

# LON ARTEC pushbutton

Article no.: MTN880701, MTN880711, MTN880721, MTN880731, MTN880741, MTN880751

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# User Manual

# LON ARTEC pushbutton

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<b>LON ARTEC</b>		
Pushbutton	MTN880701	polar white glossy
1-gang	MTN880711	stainless steel
Pushbutton	MTN880721	polar white glossy
2-gang	MTN880731	stainless steel
Pushbutton	MTN880741	polar white glossy
4-gang	MTN880751	stainless steel

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### 1. Description

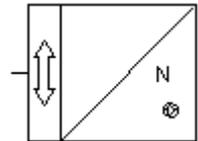
- Application module for LON network in ARTEC Design available as 1-, 2-, 4-gang pushbutton.
- With 2, 4, or 8 pushbuttons for individually assigned functions
- Pushbutton 1-, 2-, 4-gang each have one status LED per pair of buttons
- The application module possesses one operating LED
- Software application according to LonMark profile “Switch (3200)”, Scene Panel (3250)”, and “Occupancy Sensor (1060)” for light, sunblind or scene and occupancy control

### 2. Function

Via the pushbuttons the application specific functions can be executed.  
There are applications available for lighting, blind and scene control.

The operating LED can be switched off via a configuration parameter.  
The buttons can be dedicated individually to ten function objects (switch).

Via the Universal Plug-in there is alternatively the possibility to assign the button functions freely to any object. There is among other things the possibility to configure specific functions according to the push or loose of the button also in combination with the pressing time. Furthermore it is possible to assign different functions to the Status- LEDs.



### 3. Mounting

The application module is plugged onto the LON BCU and completed with a frame.  
The LON BCU and the frame have to be ordered separately.

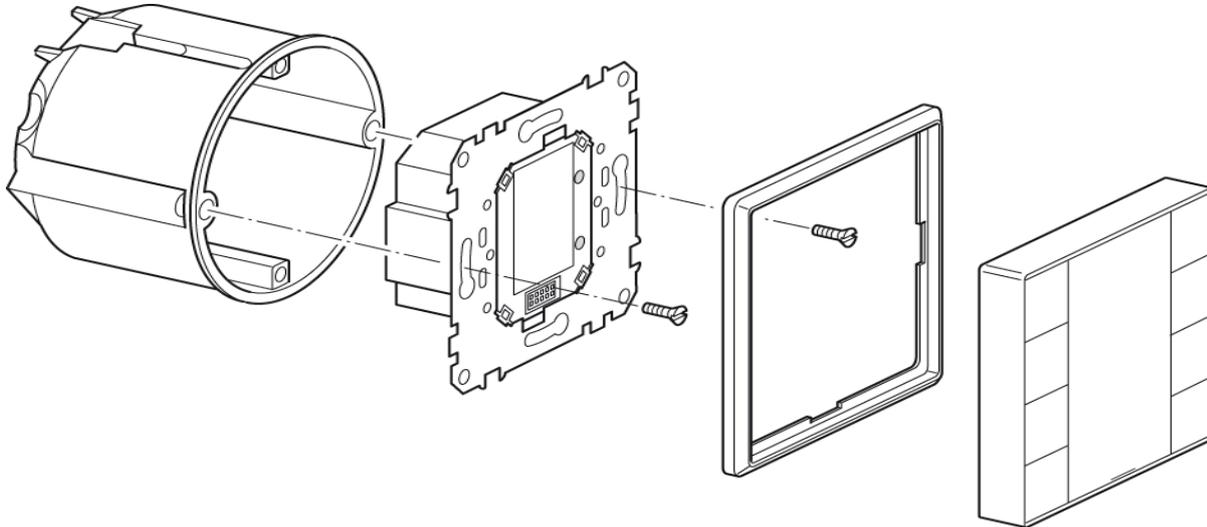
The LON BCU represents the mechanical, electrical and data technical connection between a LON TP/LP network and the application module.

To prevent the connector of the application module from spoiling, the application module has to be stuck upright onto the BCU.

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### 4. Remarks

Installation and assembly of electrical devices may take place only by an electrical specialist. When planning and installing an electrical system the relevant standards, guidelines and regulations of the respective country are to be considered. Beyond that the device specifications are to be kept. For project engineering, assembly and line-up detailed expertise of the LON technology is presupposed. The function of the device is software dependent. Only application programs may be loaded, which are approved for this device. The system integrator has to carry ensuring that the loaded application program and the configured parameters in it correspond with the outside wiring of the device. This applies in particular if for different use several application programs for a device are available.

