

Software Description – SRCA_16_1_01 for SRC-04-FTT and SRC-65-FTT



1 Overview

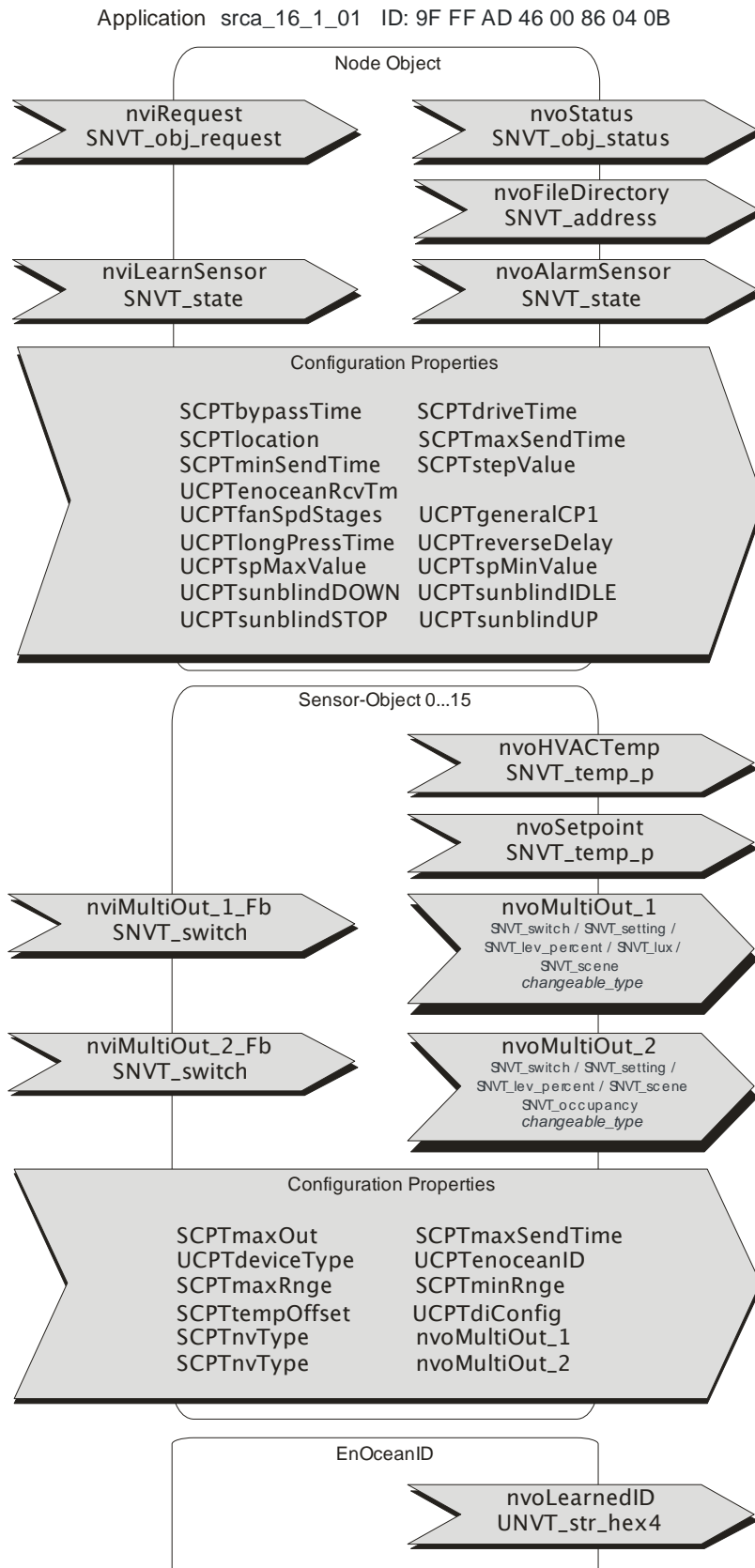
The application enables the receipt and evaluation of max. 16 EnOcean wireless sensors. The following sensor types are supported:

