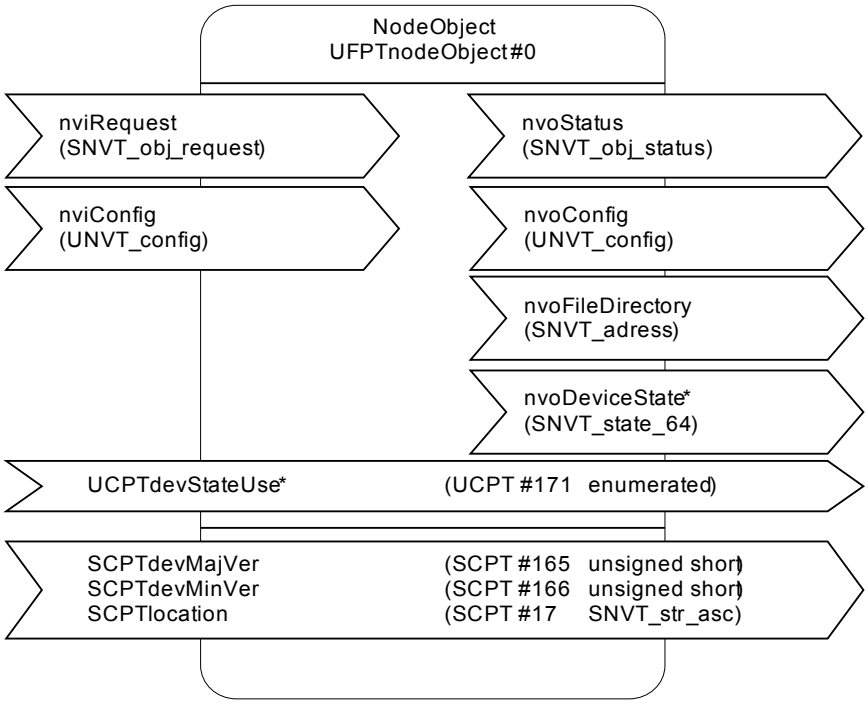
Count	Object	Interface
1	ConstantLight Controller UFPT #21502	

1.4. Description of software objects

The individual functional objects are described in greater detail below.

1.4.1 Node object

Network interface



** only with radio receiver*

Network variables

Input variables

`nviRequest` Default network input for receiving management commands

Type: SNVT_obj_request

Presetting: {0, RQ_NORMAL}

`nviConfig` Communication interface for plug-ins

Type: UNVT_config

Output variables

`nvoConfig` Communication interface for plug-ins

Type: UNVT_config

Transmission: on request via *nviConfig*

`nvoDeviceState` Output of status messages

Type: enumerated

`nvoFile Directory`	Provides the start address of the config file directory of the device
Type:	SNVT_address
Transmission:	During file transfer or polling

`nvoStatus`	Output of status data for received request management commands via *nviRequest*
Type:	SNVT_obj_status
Transmission:	On request via *nviRequest*

Configuration properties

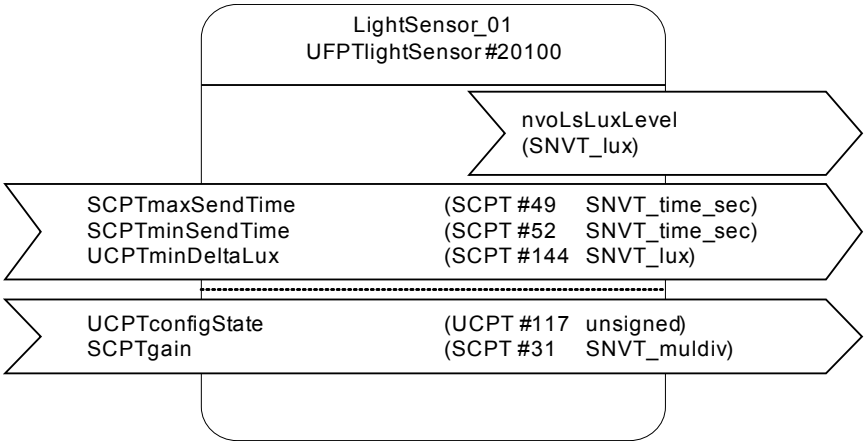
`SCPTdevMaj Ver`	Major version of the application
Type:	SCPT #165 (read only) unsigned short
Value:	Application specific

`SCPTdevMin Ver`	Minor version of the application
Type:	SCPT #166 (read only) unsigned short
Value:	Application specific

`SCPTlocation`	Extended description of the device location
Type:	SCPT #17 SNVT_str_asc
Presetting:	{ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 }

1.4.2 Brightness measurement

Network interface



Network variables

`nvoLsLuxLevel` Measurement value

Type:	SNVT_lux
Range of values:	0 – 65335 lux
Presetting:	0 lux {0}
Transmission:	adjustable via *SCPTmaxSendTime*, *SCPTminSendTime* and *UCPTminDeltaLux*

Configuration parameters

Parametrization of network variables

`SCPTmaxSend Time` Maximum period of time between sending two telegrams

Type:	SNVT_time_sec (SCPT #49)
Range of values:	0 ... 6553 Seconds
Presetting:	0 Seconds {0}

`SCPTmin SendTime` Minimum transmission interval before re-sending a value

Type:	SNVT_time_sec (SCPT #52)	
Range of values:	0	No periodic resend
	0,5 - 6553,0	Seconds
Presetting:	No periodic resend {0}	

`UCPTmin DeltaLux` Minimum of absolute value change causing the value to be re-sent

Type:	SNVT_lux (UCPT #144)
Range of values:	0 – 65335 lux
Presetting:	0 lux {0}

Parametrization of functional object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #195)

Range of values: 0 - 255

Presetting: 255 {255}

`SCPTgain` Gain for input signal (to balance variances depending on installation conditions)

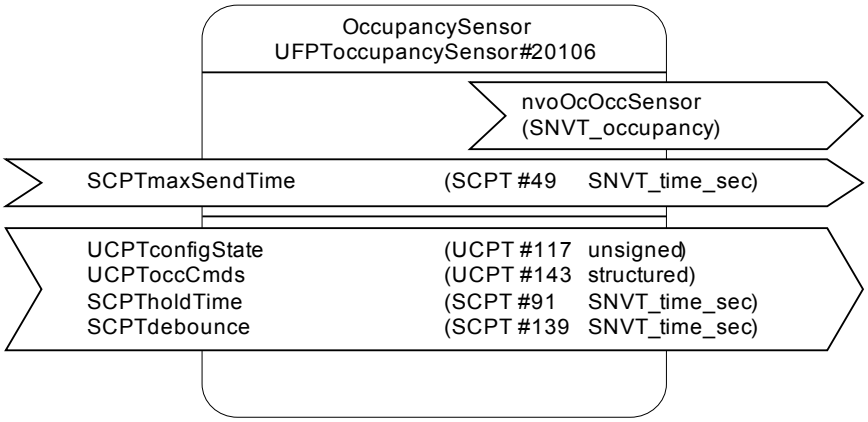
Type: SNVT_muldiv (SCPT #31)

Range of values: .multiplier: Reference value 1 ... 65535 lux
.divisor: Sensor value 1 ... 65535 lux

Presetting: 1/1 {1, 1}

1.4.3 Presence detection

Network interface



Network variables

`nvoOccSensor` occupation of the room

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED
room occupied
1 OC_UNOCCUPIED
room unoccupied
2 OC_BYPASS
room temporary occupied
3 OC_STANDBY
room temporary unoccupied

Presetting: OC_UNOCCUPIED {0}

Transmission: on change and cyclic depending on *SCPTmaxSendTime*

Configuration properties

Parametrization of network variables

`SCPTmaxSend Time` Maximum period of time between sending two telegrams

Type: SNVT_time_sec (SCPT #49)

Range of values: 0 ... 6553,4 Seconds

Presetting: 0 Seconds {0}

Parametrization of functional object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short

Range of values: 0 - 255

Presetting: 255 {255}

`SCPTholdTime` Hold time for occupied state after there is no occupancy detected

Type: SNVT_time_sec (SCPT #91)

Range of values: 0 ... 6553,4 Seconds

Presetting: 60 seconds {600}

`SCPTdebounce` debounce time for sensor

Type: SNVT_time_sec (UCPT #139)

Range of values: 0 ... 6553,4 Sek.