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### 5. Technical Data

#### **Power supply**

Power consumption 1 LPUL (285 mW), 6.2 mA @ 42V, 25 mA @ 5V  
including BCU (max.): DC 42.8V (supplied by the network)

#### **Controls, application module**

2-8 Operation buttons: To activate the application specific function

#### **Indicators, application module**

LEDs next to the operation buttons: Blue: ON-state  
Operation-LED: Blue: ready for operation and online

#### **Connections**

Physical External Interface (PEI): 10 pole interface (PEI)

#### **Conformity**

EU Directive: 2004/108/EEC

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Application: 880451SW12E

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## 6. Application

The application “880451SW12E” is for pushbutton application modules with LON Bus Coupling Unit, to control LON devices via the LON network. Thus, light scenes can be enabled just as switch and dim commands for blinds and lamps can be transmitted. The application contains the LonMark profiles “Switch (3200)” (10x), “Scene Panel (3250)” (1x) and “Occupancy Sensor (1060)” (1x).

### 6.1 System requirements

For the configuration of the application a LNS-compatible commissioning tool is needed! All properties are used as “User-defined Configuration Property Types” (UCPT’s) by Direct-Memory-Access. For use of these properties, the Device Resource Files” have to be installed **before (!)** a device template is created.

This application was generated especially for the use with an LNS Version 3.0 or higher.

#### Function

##### Switch Object

##### **Configuration of the Switch Object/Push Button Sensor**

The Switch Object can be configured in a very flexible way to provide the user the opportunity to meet all requirements of his project.

By use of the UCPTcmdXXX[i] parameters, messages can be assigned arbitrarily to the outputs nvoSWswitch[i] and nvoSWsetting[i] for every switching event. By default, the Switch Object is configured for one-fold switch control. Therefore the names “FirstEvent” and “SecondEvent” signify the alternating switching events at the digital input.

##### **Assigning the switching events to the digital inputs**

To assign the switching events to the digital inputs the parameters UCPTbuttonMapFirstEvent[i] and UCPTbuttonMapSecondEvent[i] are used.

During every switching event, up to four messages can be generated. The commands the messages contain can be defined individually. If a message shall not be transmitted, the .function element of the corresponding UCPTcmdXXX[i] parameter has to be set at SET\_NO\_MESSAGE.

Interpretation of the .function element of UCPTcmdXXX at nvoSWswitch[i]

The parameters UCPTcmdXXX[i] specify the output value of nvoSWsetting[i]. The nvoSWswitch[i] output is adjusted according to the following scheme:

nvoSWswitch[i].state is adjusted to UCPTcmdXXX[i].function as follows:

```
.function = SET_ON, SET_UP, SET_DOWN, SET_STATE ⇒ .state = 1
.function = SET_OFF ⇒ .state = 0
.function = SET_NUL ⇒ .state = -1
```

nvoSWswitch[i].value is adjusted to UCPTcmdXXX[i].function as follows:

```
.function = SET_ON ⇒ .value = SCPTmaxOut[i] after restart resp.
    nviSWswitchFb[i].value
    (last value before switching-off)
.function = SET_OFF ⇒ .value = 0
.function = SET_UP, SET_DOWN ⇒ .value = .value +/- .setting
.function = SET_NUL, SET_STATE ⇒ .value = .setting
```

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**Application: 880451SW12E**

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The Switch Object provides a memory function. If it is switched on by a SET\_ON command, the nvoSWswitch[i] output adopts the last feedback value received.

### One-fold switch control

One of the digital inputs initiates the first as well as the second switching event. Therefore, UCPTbuttonMapFirstEvent[i] as well as UCPTbuttonMapSecondEvent[i] have to be assigned to this input by setting the corresponding bit = 1.

### Switching by push button

If a push button is connected to the digital input, ON and OFF commands shall be transmitted alternately with every rising edge (e. g. a push at a push button). For this purpose, the parameters have to be configured as follows:

```
UCPTcmdPushFirstEvent[i]      = {SET_ON; x; x}
UCPTcmdPushSecondEvent[i]    = {SET_OFF; x; x}
All other UCPTcmdXXX[i]      = {SET_NO_MESSAGE; x; x}
```

If the output network variable value shall be lowered to a value different from zero, this value has to be defined in UCPTcmdPushSecondEvent[i].setting in combination with .function = SET\_STATE. If the output network variable value shall be switched with every falling edge (e. g. a push at a break contact element), values have to be defined in UCPTcmdReleaseFirstEvent[i] and UCPTcmdReleaseSecondEvent[i], all other UCPTcmdXXX[i] are set at {SET\_NO\_MESSAGE; x; x}.