- Room operating panel
 - o temperature detection, set point adjustment, room occupancy, fan stage adjustment
 - o e.g. SR04/SR07, SR04PST, SR04PS MS: P – set point, S – fan stage, T – button, MS – slide switch
 - o with humidity e.g. SR04 rH, SR04P rH, SR04PT rH, SR04P MS rH: P – set point, T – button, MS – slide switch
- Temperature detection
 - o temperature detection
 - o e.g. SR65, SR65 TF, SR65 AKF, SR65 VFG
- CO2 detection
 - o CO2 detection
 - o e.g. SR04 CO2
- Light sensor
 - o outdoor light sensor
 - o SR-LI Outdoor
- Digital contact
 - o dry, digital contact
 - o E.g. SR65-DI
- Movement detection
 - o room occupancy
 - o SR PIR 360°
- Movement and light detection
 - o room occupancy, light sensor
 - o SR MDS - SensoLux
- window contact
 - o SRW01
 - o Opened/Closed
 - o SRG01 - SecuSignal®- Window Handle
 - o change of window position Opened/Tilted/Closed
- Wireless chair
 - o room occupancy
- EasyFit, EasySense Tactile Sensors
 - o switch function, dim function, blind, shutters, scene polling, automation
- Wireless actuator

The application uses standard network variables (SNVT) and standard configuration properties (SCPT). For extended adjustment options, user-defined configuration properties (UCPT) are used. The UCPTs used are

defined in the Thermokon Device Resource Files from Version 2.1 or higher and should be installed on the PC before making up the device defaults by the installation tool.

2 Overview of Network Variables



3 General Remarks for Installation:

3.1 Manual Input of Sensor Data

- Step 1: Register device type in UCPTdeviceType (7 = SR04/ SR65, 6 = SRW01...)
 Step 2: Adjust the SNVT-type of nvoMultiOut (SNVT_switch or SNVT_lev_percent), if required
 Step 3: Check adjustments of SCPTnvType (see page 5)
 Step 4: Register the 32-Bit Sensor-ID (see device label) in UCPTemoceanID, e.g. 00,00,A0,43

3.2 Installation by Learning Button

- Step 1: Register device type in UCPTdeviceType
 Step 2: Adjust the SNVT-type of nvoMultiOut (SNVT_switch, SNVT_setting, SNVT_lux, SNVT_lev_percent, SNVT_occupancy)
 Step 3: Check adjustments of SCPTnvType
 Step 4: Set the requested sensor object in the learn mode by means of nviLearn_Sensor (see below, Node Object)
 Step 5: Actuate learn button on the sensor. ==> All bits of nviLearn_Sensor are set back to „0“.
 Step 6: Contrary to the manual registration, where the ID is directly written into the device and the LNSdatabase, it is only possible to store the sensor ID in the SRC receiving module upon installation by the learn button. To check the ID there are two ways:
1. In order to take over the IDs into the database, the receiver must be recommissioned by the adjustment „Current Values in Device“ or
 2. The sensor ID which was latest learned in is stored in nvoLearnedID, so register nvoLearnedID in UCPTenoceanID

Example LonMaker:

The screenshot shows a configuration window with two main sections:

- State:** Contains four radio buttons: ☐ Default, ☐ Offline, ☒ Online, and ☐ Disable.
- Source of Configuration Property Values:** Contains three radio buttons: ☐ Current values in database, ☐ Default values, and ☒ Current values in device.

3.3 Installation by Plug-In

With Plug-In device could be configured and sensors could be learnt-in.

3.4 Clearing of a Sensor

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

3.5 Device Types UCPTdeviceType

The following devices are available:

Universal Temperature sensor – Profile 63 Type xx ORG 7

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

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

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

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

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

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

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

Digital Input – Profile A5-30-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
Digital input			
Digital input (SR65 DI)	48017	A5-30-01	
Digital input (MC)	48027	A5-30-02	

Light Sensor– Profile A5-06-xx

Device	UCPTdeviceType - Type	EnOcean Profiles (EEP)	Equipment
SR65 LI			
Ligth sensor (SR65 LI)	6017	A5-06-01	
Ligth sensor (TAP)	6027	A5-06-02	