Presetting: 10 sek {100}

`UCPToccCmds` used telegramm values

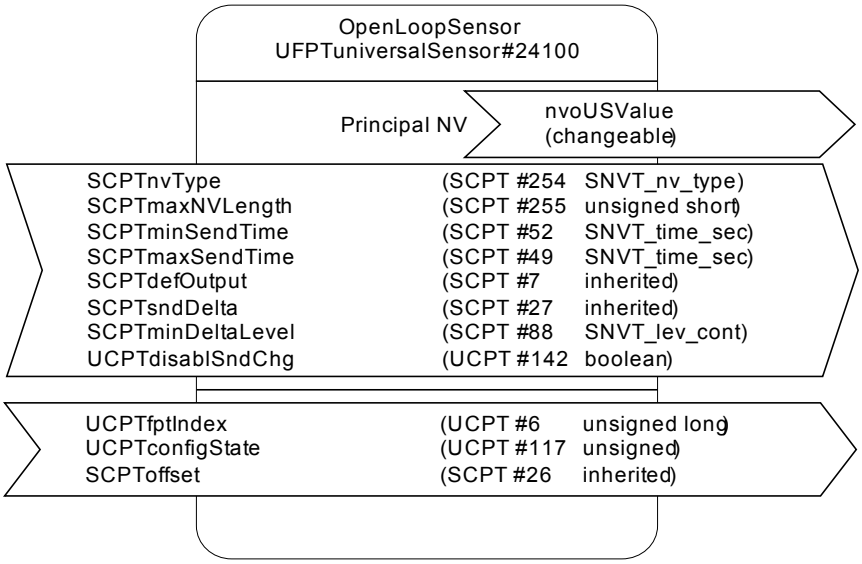
Type: structured (UCPT #143)

Range of values: .cmd_on / .cmd_off :
0 OC_OCCUPIED room occupied
1 OC_UNOCCUPIED room unoccupied
2 OC_BYPASS room temporary occupied
3 OC_STANDBY room temporary unoccupied

Presetting: occupied on switch on and unoccupied on switch off {0,1}

1.4.4 Universal sensor

Network interface



Network variables

`nvoUSValue` Output for sensor values
Type: Changeable
Default type: SNVT_temp_p
Presetting: *SCPTdefOutput*
Transmission: adjustable via *SCPTmaxSendTime* *SCPTminSendTime*

Configuration properties

Parametrization of network variables

`SCPTnvType` Type of the network variable
Type: structure (SCPT #254)
Range of values: Supported NV-types
Presetting: SNVT_setting {0,0,0,0,0,0,0,0,105, NVT_CAT_SIGNED_LONG,2,1L,-2L,0L}

`SCPTmaxNVLength` Maximum length of the network variable (constant)
Type: unsigned short (SCPT #255)
Range of values: 2 Byte {2}

`SCPTminSendTime` zeitlicher Mindestabstand zwischen 2 Telegrammen
Validity: for *nvoUSValue*
Type: SNVT_time_sec (SCPT #52)
Range of values: 0 ... 6553,4 Seconds
Presetting: 0,1 Second {1}

`SCPTmax SendTime` Maximum period of time between sending two telegrams
Validity: for *nvoUSValue*
Type: SNVT_time_sec (SCPT #49)
Range of values: 0 ... 6553,4 Seconds
Presetting: 0,0 Seconds {0}

`UCPTdisabl SndChg` Suppress sending of value changes out of cycle
Type: boolean (UCPT #5)
Range of values: 0 send cyclic and sufficient value changes
1 send only cyclic
Presetting: send cyclic and changes {0}

`SCPTdef Output` Default value for *nvoUSValue*
Type: inherited from *nvoUSValue*
Range of values: SNVT_setting
Presetting: 0/OFF {SET_OFF, 0.0, 0.00}

`SCPTsnd Delta` Minimum of absolute value change causing the value to be re-sent
Type: inherited from *nvoUSValue*
Range of values: SNVT_temp_p
Presetting: 0 {0.00}

`SCPTmin DeltaLevel` Minimum of relative value change causing the value to be re-sent
Type: SNVT_lev_cont (SCPT #88)
Presetting: 0 % {0.0}

Parametrization of functional object

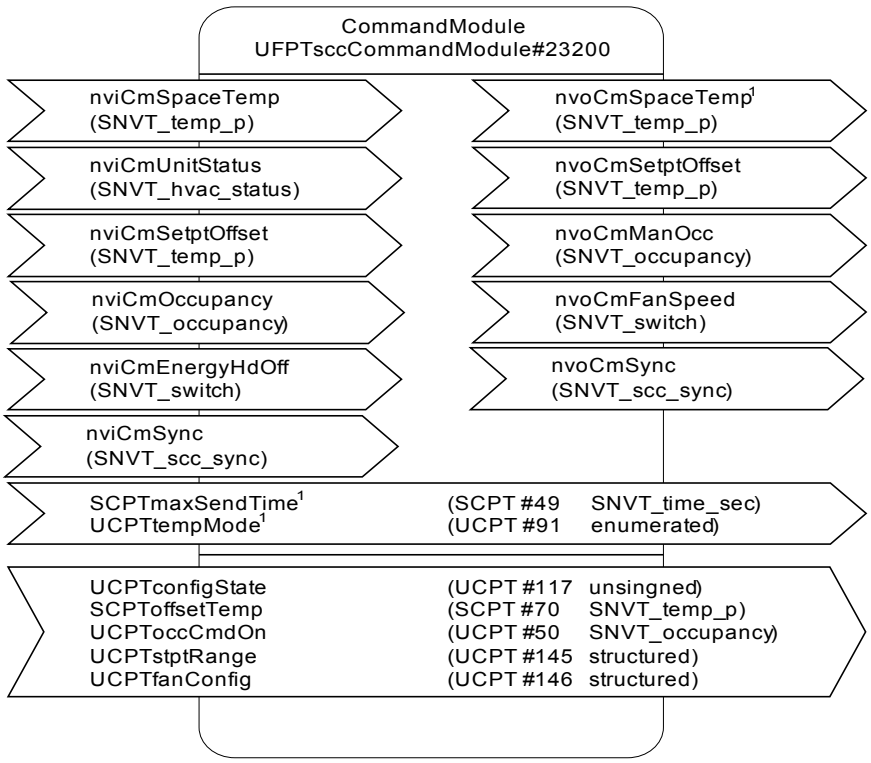
`UCPTftpIndex` Index of selected function/profile
Type: unsigned long (UCPT #6)
Range of values: 65535 No profile selected
20101 Temperature sensor
20105 Air quality sensor
20110 Relative humidity sensor
Presetting: No Profile selected {65535}

`UCPTconfig State` only used by plug-in
Type: unsigned short (UCPT #177)
Range of values: -
Presetting: -

`SCPToffset` Measurement offset to calibrate the sensor
Type: inherited (UCPT #26)
Range of values: SNVT_temp_p
Presetting: 0 {0,00}

1.4.5 Operating module

Network interface



Network variables

`nviCmSpace Temp` Room temperature to show on display

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviCm Occupancy` Occupancy feedback for synchronization of toggle buttons and for display

Type: SNVT_occupancy
Range of values: SNVT_occupancy
Presetting: Invalid value {OC_NUL}

`nviCmSetpt Offset` Setpoint offset feedback for syncronization and display

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviCmUnit Status` Room temperature controller states for syncronization and display

Type: SNVT_hvac_status
Range of values: SNVT_hvac_status
Presetting: Invalid values {HVAC_NUL, 32767, 32767, 32767, 32767, 32767, 255}

`nviCmSync` Feedback from spega SpaceComfortController and synchronization between spega CommandModul objects

Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: Invalid values {32767, HVAC_NUL, HVAC_NUL, 32767, 32767, 255, 255, 255, 255, 255, 255, 255, 255, 255, 255}

`nvoCmSpaceTemp` Temperature measurement value

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}
Transmission: via *SCPTmaxSendTime* and *UCPTtempMode*

`nvoCmSetptOffset` Manual setpoint offset

Type: SNVT_temp_p
Range of values: parametrized at *UCPTstptRange*
Presetting: Invalid value {32767}

`nvoCmManOcc` Manual occupancy

Type: SNVT_occupancy
Range of values: *UCPToccCmds.cmd_on* *UCPToccCmds.cmd_off*
Presetting: Invalid value {OC_NUL}

`nvoCmFanSpeed` Manual fan stage

Type: SNVT_switch
Range of values: { *x*, 1} Stage values *x = UCPTfan-Config.level_n*
{ 0.0, -1} Automatic
{127.5, -1} Invalid value
Presetting: Invalid value {0xFF, 0xFF}

`nvoCmSync` control for spega SpaceComfortController and synchronization between spega CommandModul objects

Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: Invalid value {32767, HVAC_NUL, HVAC_NUL, 32767, 32767, 255, 255, 255, 255, 255, 255, 255, 255, 255, 255}

Configuration parameters

Parametrization of the network variables

`SCPTmaxSendTime` Maximum period of time between sending two telegrams

Type: SNVT_time_sec (SCPT #49)
Range of values: 0,0 ... 6553,4 Seconds
Presetting: 0,0 Seconds {0}

`UCPTtempMode` use of temperature value, influencing the sending behavior of temperature

Type: enumeration (UCPT #91)
Range of values: 1 TM_AVERAGE for use on average only cyclic sending
2 TM_INTERNAL as simply value send each change and cyclic if needed
255 TM_NUL sensor not used
Presetting: simpel value {2}

Parametrization of the object

`UCPTconfigState` only used by Plug-in

Type: unsigned (UCPT #117)
Range of values: -
Presetting: -

`SCPToffsetTemp` Measurement offset for temperature to calibrate the sensor

Type: SNVT_temp_p (SCPT #70)
Range of values: -5,00°C - +5,00°C
Presetting: 0,00°C