### Switching/Dimming by digital input / push button

If a push button is used for switching and dimming, the UCPTpresTimeThreshold[i] parameter defines a time that distinguishes between push and hold of the button. ON and OFF commands are transmitted alternately with every falling edge that follows a short pulse (when the button is released after a push). With every long pulse (hold of the button), the dimming level is raised/lowered alternately.

The fade starts as soon as the press time threshold has been exceeded. The values defined in UCPTcmdHoldFirstEvent[i] resp. UCPTcmdHoldSecondEvent[i] are transmitted consecutively until the input is opened again whereas the corresponding .setting element contains the dim step value. The parameters have to be configured as follows:

```
UCPTcmdReleaseFirstEvent[i]  = {SET_ON; x; x}
UCPTcmdReleaseSecondEvent[i] = {SET_OFF; x; x}
UCPTcmdHoldFirstEvent[i]     = {SET_UP; 5 %; x}
UCPTcmdHoldSecondEvent[i]   = {SET_DOWN, 5 %; x}
All other UCPTcmdXXX[i]      = {SET_NO_MESSAGE; x; x}
```

### Two-fold switch control

One of the digital inputs initiates the first switching event. The other input initiates the second. Both inputs cause always the same command. Therefore the UCPTbuttonMapFirstEvent[i] parameter has to be assigned to the one input, UCPTbuttonMapSecondEvent[i] to the other by setting the bit corresponding to the chosen input = 1.

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### Switching by rocker switch

If a rocker switch is connected to two digital inputs, ON commands shall be transmitted with every rising edge at the one input and OFF commands shall be transmitted with every rising edge at the other input. For this purpose, the parameters have to be configured as follows:

```
UCPTcmdPushFirstEvent[i]      = {SET_ON; x; x}
UCPTcmdPushSecondEvent[i]    = {SET_OFF; x; x}
All other UCPTcmdXXX[i]      = {SET_NO_MESSAGE; x; x}
```

If the network variable output value shall be switched with every falling edge (e.g. push at a break contact element), values have to be defined in UCPTcmdReleaseFirstEvent[i] and UCPTcmdReleaseSecondEvent[i], all other UCPTcmdXXX[i] are set at {SET\_NO\_MESSAGE; x; x}.

### Switching/Dimming by rocker switch

The UCPTpressTimeThreshold[i] parameter defines a time that distinguishes between push and hold of the button when fades are controlled.

The network variable output value is switched on with every falling edge (that follows a short pulse) at the one input. It is switched off with every falling edge at the other input.

The dimming level is raised with every long pulse at the one input. It is lowered with every long pulse at the other input.

The fade starts as soon as the press time threshold has been exceeded. Then, the values defined in UCPTcmdHoldFirstEvent[i] resp. UCPTcmdHoldSecondEvent[i] are transmitted consecutively until the input is opened again whereas the corresponding .setting element contains the dim step value. The SCPTminSendTime[i] parameter defines the minimum period of time between two consecutive dim commands. The parameters have to be configured as follows:

```
UCPTcmdReleaseFirstEvent[i]  = {SET_ON; x; x}
UCPTcmdReleaseSecondEvent[i] = {SET_OFF; x; x}
UCPTcmdHoldFirstEvent[i]     = {SET_UP; 5 %; x}
UCPTcmdHoldSecondEvent[i]   = {SET_DOWN; 5 %; x}
All other UCPTcmdXXX[i]      = {SET_NO_MESSAGE; x; x}
```

### Sunblind Control by rocker switch

For sunblind control, the UCPTpressTimeThreshold[i] parameter defines a time that distinguishes between push and hold of the button.

The sunblind is raised completely with every rising edge at the one input. It is lowered completely with every rising edge at the other input. It can be stopped by a falling edge that follows a short pulse (by releasing the button after a push). For this purpose, the parameters have to be configured as follows:

```
UCPTcmdPushFirstEvent[i]     = {SET_UP; 100 %; x}
UCPTcmdPushSecondEvent[i]    = {SET_DOWN; 100 %; x}
UCPTcmdReleaseFirstEvent[i]  = {SET_STOP; x; x}
UCPTcmdReleaseSecondEvent[i] = {SET_STOP; x; x}
All other UCPTcmdXXX[i]      = {SET_NO_MESSAGE; x; x}
```

The required drive commands may vary according to the used motor control unit.