Motion Sensor– Profile A5-07-xx

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

Light and Motion– Profile A5-08-xx

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

Gas– Profile A5-09-xx

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

Wireless actuator – Profile A5-20-xx

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

Window Contact – ORG 6

Device	UCPTdeviceType - Type
SRW01	
Window contact (SRW01)	6

Universal Switch – ORG 5

Device	UCPTdeviceType - Type
Universal switch	5

Wireless Chair – ORG 5

Device	UCPTdeviceType - Type
Room occupancy	501

Window Handle – ORG 5

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

Steute Switch – ORG 5

Device	UCPTdeviceType - Type
Monitoring (SR-KCS)	504

KeyCard – ORG 5

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

3.6 Parameterisation of Button Functions with UCPTdiConfig

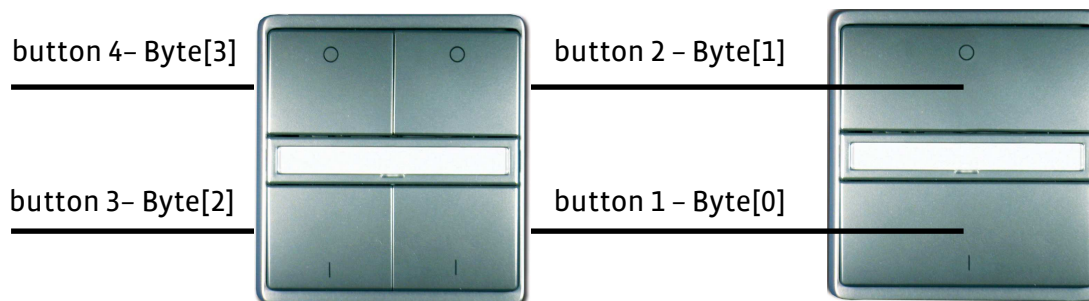
For parameterisation of the tactile sensors, the configuration property *UCPTdiConfig.Byte[0...3]* in the Objects is used.

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

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

3.7 Tactile Sensor

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



Example:

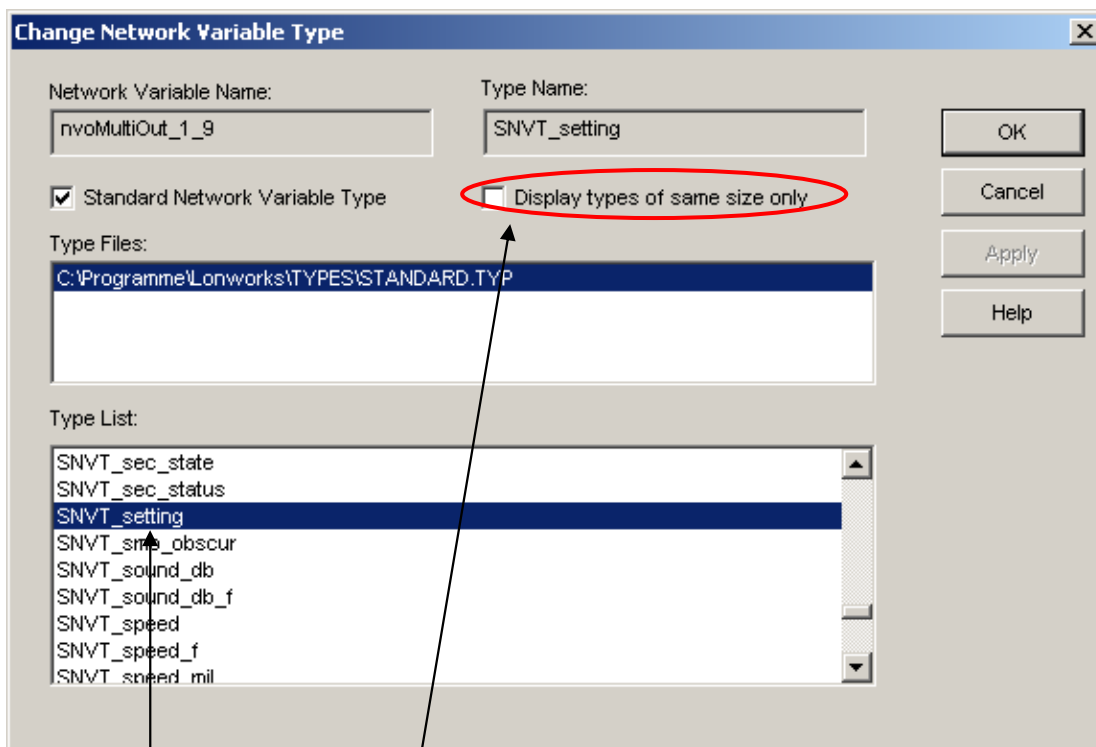
Tactile sensor in Sensor-Object 3:

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

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

3.8 Type Change from nvoMultiOut_1 / nvoMultiOut_2 and nviMultiIn_1 / nviMultiIn_2

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



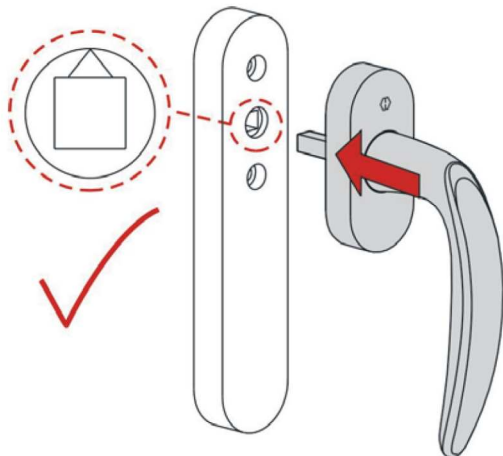
Picture 3-1: Type Change

Select SNVT Type

Deactivate the check mark

3.9 SecuSignal® Window Handle

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



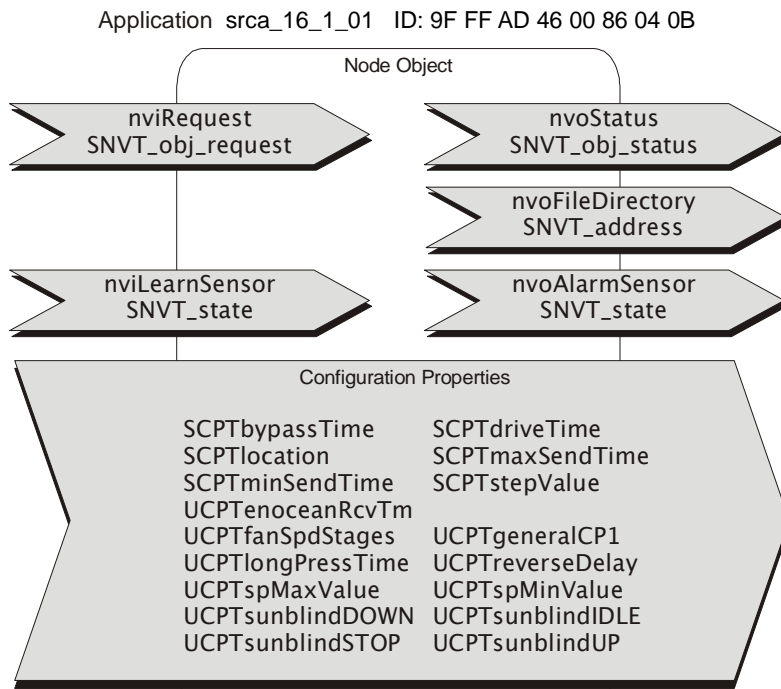
3.10 Sensors

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

4 Software Description

4.1 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 parameters for control and parameterisation of the SR-Sensor-Objects can be added.



Sensor Monitoring / Alarm Message:

If no telegram is received for a time exceeding the monitor time UCPTenoceanRcvTm, an alarm message is generated, whereas each sensor is allocated to a bit of the SNVT_state - variable nvoAlarmSensor and can be identified, thus. The alarm bits are cleared automatically by receiving the next associated telegram. Telegrams, keys, wireless chairs, SecuSignal - window handle are not monitored.

Set Point Adjustment:

The properties UCPTspMinValue and UCPTspMaxValue determine the output values with left and right stop of the set point potentiometer (e.g. -3 °C to +3 °C or 19°C to 25 °C).

Fan Speed Adjustment:

The rotary switch for fan speed adjustment can be parametrised by

UCPTfanSpdStages for one, two or three- fan stages and is output by nvoMultiOut_1.

Presence Key / Slide Switch:

The function of the after-running time for the wireless chair, presence key respectively the output of the slide switch is adjusted by SCPTbypassTime.

Installation:

If the sensors should be integrated by means of the learn button, each sensor object can be individually put into the learning mode by nviLearnSensor. Alternatively, the sensor ID in each object can also be manually written into the parameter UCPTenoceanID. The different device types (SR04/SR65, SRW01, wireless switch) are selected by UCPTdeviceType.

4.1.1 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.

nviLearnSensor

SNVT Type: SNVT_state, Index 83

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

```
nviLearn.bit0 ==> SR-Sensor-Object[0]
nviLearn.bit1 ==> SR-Sensor-Object[1]
::
::
nviLearn.bit15==> SR-Sensor-Object[15]
```

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

nviLearnTrans

SNVT Type: SNVT_state, Index 83

Function: When installing the transmitters, the objects can send a teach-in telegram by means of nviLearnTrans, whereas each bit of a network variable is assigned to a transmitter object.

```
nviLearnTrans.bit0 ==> Transmitter-Object[0]
nviLearnTrans.bit1 ==> Transmitter-Object[1]
:
:
nviLearnTrans.bit15 ==> SR- Transmitter -Object[15]
```

Bit-valuet = 1 switches and releases a teach-in telegram

4.1.2 Output Variables Node Object :

nvoStatus

SNVT Type: SNVT_obj_status, Index 93

Function: Output variable with the required status bit „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.

nvoAlarmSensor

SNVT Type: SNVT_state, Index 83

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

```
nvoAlarmSensor.bit0 = 1 ==> Alarm for SR-Sensor-Object[0]
nvoAlarmSensor.bit1 = 1 ==> Alarm for SR-Sensor-Object[1]
:
nvoAlarmSensor.bit15 = 1 ==> Alarm for SR-Sensor-Object[15]
```

4.1.3 Configuration Properties Node Object :

4.1.3.1 General Settings

SCPTlocation

SCPT Index: 17, SNVT_str_asc

Function: Additional input option to store information on position identification.