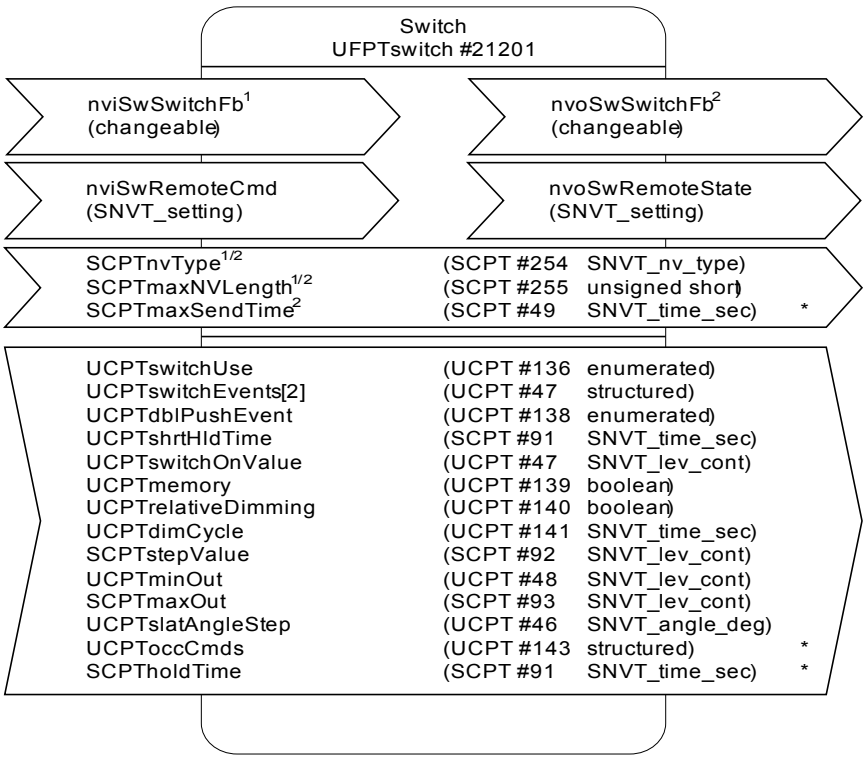
`UCPToccCmdOn`	Occupancy telegram on occupancy
Type:	SNVT_occupancy (UCPT #50)
Range of values:	0 OC_OCCUPIED Room occupied 2 OC_BYPASS Room temporary occupied
Presetting:	Room occupied {0}

`UCPTstptRange`	Range and increment for setpoint adjustment
Type:	structured (UCPT #145)
Range of values:	.min_range -5,00°C – 0,00°C .max_range 0,00°C - +5,00°C .step 0,5 K – 1,0 K
Presetting:	range of -3,00 to +3,00°C with increments of 0,5 K {-300, +300, 50}

`UCPTfanConfig`	Selectable fan stages
Type:	structured (UCPT #146)
Range of values:	.enable_auto 0 FALSE AUTO not used 1 TRUE AUTO selectable .enable_off 0 FALSE OFF not used 1 TRUE OFF selectable .level_1/.level_2/.level_3 0,0% Stage not used 0,5 - 100,0% Used value for the stage
Presetting:	AUTO an OFF selectable and 3 stages {TRUE, TRUE, 33.0%, 66.5%, 100,0%}

1.4.6 Switch

Network interface



Network variables

`nviSwSwitchFb` Feedback input
Type: Changeable
- SNVT_switch
- SNVT_setting

Default type: SNVT_setting
Range of values : Depends on nv type
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

`nviSwRemoteCmd` Simulation input
Type: SNVT_setting
Range of values : SNVT_setting
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

`nvoSwSwitch` Value output
Type: Changeable
- SNVT_switch
- SNVT_setting
- SNVT_occupancy*

Default type: SNVT_setting
Range of values : Depends on nv type
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}
Transmission: Adjustable via *SCPTmaxSendTime*

** This NV-typ is only selectable on devices with binary inputs*

`nvoSwRemoteState` Feedback of actual input state
Type: SNVT_setting
Range of values : SNVT_setting
Presetting: 0/OFF
{SET_OFF, 0.0, 0.00}

Configuration properties

Parametrization of network variables

`SCPTmaxNVLength` Maximum length of the network variable (read only)
Type: unsigned short (SCPT #255)
Presetting: 4 Byte {4}

`SCPTnvType` Type of network variable
Type: Structure (SCPT #254)
Range of values : supported NV-types
Presetting: SNVT_setting

`SCPTmaxSendTime` Maximum time between two telegrams
Validity: for *nvoSwSwitch*
Type: SNVT_time_sec (SCPT #48)
Range of values : 0 – 6553,4 Seconds
Presetting: 0 Seconds {0}

** This NV-typ is only selectable on devices with binary inputs*

Parametrization of functional object

`UCPTswitchUse` Only used by plug-in
Type: unsigned short (UCPT #195)

`UCPTdblPushEvent` Event for parallel pressing of both assigned buttons
Type: enumerated
Range of values : see *UCPTswitchEvents*
Presetting: no Event selected {EV_NO_MSG}

`UCPTshrtHldTime` Time limit between short and long hold action
Type: SNVT_time_sec (UCPT #91)
Range of values : 0,1 – 30,0 Seconds
Presetting: 0,5 Seconds

`UCPTswitchOnValue` Switch on value
Type: SNVT_lev_cont (UCPT #47)
Range of values : 0,0 – 100,0 %
Presetting: ON with 100% {100.0}

`SCPTstepValue` value step for dimming / drive
Type: SNVT_lev_cont (SCPT #92)
Range of values : 0,0 – 100,0 %
Presetting: 10% {20}

`UCPTslatAngleStep` angle step for slat turning
Type: SNVT_angle_deg (UCPT #46)
Range of values : -90,00° - +90,00°
Presetting: 10,00° {500}

`UCPTswitchEvents[2]` Events on press, hold and release of button(s)
Type: array of structured
Structure: for each button:
.push short pressing
.hold long pressing
.release release after short pressing
.release_late release after long pressing
Range of values : for each element/action:
-1 EV_NUL send invalid
0 EV_OFF switch off
1 EV_ON switch on
2 EV_DIM_DOWN dimm down
3 EV_DIM_UP dimm up
4 EV_STOP send stop
5 EV_SB_DOWN drive sunblind down
6 EV_SB_UP drive sunblind up
7 EV_SLAT_DOWN turn slat down
8 EV_SLAT_UP turn slat up
9 EV_TOGGLE toggle
10 EV_DIM dimm toggle
11 EV_SB_TOGGLE drive toggle
14 EV_NO_MSG send no message
Vorbelegung: send no messages

`UCPTrelativeDimming` decides the usage of relative dimming with NV-type SNVT_setting
Type: boolean

(UCPT #140)
Range of values : 0 BOOL_FALSE
no relative dimming
1 BOOL_TRUE
use relative dimming
Presetting: use relative dimming {BOOL_TRUE}

`UCPTminOut` lower limit for dimming and switching
Type: SNVT_lev_cont (UCPT #48)
Range of values : 0,0 ... 100,0%
Presetting: 0% {0}

`SCPTmaxOut` upper limit for dimming and switching
Type: SNVT_lev_cont (SCPT #93)
Range of values : 0,0 ... 100,0%
Presetting: 100% {200}

`UCPTdimm Cycle` Dimming cycle (Update rate on dimming)
Type: SNVT_time_sec
Range of values : 0,0 No dimming
0,5-.6553,4s Cycle time
Presetting: 0,5 s {5}

`UCPTmemory` decides the usage of memory for last switch on value
Type: boolean (UCPT #139)
Range of values : 0 FALSE
send *UCPTswitchOnValue*
1 TRUE
send memorised switch on value
Presetting: no memory use {0}

`UCPToccCmds*` Switch On and switch of values for NV-type SNVT_occupancy
Type: structured (UCPT #143)
Range of values : *.cmd_on / .cmd_off* SNVT_occupancy
Presetting: 'room occupied' on switch on and 'room unoccupied' on switch of {OC_OCCUPIED, OC_UNOCCUPIED}

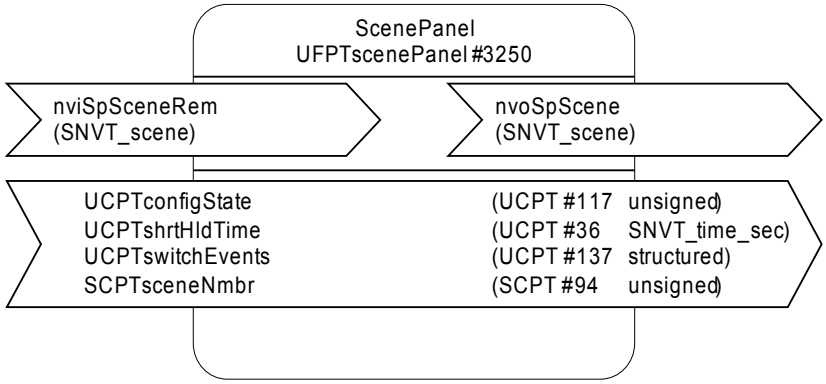
** This parameter is only available on devices with binary inputs*

`SCPTholdTime*` hold time for switch on state of binary input
Type: SNVT_time_sec
Range of values : 0,0 No hold time
0,5-.6553,4s Hold time
Presetting: 0,5 s {5}

** This parameter is only available on devices with binary inputs*

1.4.7 Scene Panel

Network interface



Network variables

`nviSpSceneRem` Scene input for remote scene buttons

Type: SNVT_scene
Range of values: SNVT_scene
Presetting: Invalid scene command {0, 0}

`nvoSpScene` Scene output

Type: SNVT_scene
Range of values: SNVT_scene
Presetting: Invalid scene command {0, 0}

Configuration parameters

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #117)
Range of values: 0 - 255
Presetting: 255 {255}

`UCPTshrtHld Time` Time threshold between the short and long hold function of the buttons

Type: SNVT_time_sec (UCPT #36)
Range of values: 0,1 – 30,0 Seconds
Presetting: 0,5 Seconds

`UCPTenable RemoteCtrl` Activation of scene buttons on remote control

Type: boolean {UCPT #103}
Range of values: 0 FALSE Buttons inactive
1 TRUE Buttons active
Presetting: Buttons inactive {0}

`UCPTswitch Events` Actions on push, reaching short hold time and releasing assigned buttons