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### Scene Panel Object

The `UCPTbuttonFslSceneCmd[i]` parameter assigns a scene number to a pushbutton. The messages transmitted by `nvoSPscene` can be configured individually for every input by use of these configuration properties.

#### Recalling scenes

Caused by a short switch pulse (generally initiated by a short push on a make-contact element), a recall command `nvoSPscene.function = SC_RECALL` and the scene number of the particular input `nvoSPscene.scene_number = UCPTbuttonFslSceneCmd[i]` are transmitted via the `nvoSPscene` output. Thus, the scene controller operates the corresponding scene settings. A scene number zero is not transmitted.

#### Storing scenes

Caused by a long switch pulse, which exceeds the time threshold defined in the `UCPTsceneLearnDelay` property, a learn command `nvoSPscene.function = SC_LEARN` and the scene number of the particular input `nvoSPscene.scene_number = UCPTbuttonSslSceneCmd[i]` are transmitted. Thus, the current scene settings are stored in the controller memory under the given scene number.

### Occupancy Sensor

All digital inputs can also be used as presence input.

The telegrams to be send at the `nvoOSoccupancy` can be configured in the parameters `UCPTbuttonRslOccCmd[i]` individually for every input.

### **Button and LED assignments for different applications**

The assignments of buttons (B) and LEDs (L, if available) to the several software objects are different depending on the manufacturer. They could be configured for individual requirements with the parameters `UCPTbuttonMapFirstEvent[i]`, `UCPTbuttonMapSecondEvent[i]` and `UCPTledMap[i]`. The indices `.bitx` of the parameters correspond to the indices of the following patterns.

We advise to configure the application with the available LNS Plug-Ins.

#### **Example:**

The explanation shows how to configure a LON ARTEC Pushbutton 1-gang to set the buttons to control the first software object with the index [0].

Default:

1-gang

B	L	B
6	0	1

<code>UCPTbuttonMapFirstEvent[0]</code>	<code>.bit0 = 1, all other .bitx = 0</code>
<code>UCPTbuttonMapSecondEvent[0]</code>	<code>.bit1 = 1, all other .bitx = 0</code>
<code>UCPTbuttonMapFirstEvent[6]</code>	<code>.bit6 = 1, all other .bitx = 0</code>
<code>UCPTbuttonMapSecondEvent[6]</code>	<code>.bit7 = 1, all other .bitx = 0</code>

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With the default setting (hardware conditioned), the first event on the left button is corresponding to the seventh software object with index [6], the second event of the software object [0] is corresponding to the right button. This means, that a key press on the left button would generate a telegram at the software object [6] and a key press on the right button would generate a telegram at the software object [0].

Configuration to use both buttons with the software object [0]

1-gang

B	L	B
6	0	1

```
UCPTbuttonMapFirstEvent[0]    .bit6 = 1, all other .bitx = 0
UCPTbuttonMapSecondEvent[0]   .bit1 = 1, all other .bitx = 0
UCPTbuttonMapFirstEvent[6]    all .bitx = 0
UCPTbuttonMapSecondEvent[6]   all .bitx = 0
```

After this configuration is done, both buttons are configured to correspond to the software object [0] and the software object [6] is deactivated.

Similarly, depending on the used application, a configuration is needed to bring the buttons into a continuous order.

The default configuration of all supported applications is listed on the following pages.

## Assignment of the buttons (bit wise)

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1-gang

B	L	L	B
6	0		1

2-gang

B	L	L	B
7	0		2
5	1		0

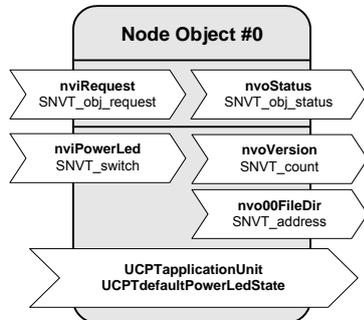
4-gang

B	L	B
7	0	3
6	1	2
5	2	1
4	3	0

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## 6.2 Node Object (LONMARK® profile #0)



### Input Network Variables

#### nviRequest

Type:	SNVT_obj_request
Valid Range:	Valid Object-ID: RQ_NORMAL, RQ_UPDATE_STATUS, RQ_REPORT_MASK
Default Value:	RQ_NORMAL
Description:	Input, which is used to initiate status messages from the node.