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec

Function: Heartbeat function. Stipulates interval time after which the output variables of the Node-Object are sent independently of a value change. By means of the input values = 0, the heartbeat function is deactivated. (Preset value: 0, i.e. the output variables are only sent, if an output value has changed, e.g. with an alarm message)

UCPTenoceanRcvTm

UCPT Index: 33, SNVT_time_min

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

UCPTgeneralCP1

UCPT Index: 7, SNVT_state

Function: Configuration of switching behaviour of receiving LED.

bit0	bit1	Receiving LED
0	0	No flashing
1	0	Flashing with each telegram received
0	1	Flashing with each learned-in sensor received

UCPTlongPresTime

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)

4.1.3.2 General Sensor Settings

SCPTbypassTime

SCPT Index: 34, SNVT_time_min

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

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

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

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

SCPTbypassTime >= 3: Herewith the overtime function is activated. By actuation, the output variable nvoMultiOut_2 receives the value OC_OCCUPIED / 100.0 1. After expiration of the delay time, it is reset to the value OC_UNOCCUPIED / 0.0 0. Each actuation restarts the timer . (Range: < 1000, preset value : 90 min)

UCPTspMinValue, UCPTspMaxValue

UCPT Index: 40, 41, SNVT_temp_p

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

UCPTfanSpdStages

UCPT Index: 13, SNVT_count

Function: Configuration property for default of fan stages.

With switch position Auto Without switch position Auto

1 – 1 Stage with Auto 11 – 1 Stage without Auto

2 – 2 Stage with Auto 12 – 2 Stage without Auto

3 – 3 Stage with Auto 13 – 3 Stage without Auto

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

4.1.3.3 Genereal Dimming Settings

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)

4.1.3.4 General Blind/Shutter Settings

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)

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)

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

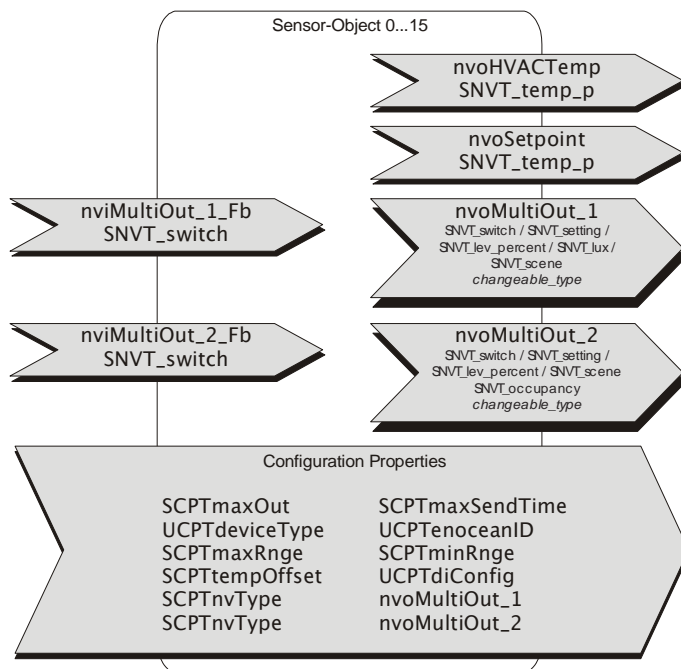
Function: By means of this configuration property it can be adjusted which SNVT_setting value shall be sent when the blind/shutter is stopped. (Preset value: SET_STOP 0.0 0.0)

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 stand-by 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)

5 Sensor-Objects



16 identical objects for the detection of EnOcean wireless sensors as well as for the detection of EnOcean wireless keys / switches and wireless actuator.

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

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

5.1.1 Input Variables Sensor-Object:

nviMultiOut_1_Fb, nviMultiOut_2_Fb

SNVT Type: SNVT_switch, Index 95

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

5.1.2 Output Variables Sensor-Object:

nvoHVACTemp

SNVT Type: SNVT_temp_p, Index 105

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

nvoSetpoint

SNVT Type: SNVT_temp_p, Index 105

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

nvoMultiOut_1

- SNVT Type: **changeable_type**, i.e. the variable type can be set via a LON installation tool e.g. the LonMaker . (default: SNVT_setting)
- Valid values: SNVT_switch, Index 95; SNVT_setting, Index 117; SNVT_lev_percent, Index 81; SNVT_lux, Index 79; SNVT_occupancy, Index 109; SNVT_scene, Index 115
- Function: Depending on the configuration, the output variable can either transmit relative humidity, the position of the rotary switch for fan stage adjustment, the light intensity, the status of the digital input module, the status of a window (opened/closed) and functions for switching/dimming/blind.