Type: array of structured (UCPT #137)
Structure: For two buttons
.push Pushing .hold reaching short hold time
.release Releasing be-for short hold time reached
.release_late Releasing after short hold time reached
Range of values: For each element
12 EV_SCENE_RCL Recall scene
13 EV_SCENE_LRN Learn scene
14 EV_NO_MSG No action
Presetting: No actions

`UCPTsceneToButton` Allocation of scene numbers to scene buttons

Type: structured {UCPT #16}

Range of values: For each element:
0 No valid number
1 – 255 Scene number

Presetting: No valid numbers {0 … 0}

`SCPTsceneNmbr` Scene number of first scene button on remote control

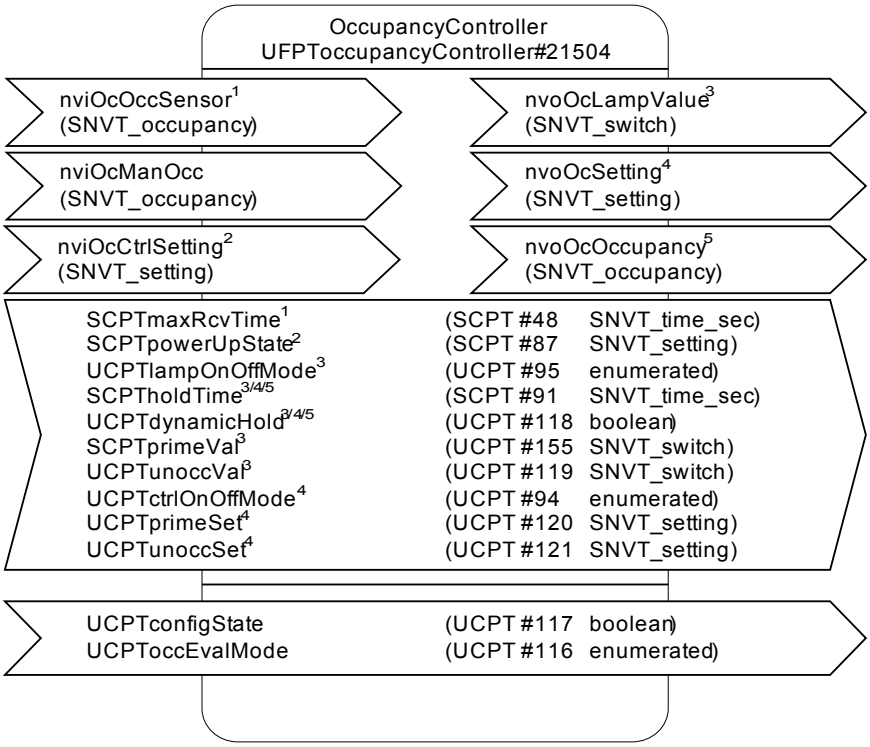
Type: unsigned {SCPT #94}

Range of values: 0 No valid number
1 – 255 Scene number

Presetting: No valid number {0}

1.4.8 Occupancy control

Network interface



Network variables

`nviOcOcc Sensor` Occupancy status of the room (sensor input)

Type: SNVT_occupancy

Range of values:
- 0 OC_OCCUPIED Room occupied
- 1 OC_UNOCCUPIED Room unoccupied

Presetting: Room unoccupied {1}

`nviOcCtrl Setting` Control input of controller

Type: SNVT_setting

Range of values: .setting
- -1 SET_NUL Reset the controller
- 0 SET_OFF Controller off
- 1 SET_ON Controller on

Presetting: *SCPTpowerupState*

`nviOcManOcc` Occupancy status of the room (manual input)

Type: SNVT_occupancy

Range of values:
- -1 OC_NUL Invalid value
- 0 OC_OCCUPIED Room occupied
- 1 OC_UNOCCUPIED Room unoccupied
- 2 OC_BYPASS Room temporary occupied
- 3 OC_STANDBY Room temporary unoccupied

Presetting: Room unoccupied {1}

`nvoOcSetting` output for controller control

Type: SNVT_setting

Range of values:
- *SCPTprimeVal* If room is occupied
- *UCPTunoccVal* If room is unoccupied

`nvoOc Occupancy` Evaluated occupancy

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED Room occupied
1 OC_UNOCCUPIED Room unoccupied
2 OC_BYPASS Room temporary occupied
3 OC_STANDBY Room temporary unoccupied

Presetting: Room unoccupied {1}

`nvoOcLamp Value` Switching output for actuator control

Type: SNVT_switch

Range of values:
UCPTprimeSet If room is occupied
UCPTunoccSet If room is unoccupied

Configuration parameters

Parametrization of the network variables

`SCPTmax RcvTime` Duration of validity for 'occupied' telegrams on *nviOcOccSensor*, serves parallel connection of several sensors

Type: SNVT_time_sec (SCPT #48)

Range of values: 0 ... 6553,4 Seconds

Presetting: 0 Seconds {0}

`SCPTpowerup State` Controller status after power restoration

Type: SNVT_setting

Range of values: See *nviOcCtrlSetting*

Presetting: Controller active {SET_ON, 100.0%, 0.00°}

`UCPTlampOn OffMode` Switching behavior of switching output

Type: enumerated {UCPT #95}

Range of values:
0 ONOFF Switch on and off
1 OFFONLY Switch off only

Presetting: Switch on and off {0}

`SCPTholdTime` Delay time before an 'unoccupied' telegram causes switch-off of the network output variable

Type: SNVT_time_sec (SCPT #91)

Range of values: 0 ... 6553,4 Seconds

Presetting: 10 Minutes (6000)

`UCPTdynamic Hold` Dynamic increase of the hold time

Type: boolean {UCPT #118}

Range of values:
0 FALSE No increase
1 TRUE Dynamic increase

Presetting: No increase {0}

`SCPTprimeVal` Value of switching output if room is occupied

Type: SNVT_switch

Range of values: SNVT_switch

Presetting: Switch on {100.0%, 1}

`UCPTunoccVal` Value of switching output if room is unoccupied

Type: SNVT_switch

Range of values: SNVT_switch

Presetting: Switch off {0.0%, 0}

`UCPTctrlOnOff Mode` Switching behavior of control output

Type: enumerated {UCPT #94}

Range of values:
0 ONOFF Switch on and off
1 OFFONLY Switch off only

Presetting: Switch on and off {0}

`UCPTprimeSet` Value of control output if room is occupied

Type: SNVT_setting

Range of values: SNVT_setting

Presetting: Switch on {SET_ON, 100.0%, 0.00°}

`UCPTonoccSet`	Value of control output if room is unoccupied
Type:	SNVT_setting
Range of values:	SNVT_setting
Presetting:	Switch off {SET_OFF, 0.0%, 0.00°}

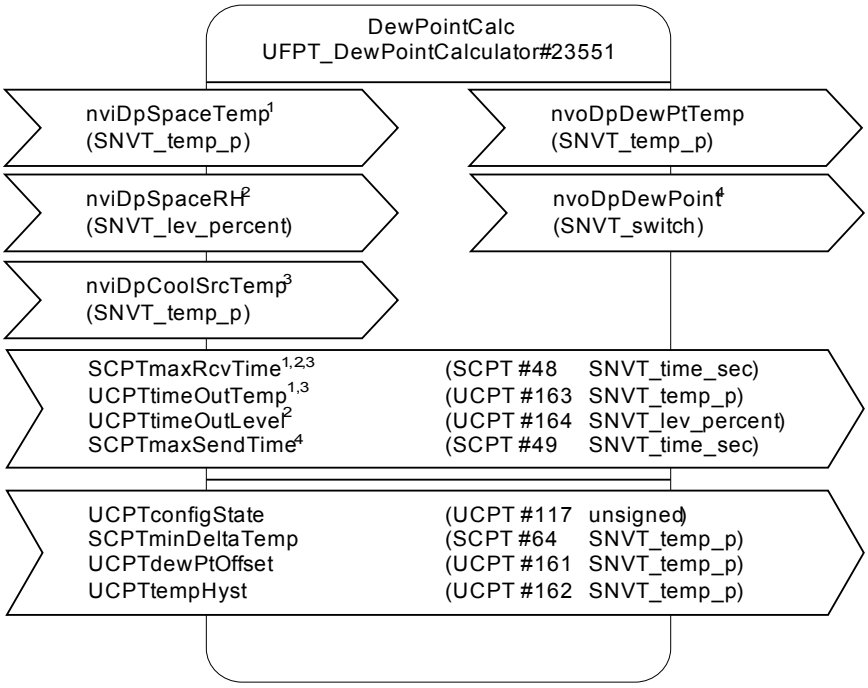
Parametrization of the object

`UCPTconfig State`	only used by Plug-in
Type:	unsigned short (UCPT #195)
Range of values:	-
Presetting:	-

`UCPToccEval Mode`	Reaction for changes on *nviOcOccSensor*
Type:	enumerated {UCPT #116}
Range of values:	0 AUTOONOFF Switch on and off 1 MANON_AUTOOFF Switch off only, switch on only via *nviOcManOcc*
Presetting:	Switch on and off {0}

1.4.9 Dew point calculation

Network interface



Network variables

`nviDpSpaceTemp` Room temperature

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nviDpSpaceRH` Relative humidity

Type: SNVT_lev_percent
Range of values: 0,00% - 100,00%
Presetting: Invalid value {32767}

`nviDpCoolSrcTemp` Temperature of cooling medium

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nvoDpDewPtTemp` Calculated temperature of cooling medium on reaching dew point

Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: Invalid value {32767}

`nvoDpDewPoint` Dew point signal output

Type: SNVT_switch
Range of values: {100.0%, 1} Dew point reached
{0.0%, 0} No condensation
Presetting: No condensation {0,0 0}