#### nviPowerLed

Type:	SNVT_switch
Valid Range:	.value: 0 .. 100 % .state: 0, 1 On: .state = 1 and .value > 0 Off: .state = 0 and .value = any or .state = 1 and .value = 0
Default Value:	.value = 100 % .state = 1
Description:	Input to control the Power-LED of the device.

### Output Network Variables

#### nvoStatus

Type:	SNVT_obj_status
Valid Range:	The supported Status-Bits are: .report_mask, .invalid_id, .invalid_request
Default Value:	All bits = 0
Description:	Is sent, when an update occurs in nviRequest.

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## Output Network Variables

### nvoVersion

Type:	SNVT_count
Valid Range:	0 .. 65,535
Default Value:	Schneider = 10
Description:	Specifies the detected application module

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### nvo00FileDir

Type:	SNVT_address
Valid Range:	16,384 .. 64,767
Default Value:	Not defined
Description:	For internal function only!

## Configuration Properties

### UCPTapplicationUnit

Type:	UNVT_u8
Valid Range:	0 .. 255
Default Value:	0
Description:	Specifies the used application module.

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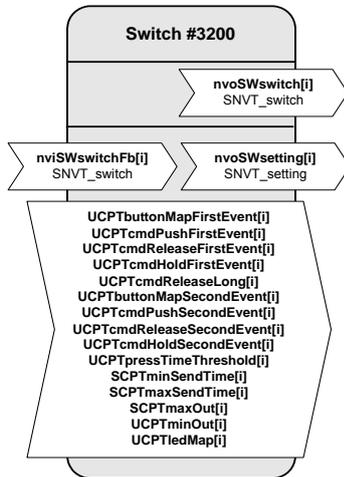
### UCPTdefaultPowerLedState

Type:	SNVT_switch
Valid Range:	.value: 0 .. 100 % .state: 0, 1 On: .state = 1 and .value > 0 Off: .state = 0 and .value = any or .state = 1 and .value = 0
Default Value:	.value = 100 % .state = 1
Description:	Power-LED state after Reset or Initialisation.

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## 6.3 Switch Object (LONMARK® profile #3200)



### Input Network Variables

**nviSWswitchFb[i]** – Switch feedback input

Type:	SNVT_switch
Valid Range:	.value: 0 .. 100 % .state: 0, 1 On: .state = 1 and .value > 0 Off: .state = 0 and .value = x or .state = 1 and .value = 0
Default Value:	.value = 0 .state = 0
Description:	Provides the feedback from other devices to realise two-way circuits. Also used to adapt the current dimming level .value of the actuator for dimming.

### Output Network Variables

**nvoSWswitch[i]** – Switch output

Type:	SNVT_switch
Valid Range:	.value: 0 .. 100 % .state: -1, 0, 1 On: .state = 1 and .value > 0 Off: .state = 0 and .value = x or .state = 1 and .value = 0
Default Value:	.value = 0 .state = 0
Description:	This output variable is used to control switching and dimming actuators. Its function is specified by the configuration properties UCPTbuttonMapXXX and UCPTcmdXXX.

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## Output Network Variables

**nvoSWsetting[i]** - Setting Output

Type:	SNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NUL .setting = 0 .rotation = 0
Description:	This output variable is used to control controllers, sunblind and dimming actuators. Its function is specified by the configuration properties UCPTbuttonMapXXX and UCPTcmdXXX.

## Configuration Properties

**UCPTbuttonMapFirstEvent[i]** - Button Map First Event

Type:	SNVT_state
Valid Range:	.bit0 .. .bit[n] with $n \leq 15$ : 0, 1
Default Value:	all bits = 0
Description:	This parameter defines which hardware input initiates the first switching event by setting the bit which corresponds to the input at 1. The .bit0 to .bit[n] of this parameter are dedicated to the digital inputs.

**UCPTcmdPushFirstEvent[i]** - Command Push First Event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_ON .setting = 100 .rotation = 0
Description:	This command is transmitted via nvoSWsetting[i] with every rising edge of the first switching event (e. g. first push at a make-contact element).