Fan Stage

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

- SNVT Type: SNVT_switch
- UCPTdeviceType 7

UCPTfanSpdStages = 1

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

UCPTfanSpdStages = 2

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

UCPTfanSpdStages = 3

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

UCPTfanSpdStages = 11

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

UCPTfanSpdStages = 12

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

UCPTfanSpdStages = 13

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

Humidity

- Type: SR04..rH (combi sensor with relative humidity)
- Type: SR04..rH CO2 (combi sensor with relative humidity)
- SNVT Type: SNVT_lev_percent
 - nvoMultiOut_1 = 0.0 ... 100.0 %

Digital Switch Contact

- Type: SR65-DI (digital input module)
- SNVT Type: SNVT_switch
 - Contact closed: nvoMultiOut_1 = 100.0 1
 - Contact opened: nvoMultiOut_1 = 0.0 0

Light Sensor

Type: SR-LI Outdoor (outdoor light sensor)

- SNVT Type: SNVT_lux
- nvoMultiOut_1 = 300 ... 30000 lx bzw. 600 ... 60000

Type: SR MDS (multi sensor, light sensor)

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

Motion Sensor

Type: SR-PIR 360°

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

Window Contact

Type: SRW01

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

Type: Secu-Signal – Window handle

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

Switch

Type: Easyfit / EasySens

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

Actual Value

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

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

nvoMultiOut_2

- SNVT Type: **changeable_type**, i.e. the variable type can be set via a LON installation tool, e.g. the LonMaker.
(default: SNVT_setting)
- Valid values: SNVT_switch, Index 95; SNVT_setting, Index 117; SNVT_occupancy, Index 109; SNVT_ppm, Index 29; SNVT_scene, Index 115
- Function: Depending on the configuration, the output variable can either transmit the presence key or the functions for switching/dimming/blind.

CO2 Sensor

- Type: SR04 CO2
- SNVT Type: SNVT_ppm
 - CO2: nvoMultiOut_2

Presence

- Type: SR04..T (with button respectively slide switch)
- UCPTdeviceType 7
- Type: Wireless chair
- SNVT Type: SNVT_switch or SNVT_occupancy
 - UCPTdeviceType 501
- Type: SR-PIR 360°
- SNVT Type: SNVT_occupancy
 - Motion: nvoMultiOut_2 = OC_OCCUPIED
 - No motion: nvoMultiOut_2 = OC_UNOCCUPIED
- Type: SR-KCS (KeyCard)
- Type: SR MDS
- SNVT Type: SNVT_occupancy
 - Motion: nvoMultiOut_2 = OC_OCCUPIED
 - No motion: nvoMultiOut_2 = OC_UNOCCUPIED
 -

SNVT Typ: SNVT_switch

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

SNVT Type: SNVT_occupancy

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

Switch

- Type: Easyfit / EasySens
- SNVT Typ: SNVT_scene, SNVT_switch or SNVT_setting depending on the function
 - UCPTdeviceType 5

Button Evaluation nvoMultiOut_1/ nvoMultiOut_2

Switch/ Button

Button pressed/ not pressed

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

SNVT Type: SNVT_switch

Button pressed	nvoMultiOut_1/2.value	= SCPTmaxOut
	nvoMultiOut_1/2.state	= 1

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

SNVT Type: SNVT_setting

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

Lighting Toggle

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

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

SNVT Type: SNVT_switch

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

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

SNVT Type: SNVT_setting

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

Lighting ON

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

Each button actuation results in a toggling of the lighting

SNVT Type: SNVT_switch

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

SNVT Type: SNVT_setting

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

Lighting OFF

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

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

SNVT Type: SNVT_switch

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

SNVT Type: SNVT_setting

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

Dimming

Lighting: Toggle by Dimming, Switch-ON Value = max. Value

UCPTdiConfig.Byte[0...3] = 10_{hex} / 11_{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 nvoMultiOut_1/2.value = SCPTmaxOut

nvoMultiOut_1/2.state = 1

Lighting on 50% nvoMultiOut_1/2.value = 50,0

nvoMultiOut_1/2.state = 1

Lighting OFF nvoMultiOut_1/2.value = 0

nvoMultiOut_1/2.state = 0

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

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

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

Lighting ON by Brighter-Dimming, Switch-ON Value = max. Value

UCPTdiConfig.Byte[0...3] = 14_{hex} / 15_{hex}

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

SNVT Type: SNVT_switch

Switching-on of lighting nvoMultiOut_1/2.value = SCPTmaxOut

nvoMultiOut_1/2.state = 1

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

nvoMultiOut_1/2.state = 1

SNVT Type: SNVT_setting

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

nvoMultiOut_1/2.setting = SCPTmaxOut;