Configuration parameters

Parametrization of the network variables

`SCPTmaxRcv Time` Maximum time for receiving sensor values to detect sensor absence

Type: SNVT_time_sec {SCPT #48}

Range of values: 0 No detection
1 - 6553 Seconds

Presetting: No detection {0}

`UCPTtimeOut Temp` Value on sensor absence

Type: SNVT_temp_p {UCPT #163}

Range of values: SNVT_temp_p

Presetting: *nviDpSpaceTemp* 35,00°C {3500}
nviDpCoolSrcTemp 5,00°C {500}

`UCPTtimeOut Level` Value on sensor absence

Type: UNVT_lev_percent {UCPT #164}

Range of values: See *nviDpSpaceRH*

Presetting: 100,0% {20000}

`SCPTmaxSend Time` Maximum period of time between sending two dew point telegrams

Type: SNVT_time_sec {SCPT #49}

Range of values: 0 No periodic re-sent
0,5 - 6553,0 Seconds

Presetting: No periodic resend {0}

Parametrization of the object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #117)

Range of values: 0 - 255

Presetting: -

`SCPTminDelta Temp` Rounding value for *nvoDpDewPtTemp*

Type: SNVT_temp_p {SCPT #64}

Range of values: 0,00°C – 2,00°C

Presetting: 0,10°C {10}

`UCPTdewPt Offset` Safety distance to calculated dew point temperature

Type: SNVT_temp_p {UCPT #161}

Range of values: -5,00 K – +5,00 K

Presetting: 0 K

`UCPTtempHyst` Switchback hysteresis for dew point signal

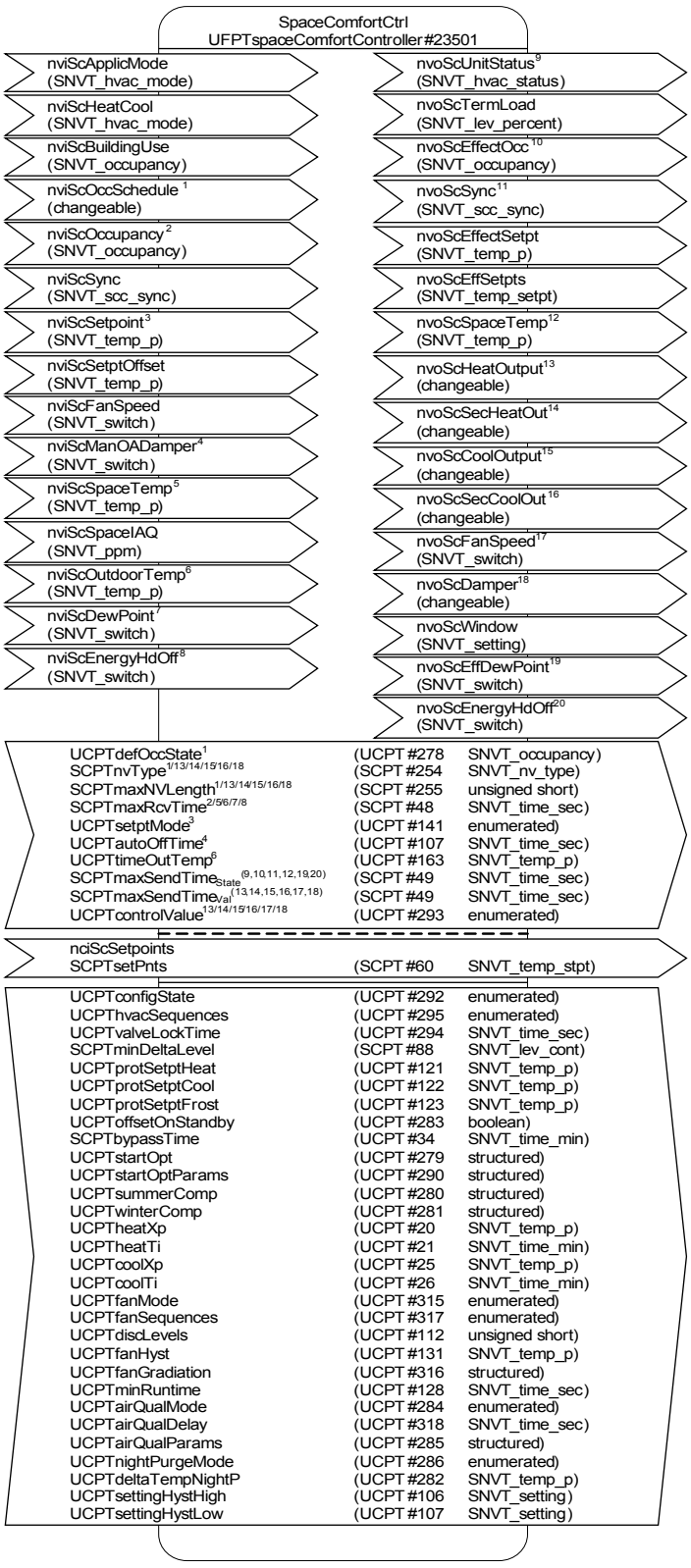
Type: SNVT_temp_p {UCPT #162}

Range of values: 0,20 K – 5,00 K

Presetting: 1,00 K {100}

1.4.10 Space comfort control

Network interface



Network variables

Input network variables

`nviScApplicMode` Central selection of controller function

Type: SNVT_hvac_mode

Range of values:
0 AUTO
Automatic
1 HEAT
Heating
2 MRNG_WRMUP
Quick warm up
3 COOL
Cooling
4 NIGHT_PURGE
Night purge
5 PRE_COOL
Night cooling
6 OFF
switch off
8 EMERG_HEAT
Emergency heating
12 MAX_HEAT
Maximum heating
16 EMERG_COOL
Emergency cooling
17 MAX_COOL
Maximum Cooling

Presetting: Automatic {0},
Last value stored in non-volatile memory

`nviScHeatCool` Local selection of controller function or external change-over signal for 2-pipe-systems

Type: SNVT_hvac_mode

Range of values:
0 AUTO Automatic (not for change-over)
1 HEAT Heating
3 COOL Cooling
6 OFF Switch off

Presetting: Automatic {0}

`nviScBuildingUse` Central default of building use

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED
Building in Use
1 OC_UNOCCUPIED
Building protected
3 OC_STANDBY
Building not used

Presetting: Building in use {0}

`nviScOccSchedule` Central room utilization plan

Type: changeable

Default type: SNVT_tod_event

Range of values: *.current_state/.next_state*
0 OC_OCCUPIED
Room occupied
1 OC_UNOCCUPIED
Room unoccupied
3 OC_STANDBY
Room in standby
.time_to_next_state
0 Next change unknown
0 – 65535 Minutes

Presetting: actual utilization see *UCPTdefOccState* and next change unknown {*UCPTdefOccState*,0,0}

`nviScOccupancy` Local room occupancy

Type: SNVT_occupancy

Range of values:
0 OC_OCCUPIED
Room occupied
1 OC_UNOCCUPIED
Room unoccupied
2 OC_BYPASS
Comfort extension
3 OC_STANDBY
Room in standby

Presetting: Room unoccupied {1}

`nviScSetpoint` Central setpoint (absolute or relative)

Type: SNVT_temp_p

Range of values: *Absolute*
15,00°C – 35,00°C
Relative
-10,00 K - +10,00 K

Presetting: *Absolute*
Depending on configured regulation sequenzes (see *UCPThvacSequences*)
HEAT: Comfort setpoint for heating
{*SCPTsetPnts.occupied_heat*}
COOL: Comfort setpoint for cooling
{*SCPTsetPnts.occupied_cool*}
else: Middle of deadband
{*SCPTsetPnts.occupied_heat*+(*SCPTsetPnts.occupied_cool*-*SCPTsetPnts.occupied_heat*)/2}
relativ
0 K {0}

`nviScSync` Control of the Regulator via CommandModul objects
Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: {0,0,0,0,0,0,0,0,0,0,0,0,0,0}

`nviScSetpt Offset` Local setpoint adjustment (relative)
Type: SNVT_temp_p
Range of values: 5,00 K - +5,00 K
Presetting: 0,00 K {0}

`nviScFanSpeed` Local fan command
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: Automatic {0.0%, -1}

`nviScMan Damper` Local fresh air command
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: Automatic {0.0%, -1}

`nviScSpace Temp` Room temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 20°C {2000}

`nviScSpaceIAQ` Air quality
Type: SNVT_ppm
Range of values: SNVT_ppm
Presetting: 0 ppm {0}

`nviScOutdoor Temp` Outdoor temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 1°C higher than the frost alarm limit {UCPTprotStptFrost + 100}

`nviScDewPoint` Dew point signal for chilled ceiling
Type: SNVT_switch
Range of values: *.state*
0 Normal
1 Dew point reached
Presetting: Normal {0.0%, 0}

`nviScEnergyHd Off` Regulation interrupt (e.g. on open windows)
Type: SNVT_switch
Range of values: *.state*
0 No interrupt
1 Regulation interrupt
Presetting: No interrupt {0.0%, 0}

Output network variables

`nvoScUnit Status` Output of all controller manipulated variables
Type: SNVT_hvac_status
Range of values: SNVT_hvac_status
Presetting: {0,0,0,0,0,0,0}

`nvoScTermLoad` Output of current heating and cooling requirement
Type: SNVT_lev_percent
Range of values: -100,00% - 0,00%
Heating requirement
0,00% - 100,00%
Cooling requirement
Presetting: Neither heating nor cooling requirement {0}

`nvoScEffect Setpt` Feedback of current controller setpoint
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 0°C {0}