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## Configuration Properties

**UCPTcmdReleaseFirstEvent[i]** – Command Release First Event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NO_MESSAGE .setting = 0 .rotation = 0
Description:	This message is transmitted via <code>nvoSWsetting[i]</code> with every falling edge that occurs in the first switching event before the <code>UCPTpressTimeThreshold</code> has been exceeded (when the button is released after the first push).

**UCPTcmdHoldFirstEvent[i]** – Command hold first event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NO_MESSAGE .setting = 0 .rotation = 0
Description:	This message is transmitted via <code>nvoSWsetting[i]</code> when a long pulse is detected/when the <code>UCPTpressTimeThreshold[i]</code> is exceeded in the first event (when the button is hold for the first time). If <code>SCPTminSendTime[i] &gt; 0</code> , it defines a time by which the values configured here are transmitted consecutively via <code>nvoSWsetting[i]</code> (for fades). Then, the <code>.setting</code> element of this parameter is adapted by <code>nvoSWswitch[i]</code> where it is used as dim step value.

**UCPTcmdReleaseLong[i]** – Command release long

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NO_MESSAGE .setting = 0 .rotation = 0
Description:	This message is transmitted via <code>nvoSWsetting[i]</code> with every falling edge that occurs when the <code>UCPTpressTimeThreshold[i]</code> has been exceeded (when the button is released after hold). The values defined here affect the first as well as the second switching event. For interpretation at <code>nvoSWswitch[i]</code> see functional description.

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## Configuration Properties

**UCPTbuttonMapSecondEvent [ i ]** – Button map second event

Type:	SNVT_state
Valid Range:	.bit0 .. .bit[n] with $n \leq 15$ : 0, 1
Default Value:	all bits = 0
Description:	This parameter defines which hardware input initiates the second switching event by setting the bit which corresponds to the input at 1. The .bit0 to .bit[n] of this parameter are dedicated to the digital inputs.

**UCPTcmdPushSecondEvent [ i ]** – Command push second event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_OFF 0.0 0.00 .setting = 0 .rotation = 0
Description:	This command is transmitted via nvoSWsetting[i] with every rising edge of the second switching event (e. g. second push at a make-contact element).

**UCPTcmdReleaseSecondEvent [ i ]** – Command release second event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NO_MESSAGE .setting = 0 .rotation = 0
Description:	This message is transmitted via nvoSWsetting[i] with every falling edge that occurs in the second switching event before the UCPTpressTimeThreshold[i] has been exceeded (when the button is released after the second push).

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## Configuration Properties

**UCPTcmdHoldSecondEvent[i]** – Command hold second event

Type:	UNVT_setting
Valid Range:	.function: SET_OFF, SET_ON, SET_DOWN, SET_UP, SET_STOP, SET_STATE, SET_NO_MESSAGE, SET_NUL .setting: 0 .. 100 % .rotation: -359.98° .. +360.00°
Default Value:	.function = SET_NO_MESSAGE .setting = 0 .rotation = 0
Description:	This message is transmitted via nvoSWsetting[i] when a long pulse is detected/when the UCPTpressTimeThreshold[i] is exceeded in the second event (when the button is hold for the second time). If SCPTminSendTime[i] > 0, it defines a time by which the values configured here are transmitted consecutively via nvoSWsetting[i] (for fades). Then, the .setting element of this parameter is adapted by nvoSWswitch[i] where it is used as dim step value.

---

**UCPTpressTimeThreshold[i]** – Press time threshold

Type:	SNVT_time_sec
Valid Range:	0.0 .. 64.0 s
Default Value:	1.0 s
Description:	Distinguishes between long and short pulse. Is this time 0, the command of UCPTcmdReleaseLong[i] is always transmitted when the contacts have been opened.

---

**SCPTminSendTime[i]** – Minimum send time

Type:	SNVT_time_sec
Valid Range:	0.0 .. 6553.5 s
Default Value:	0.2 s
Description:	Defines the minimum period of time between two consecutive transmissions of the current value. Provides a way to tailor the transmission rate to reduce bus load during fades. If the values defined in UCPTcmdHoldFirstEvent[i] resp. UCPTcmdHoldSecondEvent[i] shall be transmitted consecutively via nvoSWsetting[i] resp. nvoSWswitch[i] when UCPTpressTimeThreshold[i] has been exceeded, this parameter has to be set at > 0.