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

nvoMultiOut_1/2.setting = UCPTstepValue;

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

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

Function as with 16_{hex}, 17_{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.Byte[0...3] = 18_{hex} / 19_{hex}

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

SNVT Type: SNVT_switch		
Switching-off of lighting	nvoMultiOut_1/2.value	= 0
	nvoMultiOut_1/2.state	= 0
Darker dimming of lighting	nvoMultiOut_1/2.value= last value - UCPTstepValue	
	nvoMultiOut_1/2.state	= 1

SNVT Type: SNVT_setting		
Switching-off of lightning	nvoMultiOut_1/2.function	= SET_OFF;
	nvoMultiOut_1/2.setting	= 0;
Darker dimming of lightning	nvoMultiOut_1/2.function	= SET_DOWN;
	nvoMultiOut_1/2.setting	= UCPTstepValue;

Blind

Blind UP

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

In the configuration mode "blind UP" only the nvoSetting variables are changed and sent. Short button actuations are used for a fine adjustment of the lamellas. A long button 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.Byte[0...3] = 21_{hex} / 23_{hex}

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

SNVT Type: SNVT_setting		
Close blind	nvoMultiOut_1/2.function	= UCPTsunblindDOWN;
stop blind	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

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

Shutter

Shutter UP

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

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

SNVT Type: SNVT_setting		
Open blind	nvoMultiOut_1/2.function	= UCPTsunblindUP;
Stop blind	nvoMultiOut_1/2.function	= UCPTsunblindSTOP;

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

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

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

SNVT Type: SNVT_setting

Close shutter nvoMultiOut_1/2.function = UCPTsunblindDOWN;

Stop shutter nvoMultiOut_1/2.function = UCPTsunblindSTOP;

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

Scene**UCPTdiConfig.Byte[0...3] = 40_{hex} ... 4F_{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. Output is made to nvoMultiOut_1.

SNVT Type: SNVT_scene

UCPTdiConfig.Byte[0...3] = 50_{hex} ... 5F_{hex}

Output variable for control of a scene controller. The scene numbers 0-15 can be allocated to a 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 nvoMultiOut_2.

SNVT Type: SNVT_scene

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

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

SNVT Type: SNVT_switch

5.1.3 Configuration Property Sensor-Object:

SCPTnvType

SCPT Index: 254, SNVT_nv_type
There is one SCPTnvType for nvoMultiOut_1 and nvoMultiOut_2 each. The configuration property specifies the type of the network variable nvoMultiOut_1 respectively nvoMultiOut_2. If SCPTnvType is not adapted automatically to the new variable type of nvoMultiOut_1 / nvoMultiOut_2 by the installation tool, the following settings must be entered:

nvoMultiOut = SNVT_switch
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 95, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0
nvoMultiOut = SNVT_setting
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 117, NVT_CAT_STRUCT, 4 bytes, A=1, B=0, C=0
nvoMultiOut = SNVT_lev_percent
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 81, NVT_CAT_SIGNED_LONG, 2 bytes, A=5, B=-3, C=0
nvoMultiOut = SNVT_lux
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 79, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0
nvoMultiOut = SNVT_occupancy
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 109, NVT_CAT_ENUM, 1 bytes, A=1, B=0, C=0
nvoMultiOut = SNVT_scene
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 115, NVT_CAT_STRUCT, 2 bytes, A=1, B=0, C=0
nvoMultiOut = SNVT_ppm
==> SCPTnvType = PID 0:0:0:0:0:0:0, Scope 0, Index 29, NVT_CAT_UNSIGNED_LONG, 2 bytes, A=1, B=0, C=0

SCPTtempOffset

SCPT Index: 227, SNVT_temp_p
Function: Offset for the temperature value. By means of this parameter a software calibration is possible.