`nvoScEffect Occ` Output of current energy level
Type: SNVT_occupancy
Range of values: -1 OC_NUL
Building protection
0 OC_OCCUPIED
Comfort
1 OC_UNOCCUPIED
Economy
2 OC_BYPASS
Comfort extension
3 OC_STANDBY
Standby
Presetting: Building protection {-1}

`nvoScEff Setpts` Feedback of all current setpoints (for each energy level and regulation sequence)
Type: SNVT_temp_setpt
Range of values: each element SNVT_temp_p
Presetting: each 0°C {0,0,0,0,0,0}

`nvoScFanSpeed` Controller manipulated value for fans
Type: SNVT_switch
Range of values: SNVT_switch
Presetting: 0 % {0}

`nvoScSpace Temp` Feedback of averaged space temperature
Type: SNVT_temp_p
Range of values: SNVT_temp_p
Presetting: 0°C {0}

`nvoScHeat Output` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSecHeat Out` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScCool Output` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSecCool Out` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScSync` Output of controller manipulated variables for visualization and synchronization of CommandModul objects
Type: UNVT_scc_sync
Range of values: UNVT_scc_sync
Presetting: {0,0,0,0,0,0,0,0,0,0,0,0,0,0}

`nvoScDamper` Controller manipulated value, meaning depends on *UCPTcontrolValue*
Type: changeable
Default type: SNVT_lev_percent
Range of values: -100,00 % - +100,00%
Presetting: 0 % {0}

`nvoScWindow` Controller manipulated value for controllable windows
Type: SNVT_setting
Range of values: *UCPTsettingHystHigh* Open command
UCPTsettingHystLow Close command
Presetting: 0 % {0,0, 0}

`nvoScEffDew Point` Feedback of current dew point informations (OR-function over all sources)
Type: SNVT_switch
Range of values: see *nviScDewPoint*
Presetting: 0 % {0, 0}

`nvoScEnergyHd Off` Feedback of current regulation interrupts (OR-function over all sources)
Type: SNVT_switch
Range of values: see *nviScEnergyHdOff*
Presetting: 0 % {0, 0}

Configuration parameters

Parametrization of the network variables

`UCPTtimeOut Temp` Value for the temperature on missing telegrams
Type: SNVT_temp_p (UCPT #163)
Range of values: SNVT_temp_p
Presetting: -1°C {-100}

`UCPTdefOcc State` Value for room utilization after Reset
Type: SNVT_occupancy
Range of values: see nviScOccupancy
Presetting: Room unoccupied {1}

`SCPTmax NVLength` Maximum length of the network variable (constant)
Type: unsigned short (SCPT #255)
Presetting: *nviScOccSchedule: 4 Byte {4}*
Value output variables: 2 Byte {2}

`SCPTnvType` Type of the network variable
Type: Structured (SCPT #254)
Range of values: Supported NV-types
Presetting: *nviScOccSchedule:* SNVT_tod_event {0,0,0,0,0,0,0,0,128, NVT_CAT_REFERENCE,4 ,0,0,0}
Value output variables: SNVT_lev_percent {0,0,0,0,0,0,0,0,81, NVT_CAT_REFERENCE,2 , 5L, -3L, 0L}

`SCPTmaxSend Time (States)` Maximum period of time between sending two telegrams on one of the status outputs
Type: SNVT_time_sec (SCPT #49)
Validity: One shared time for:
- *nvoScUnitStatus*
- *nvoScEffectOcc*
- *nvoScSync*
- *nvoScSpaceTemp*
- *nvoScEffDewPoint*
- *nvoScEnergyHdOff*

Range of values: 0 No periodic resend
1 - 6553 Seconds
Presetting: No periodic resend {0}

`SCPTmaxSend Time (Values)` Maximum period of time between sending two telegrams on one of the value outputs
Type: SNVT_time_sec (SCPT #49)
Validity: One shared time for:
- *nvoScHeatOutput*
- *nvoScSecHeatOut*
- *nvoScCoolOutput*
- *nvoScSecCoolOut*
- *nvoScFanSpeed*
- *nvoScDamper*

Range of values: 0 No periodic resend
1 - 6553 Seconds
Presetting: no periodic resend {0}

`UCPTautoOff Time` Period of validity for local fresh air requests until return to automatic
Type: SNVT_time_sec (UCPT #107)
Range of values: 0 No automatic return
>0 Seconds until return
Presetting: No automatic return {0}

`UCPTcontrol Value` Selection of the meaning for the value outputs
Type: enumerated (UCPT #293)
Range of values:
0 OFF
No meaning / not used
1 HEAT
Heating sequence
2 COOL
Cooling sequence
3 HEAT_COOL
Heating/Cooling sequence
4 HEAT_COOL_SIG
Heating/Cooling sequence for 6-way-valves
5 HEAT_LOCK
Sperrventil Heizsequenz
6 COOL_LOCK
Sperrventil Kühlsequenz
7 CHANGEOVER _HEAT_COOL
Valve to change from heating to cooling
8 CHANGEOVER _COOL_HEAT
Valve to change from cooling to heating
9 IAQ
Air quality
10 HEAT_IAQ
Heating sequence & air quality
11 COOL_IAQ
Cooling sequence & air quality
12 HEAT_COOL_IAQ
Heating/Cooling sequence & air quality
13 FAN
Ventilator
14 OAD
Outdoor air damper
15 OAD_IAQ
Outdoor air damper & air quality
16 CHANGEOVER_SIG
6-way valve for changeover between cooling & heating
Presetting: Not used {0}

`UCPTsetptMode` meaning of values on *nviScSetpoint*
Type: enumerated (UCPT #141)
Range of values: 0 RELATIVE relative values
1 ABSOLUTE absolute values
Presetting: absolute values {1}

`SCPTmax RcvTime` Validity duration of telegrams received on the network variables, for *nviScSpaceTemp*, *nviScOccupancy*, *nviScEnergyHdOff* and *nviScDewPoint*: to collect values from more than one source, for *nviScOutdoorTemp* detect missing telegrams

Type: SNVT_time_sec (SCPT #48)
Range of values: 0 ... 6553 seconds
Presetting: 0 seconds {0}

Parametrization of the functional object

`SCPTsetPnts` Central setpoints for each energy level and regulation sequence, changeable via *nciSetpoints*

Type: SNVT_temp_setpt (SCPT #60)
Range of values: each element 10,00°C – 40,00°C
Presetting: Comfort cooling stpt 23°C
Standby cooling stpt 25°C
Economy cooling stpt 28°C
Comfort heating stpt 21°C
Standby heating stpt 19°C
Economy heating stpt 16°C
{2300, 2500, 2800, 2100, 1900, 1600}

`UCPTconfig State` only used by Plug-in

Type: unsigned short (UCPT #195)
Range of values: 0 - 255
Presetting: 255 {255}

`SCPTminDelta Level` Minimum of absolute value change causing the value to be re-sent

Type: SNVT_lev_cont (SCPT #88)
Range of values: 0,00% - 20,00 %
Presetting: 0,05% {10}

`UCPTprotSetpt Heat` Heating setpoint for building protection

Type: SNVT_temp_p (UCPT #121)
Range of values: 0,00°C – 50,00°C
Presetting: 12,00°C {1200}

`UCPThvac Sequences` Selection of sequences to be regulated

Type: enumerated (UCPT #295)
Range of values:
-1 NUL
No regulation
0 HEAT
Heating sequence
1 COOL
Cooling sequence
2 HC_AUTO
Heating & cooling sequence with automatic change over
3 HC_EXT
Heating & cooling sequence with external change over
Presetting: No regulation {-1}

`UCPTvalveLock Time` valve off-time on sequence change

Type: SNVT_time_sec (UCPT #294)
Range of values: 0 No off-time
0,5 – 900,0 Seconds off-time
Presetting: no off-time {0}

`UCPTprotSetpt Cool` Cooling setpoint for building protection

Type: SNVT_temp_p (UCPT #122)
Range of values: 0,00°C – 50,00°C
Presetting: 40,00°C {4000}

`UCPTprotSetpt Frost` Temperature limit for activation of frost alarm

Type: SNVT_temp_p (UCPT #123)
Range of values: 0,00°C – 50,00°C
Presetting: 6,00°C {600}

`UCPToffsetOn Standby` Determine the use of the local setpoint adjustment on standby

Type: boolean (UCPT #283)

Range of values:
0 FALSE Use for both sequences
1 TRUE Used only for the sequence, where it make sens in energetic aspect

Presetting: Use for both sequences {0}

`SCPTbypass Time` Duration of comfort extension

Type: SNVT_time_min (SCPT #34)

Range of values:
0 no extension
1 - 600 Minutes

Presetting: No comfort extension {0}

`UCPTstartOpt` Configuration of the start optimization

Type: structured (UCPT #279)

Range of values:
.mode
0 AUTO For heating and cooling sequence
1 HEAT For heating sequence only
3 COOL For cooling sequence only
6 OFF No start optimization
.max_time
5 - 360 Minutes
.heat_weekend_ext
0,0% - 100,0%
.learn_enable
0 FALSE No self learning
1 TRUE Self learning

Presetting: No start optimization {6, 120, 60, 1}

`UCPTstartOpt Params` Current used parameters of start optimization (adapted by self learning if active)

Type: structured (UCPT #290)

Range of values: for each element
0 - 2000 Minutes

Presetting: {30, 10, 30, 10}

`UCPTsummer Comp` Parameters of summer compensation

Type: structured (UCPT #280)

Range of values:
.min_temp / .max_temp
20,00°C – 50,00°C
.max_offset
0,00 K No summer compensation
>0,00 K Maximum setpoint increase

Presetting: No summer compensation {2600, 3200, 0}

`UCPTwinter Comp` Parameters of winter compensation

Type: structured (UCPT #281)

Range of values:
.min_temp / .max_temp
-20,00°C – 10,00°C
.max_offset
0,00 K No winter compensation
>0,00 K Maximum setpoint increase

Presetting: No winter compensation {0, -1000, 0}

`UCPTheatXp` Proportional band for heating sequence (PI-regulation) or hysteresis width (2-point-regulation)

Type: SNVT_temp_p (UCPT #20)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTheatTi` Integral time for heating sequences (PI-regulation)

Type: SNVT_time_min (UCPT #21)

Range of values:
0 2-Point-regulation
1 – 360 Minutes

Presetting: 30 Minutes {30}

`UCPTcoolXp` Proportional band for cooling sequence (PI-regulation) or hysteresis width (2-point-regulation)

Type: SNVT_temp_p (UCPT #25)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTcoolTi` Integral time for cooling sequence (PI-regulation)

Type: SNVT_time_min (UCPT #26)

Range of values: 0 2-Point-regulation
1 – 360 Minutes

Presetting: 30 Minutes {30}

`UCPTfanMode` Selection of fan control

Type: enumerated (UCPT #315)

Range of values: 0 OFF
No fan regulation
1 SPACE_TEMP
Temperature depended regulation
2 VALVE_POS
Valve position depended regulation

Presetting: Temperature depending fan regulation {1}

`UCPTfan Sequences` Selection of regulation sequences for fan control

Type: enumerated (UCPT #317)

Range of values: 0 HEAT Heating sequence
1 COOL Cooling sequence
2 HEAT_COOL Heating & cooling sequence

Presetting: Heating & cooling sequence {2}

`UCPTdisc Levels` Fan stage count

Type: unsigned short (UCPT #112)

Range of values: 0 continuous fan
1 – 3 stage count

Presetting: Fan with 3 stages {3}

`UCPTfanHyst` Hysteresis steps for temperature depended fan regulation

Type: SNVT_temp_p (UCPT #131)

Range of values: 0,50 K – 4,00 K

Presetting: 0,50 K {50}

`UCPTfan Gradiation` Lower limits of fan stages and there hysteresis width for valve position depended fan regulation

Type: structured (UCPT #316)

Range of values: *.stage1 / .stage2 / .stage3*
0,0% – 100,0%
.hyst
0,5% - 20,0%

Presetting: Stage 1 starting with 5,0%,
Stage 2 starting with 33,0%
Stage 3 starting with 66,5%
Hysteresis width 5,0%
{10, 66, 133, 10}

`UCPTmin Runtime` Minimum runtime per stage before stage change

Type: SNVT_time_sec (UCPT #128)

Range of values: 0 No minimum runtime
1 - 3600 Seconds

Presetting: No minimum runtime {0}

`UCPTairQual Mode` Selection of air quality control

Type: enumerated (UCPT #284)

Range of values: 0 OFF No air quality control
1 OCC occupancy depended air quality control
2 IAQ continuous air quality control

Presetting: occupancy depended air quality control {1}

`UCPTairQual Delay` Follow-up time for air quality control after the room occupation changes to unoccupied

Type: SNVT_time_sec (UCPT #318)

Range of values: 0 No follow-up time
1 – 6553 Seconds

Presetting: No follow-up time {0}

`UCPTairQual Params` Air quality limits and position range for air quality control

Type: structured (UCPT #285)

Range of values: *.v_min* / *.v_max*
0,0% - 100,0%
with: *.v_min* < *.v_max*
.co2_limit / *.co2_max*
100 ppm – 2000 ppm
with *.co2_limit* < *.co2_max*

Presetting: Minimum position 20%
Maximum position 100%
Lower limit 600 ppm
higher limit 1000 ppm
{40, 200,600, 1000}}

`UCPTnight PurgeMode` Selection of actuators used for night purge

Type: enumerated (UCPT #286)

Range of values:
0 OFF
No night purge
1 DAMPER
via central air condition
2 DAMPER_FAN
via fancoil with outdoor air damper
3 WINDOW
via window

Presetting: No night purge {0}

`UCPTdelta TempNight` Minimum temperature difference of outdoor air temp for night purge via outdoor air

Type: SNVT_temp_p (UCPT #282)

Range of values: 0,50 K – 10,00 K

Presetting: 2,00 K {200}

`UCPTsetting HystHigh` Open command for window

Type: SNVT_setting (UCPT #106)

Range of values: SNVT_setting

Presetting: open
{SET_DOWN, 100.0, 0.00}

`UCPTsetting HystLow` Close command for window

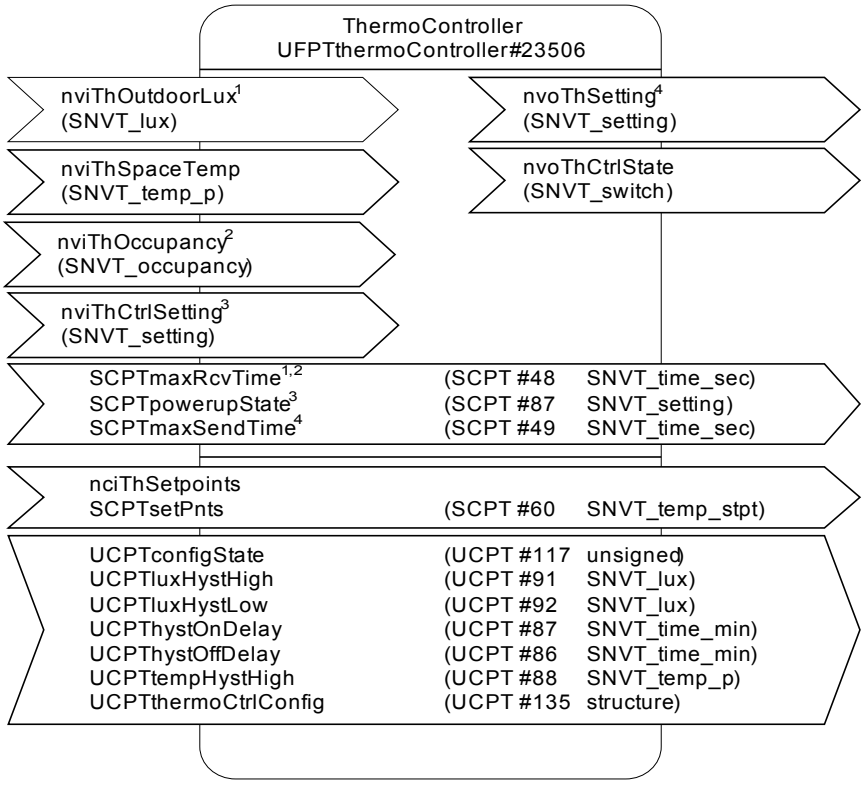
Type: SNVT_setting (UCPT #107)

Range of values: SNVT_setting

Presetting: close
{SET_UP, 100.0, 0.00}

1.4.11 Thermal control

Network interface



Network variables

`nviThOutdoorLux` Outdoor brightness

Type: SNVT_lux
Range of values: 0 – 65535 lux
Presetting: 0 lux

`nviThSpaceTemp` Room temperature

Type: SNVT_temp_p
Range of values: 0,00°C – 60,00°C
Presetting: 20,00°C {2000}

`nviThCtrlSetting` Control input for activation and deactivation of the controller

Type: SNVT_setting
Range of values: *.state*
-1 SET_NUL Automatic
0 SET_OFF Deactivation
1 SET_ON Activation
Presetting: *SCPTpowerupState*

`nviThOccupancy` Actual room occupancy

Type: SNVT_occupancy
Range of values: 0 OC_OCCUPIED Room occupied
1 OC_UNOCCUPIED Room unoccupied
2 OC_BYPASS Comfort extension
3 OC_STANDBY Room in standby
Presetting: Room unoccupied {1}

`nvoThCtrlState` Feedback of controller activity

Type: SNVT_switch
Range of values: { 0, 0} Thermal control inactive
{200, 1} Thermal control active
Presetting: Inactive {0, 0}

`nvoThSetting` Sunblind operating commands to support heating/cooling

Type: SNVT_setting

Range of values: {SET_NUL, 0.0, 0.00}
No valid command/ priority reset
And values from *UCPTthermoCtrlConfig*

Presetting: No valid command {SET_NUL, 0.0, 0.00}

Configuration parameters

Parametrization of the network variables

`SCPTmax RcvTime` Maximum time for receiving sensor values on *nviThOccupancy,* used to combine telegramms from different sources with an OR-function

Type: SNVT_time_sec (SCPT #48)

Range of values: 0 – 6553 Seconds

Presetting: 0 Seconds {0}

`SCPTmaxSend Time` Maximum period of time between sending two telegrams on *nvoThSetting*

Type: SNVT_time_sec (SCPT #49)

Range of values: 0 No periodic re-sent
1 - 6553 Seconds

Presetting: No periodic re-sent {0}

`SCPTpowerUp State` Status of the controller after power restoration

Type: SNVT_setting

Range of values: See *nviThCtrlSetting*

Presetting: Automatic {SET_NUL, 0.0, 0.00}

Parametrization of the object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short (UCPT #195)

Range of values: 0 - 255

Presetting: 255 {255}

`SCPTsetPnts` Setpoints for heat/cool support,
can be changed via *nciThSetpoints*