SCPTminRnge, SCPTmaxRnge

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

SCPT Index: 23, 20, SNVT_temp_p
Function: The properties are for the adjustment of different temperature ranges of SR04..- and SR65.. - sensors. The measuring range is found in the respective data sheet.
- Standard measuring range SR04: 0 to +40 °C
- Standard measuring range SR65: -20 to +60 °C
- Standard measuring range SR65 TF: -20 to +60 °C
- Standard measuring range SR65 AKF: +10 to +90 °C
- Standard measuring range SR65 VFG: +10 to +90 °C
(Preset value: SCPTminRnge = 0,00 °C and SCPTmaxRnge = 40,00 °C)

SCPTmaxOut

SCPT Index: 93, SNVT_lev_cont
Function: This configuration property determines the maximum output value of the variable nvoMultiOut.value. (Preset value: 100.0)

SCPTmaxSendTime

SCPT Index: 49, SNVT_time_sec
Function: Heartbeat function. This configuration property stipulates the interval time after which the output variables of the Sensor-Object are sent. By input values = 0, the heartbeat function is deactivated. (Preset value: 0,0 s)

UCPTdeviceType

UCPT Index: 42, SNVT_count

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

UCPTenoceanID

UCPT Index: 39, UNVT_str_hex4

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

UCPTdiConfig

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

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

UCPTdiConfig . <u>Byte[0]</u>	configured	Function of button 1
UCPTdiConfig . <u>Byte[1]</u>	configured	Function of button 2
UCPTdiConfig . <u>Byte[2]</u>	configured	Function of button 3
UCPTdiConfig . <u>Byte[3]</u>	configured	Function of button 4

No function 0x00

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

Switching functions 0x01 – 0x08

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

0x10 – 0x19 Dim Function

UCPTdiConfig, Configuration of Buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Dimming		
0x10	Light Toggle by Dimming Switch-on value = Max-Wert / nvoMultiOut_1	SNVT_switch
0x11	Light Toggle by Dimming Switch-on value = Max-value / nvoMultiOut_2	SNVT_switch
0x12	Light Toggle by Dimming Switch-on value = last switch- on value nvoMultiOut_1	SNVT_switch
0x13	Light Toggle by Dimming Switch-on value = last switch-on value nvoMultiOut_2	SNVT_switch
0x14	Light only brighter by Dimming Switch-on value = Max-value nvoMultiOut_1	SNVT_switch SNVT_setting
0x15	Light only brighter by Dimming Switch-on value = Max-value nvoMultiOut_2	SNVT_switch SNVT_setting
0x16	Light only brighter by Dimming Switch-on value = last switch- on value nvoMultiOut_1	SNVT_switch SNVT_setting
0x17	Light only brighter by DimmingEinschaltwert = last switch-on value nvoMultiOut_2	SNVT_switch SNVT_setting
0x18	Light only darker by Dimming nvoMultiOut_1	SNVT_switch SNVT_setting
0x19	Light only darker by Dimming nvoMultiOut_2	SNVT_switch SNVT_setting

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

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

0x20 – 0x23 Blind

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

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

0x30 – 0x33 Shutters

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

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

0x40 – 0x5F Scene Polling

UCPTdiConfig, Configuration of Buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Scene Polling		
0x40	Scene 0 nvoMultiOut_1	SNVT_scene
0x41	Scene 1 nvoMultiOut_1	SNVT_scene
...		
0x4F	Scene 15 nvoMultiOut_1	SNVT_scene

By a short button actuation the scenes 1-15 can be polled. By a long button actuation a scene can be safed.

UCPTdiConfig, Configuration of Buttons		
Byte[0...3]	Buttons 1...4 - Function	SNVT-Type
Scene Polling		
0x50	Scene 0 nvoMultiOut_2	SNVT_scene
0x51	Scene 1 nvoMultiOut_2	SNVT_scene
...		
0x5F	Scene 15 nvoMultiOut_2	SNVT_scene

0x60 – 0x61 Automatic

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

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

Example:

Tactile sensor in Sensor-Object 1:

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

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

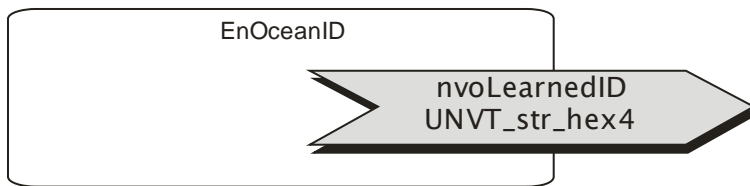
For this, a type change from nvoMultiOut_1 to SNVT_switch must be made .

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

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

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

6 EnOceanID



nvoLearnedID

SNVT Type: UNVT_str_hex4

Function: Display of sensor ID learned-in last

When seamlessly connecting a sensor by means of the learn-button, the sensor ID is saved in the device. There are two options to take over the ID into the LNS-database:

1. To take over the sensor ID into the LNS-database, the device must be recommissioned by means of "Current values in device".
2. The sensor ID of the sensor learned-in last is indicated in the variable nvoLearnedID. It can be entered directly into the corresponding UCPTenOcean ID and can thus be taken over into the LNS-database.