Type: SNVT_temp_setpt

Range of values: Only .occupied_x relevant, each element:
0,00°C – 50,00°C

Presetting: Comfort cool setpoint 23°C
Comfort heat setpoint 21°C
{2300, 0, 0, 2100, 0, 0}

`UCPTluxHyst High` Activation treshold value of light intensity

Type: SNVT_lux

Range of values: 0 - 65535 lux

Presetting: 20000 lux {20000}

`UCPTluxHyst Low` Deactivation treshold value of light intensity

Type: SNVT_lux

Range of values: 0 - 65535 lux

Presetting: 5000 lux {5000}

`UCPThystOn Delay` Delay on activation

Type: SNVT_time_min

Range of values: 0 - 360 Minutes

Presetting: 10 Minutes {10}

`UCPThystOff Delay` Delay on deactivation

Type: SNVT_time_min
Range of values: 0 - 360 Minutes
Presetting: 20 Minutes {20}

`UCPTtempHyst High` Temperature hysteresis

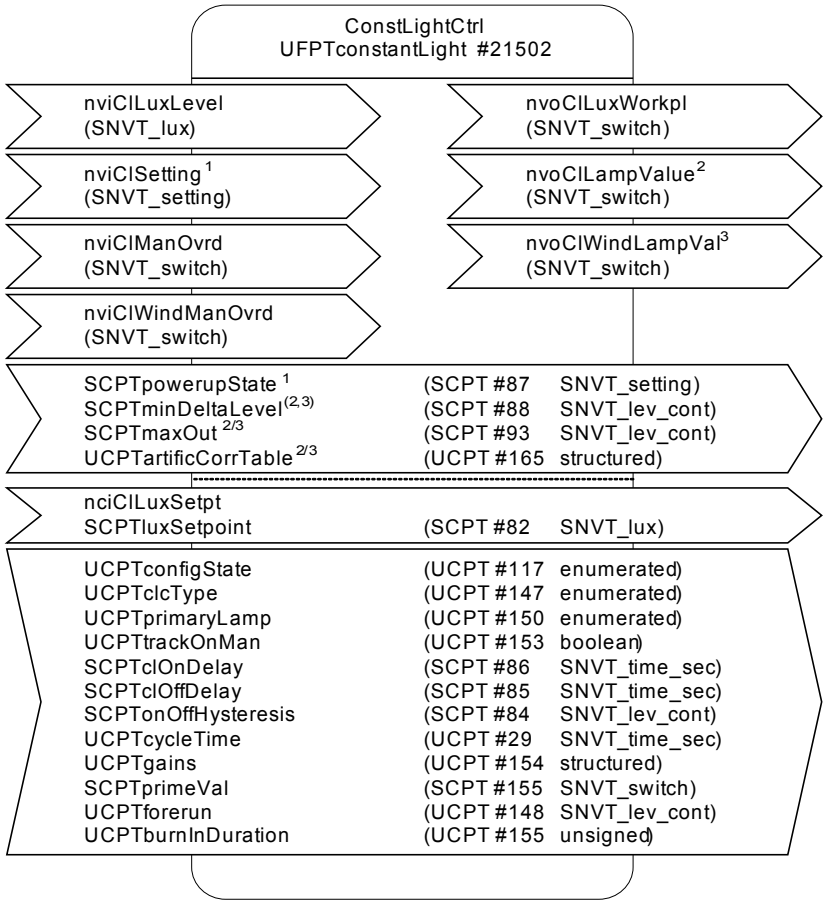
Type: SNVT_temp_p
Range of values: 0,5 K - 5,00 K
Presetting: 1 K {100}

`UCPTthermo CtrlConfig` Sunblind operating commands

Type: structured
Range of values: Each element: SNVT_setting
Presetting: Top end position for heat support, bottom end position with closed slat for cool support and priority reset on deactivation {{SET_STATE,0,0}, {SET_STATE,200,-2250}, {SET_NUL,0,0}}

1.4.12 Light control

Network interface



Network variables

`nviClLuxLevel` Room brightness input

Type: SNVT_lux

Range of values: 0 – 65535 lux

Presetting: 0 {0}

`nviClSetting` Control input

Type: SNVT_setting

Range of values:
- SET_OFF Controller inactive
- SET_ON Controller active
- SET_UP Increase setpoint
- SET_DOWN Decrease setpoint

Presetting: *SCPTdefaultSetting*

`nviClManOvrd` Manual override of inner light strip

Type: SNVT_switch

Range of values: *.value*
0,0% - 100,0%
.state
0 Light off
1 Light *value* % on
-1 Automatic control

Presetting: Automatic control {0.0, -1}

`nviClWindMan Ovrd` Manual override of outer light strip (close to window)

Type: SNVT_switch

Range of values: *.value*
0,0% - 100,0%
.state
0 Light off
1 Light *value* % on
-1 Automatic control

Presetting: Automatic control {0.0, -1}

`nvoClLux Workpl` Calculated brightness at workplace

Type: SNVT_lux

Range of values: 0 – 65535 lux

Presetting: 0 {0}

`nvoClLamp Value` Value for inner light strip

Type: SNVT_switch

Range of values: *.value*
0,0% - 100,0%
.state
0 Light off
1 Light *value* % on

Presetting: Light off {0.0, 0}

`nvoClWindLamp Val` Value for outer light strip (close to window)

Type: SNVT_switch

Range of values: *.value*
0,0% - 100,0%
.state
0 Light off
1 Light *.value* % on

Presetting: Light off {0.0, 0}

Configuration parameters

Parametrization of the network variables

`SCPTpowerup State` Controller status after power restoration

Type: SNVT_setting
{SCPT #87}

Range of values: See *nviClSetting*

Presetting: Controller inactive
{SET_OFF, 0.0, 0.00}

`SCPTmaxOut` Maximum value for each light strip in constant light mode

Type: SNVT_lev_cont
{SCPT #93}

Range of values: 0,0 – 100,0 %

Presetting: 100,0 % {200}

`SCPTminDelta Level` Minimum deviation required to send a new dimming telegram

Type: SNVT_lev_cont
{SCPT #88}

Validity: Shared value for
- *nvoClLampValue*
- *nvoClWindLampVal*

Range of values: 0,0% – 10,0%

Presetting: 0,5 % {1}

`UCPTartific CorrTable` Correction of brightness depending on part of artifice light for each light strip

Type: structured
{UCPT #165}

Range of values: *.base[x]*
0-100% Interpolation point (SNVT_lev_cont)
.delta[x]
-1000 – 1000 lux
Correction at interpolation point

Presetting: No correction
{0, 80, 140, 160, 180, 200, 0,0,0,0,0,0}

Parametrization of the object

`UCPTconfig State` Only used by Plug-in

Type: unsigned short
(UCPT #195)

Range of values: 0 - 255

Presetting: 255 {255}

`UCPTcycle Time` Cycle for dimm steps

Type: SNVT_time_sec
{UCPT #29}

Range of values: 0,5 – 6553,5 Seconds

Presetting: 5 Seconds {10}

`UCPTclcType` Operation mode

Type: enumerated {UCPT #147}

Range of values:
0 CONST Constant light control (1 and 2 light strips)
1 ONOFF_1 Daylight switching (1 light strip)
2 ONOFF_2 Daylight switching (2 light strips)

Presetting: Constant light control {0}

`SCPTlux Setpoint` Setpoint for workplace brightness, parameter can be changed over the network by *nciClLuxSetpt*

Type: SNVT_lux {SCPT #82}

Range of values: 0 – 1500 lux

Presetting: 500 lux {500}

`UCPTprimary Lamp` Selection of primary light strop

Type: enumerated {UCPT #150}

Range of values:
0 LAMP Inner light strip
1 WINDOW_LAMP Outer light strip (close to window)

Presetting: Inner light strip {0}

`UCPTgains` Dimm steps for constant light mode

Type: structured {UCPT #154}

Range of values: *.gain_up* / *.gain_down* 0,5% - 50,0%

Presetting: each 2% {4, 4}

`SCPTclOn Delay` Switch-on delay on active control

Type: SNVT_time_sec {SCPT #86}

Range of values: 0,0 – 6553,5 Seconds

Presetting: 5 Seconds {50}

`SCPTclOff Delay` Switch-off delay on active control

Type: SNVT_time_sec {SCPT #85}

Range of values: 0,0 – 6553,5 Seconds

Presetting: 5 Minutes {3000}

`SCPTonOff Hysteresis` Hysteresis for switching on and off in constant light mode or surcharge coefficient on brightness measurement to calculate switch-of limit in daylight switching mode

Type: SNVT_lev_cont {SCPT #84}

Range of values:
0 No automatic switching
0,5%-100,0% Under/Over setpoint

Presetting: No automatic switching {0}

`SCPTprimeVal` Starting value on switch-on in constant light mode or switch-on value in daylight switching mode

Type: SNVT_switch {SCPT #155}

Range of values:
{0.0, -1} Automatic calculation
{x%, 1} Switch-on with x: 0,5% - 100,0%

Presetting: Automatic calculation {0, -1}

`UCPTtrackOn Man` Specifies automatic tracking of secondary light strip on manual override of primary light strip

Type: boolean {UCPT #153}

Range of values:
0 FALSE No tracking
1 TRUE Tracking

Presetting: No tracking {0}

`UCPTforerun` Forerun of primary light strip on dimm-up the tracked light strip in constant light mode

Type: SNVT_lev_cont {UCPT #148}

Range of values: 0,0% – 100,0%

Presetting: 30,0% {60}

`UCPTburnIn Duration` Duration of burn-in for lamps

Type: unsigned short {UCPT #155}

Range of values:
0 No burn-in
1 - 255 Hours

Presetting: No burn in {0}