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### Configuration Properties

**SCPTmaxSendTime[i]** – Maximum send time

Type:	SNVT_time_sec
Valid Range:	0 .. 6,553 s
Default Value:	0 (disabled)
Description:	Defines the maximum period of time between consecutive transmissions of the current value. If this value > 0 the current values of nvoSWswitch[i] and nvoSWsetting[i] are transmitted automatically/consecutively when this time expires.

---

**SCPTmaxOut[i]** – Maximum output value

Type:	SNVT_lev_cont
Valid Range:	0 .. 100 %
Default Value:	100 %
Description:	Determines the maximum value limit of nvoSWswitch[i].value for when it is switched on or the dimming level is raised via nvoSWswitch[i] and nvoSWsetting[i].

---

**UCPTminOut[i]** – Minimum Output Value

Type:	SNVT_lev_cont
Valid Range:	0 .. 100 %
Default Value:	5 %
Description:	Determines the minimum value limit of nvoSWswitch[i].value for when the dimming level is lowered via nvoSWswitch[i] and nvoSWsetting[i]. When it is switched off, {0; 0} is always propagated independently of the value defined in this parameter.

---

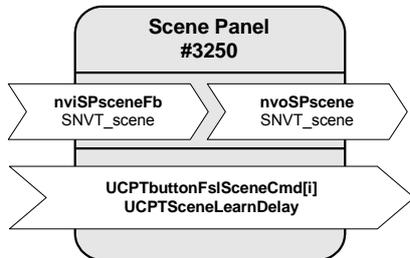
**UCPTledMap[i]** – LED map

Type:	SNVT_state
Valid Range:	.bit0 .. .bit[n] with $n \leq 15$ : 0, 1
Default Value:	all bits = 0
Description:	This parameter assigns the LEDs to the software objects.

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### 6.4 Scene Panel Object (LONMARK® profile #3250)



#### Input Network Variables

**nviSPsceneFb** – Scene feedback input

Type:	SNVT_scene
Valid Range:	.function: SC_RECALL, SC_LEARN, SC_NUL .scene_number: 0 .. 255
Default Value:	.function = SC_NUL .scene_number = 0 (undefined)
Description:	Provides the feedback from other scene panels (generally without any effect).

#### Output Network Variables

**nvoSPscene** – Scene output

Type:	SNVT_scene
Valid Range:	.function: SC_RECALL, SC_LEARN, SC_NUL .scene_number: 0 .. 255
Default Value:	.function = SC_NUL .scene_number = 255
Description:	Used to control a scene controller. Caused by a short switch pulse (generally initiated by a short push on a make-contact element), this output transmits the particular scene number ( <code>nvoSPscene.scene_number = UCPTbuttonFslSceneCmd [i]</code> ) and recalls all corresponding scene settings by <code>nvoSPscene.function = SC_RECALL</code> . When the time threshold defined in the <code>UCPTsceneLearnDelay</code> parameter is exceeded (by a long pulse), a learn command ( <code>nvoSPscene.function = SC_LEARN</code> ) is transmitted, so that all current scene settings are stored in the controller memory under to the given scene number.

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### Configuration Properties

**UCPTbuttonFs1SceneCmd[i]** – Scene command assignment

Type:	SNVT_scene
Valid Range:	.function: SC_RECALL, SC_LEARN, SC_NUL .scene_number: 0 .. 255
Default Value:	.function = SC_NUL .scene_number = 0
Description:	Used to assign a scene command to every button.

---

**UCPTsceneLearnDelay** – Scene learn delay

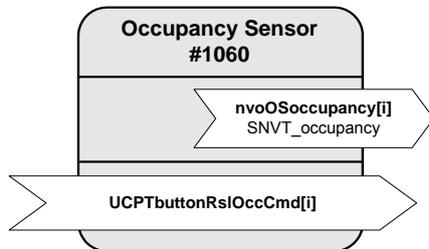
Type:	SNVT_time_sec
Valid Range:	0.0 .. 6553.5 s
Default Value:	10.0 s
Description:	Defines a time threshold to distinguish between recalling (RECALL) and storing (LEARN) scenes. The learn command <code>nvoSPscene.function = SC_LEARN</code> is transmitted when this time threshold is exceeded by a long switch pulse.

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### 6.5 Occupancy Sensor (LONMARK® profile #1060)



#### Output Network Variables

**nvoOSoccupancy[i]** – Occupancy Output

Type:	SNVT_occupancy
Valid Range:	OC_OCCUPIED, OC_UNOCCUPIED, OC_BYPASS, OC_STANDBY, OC_NUL
Default Value:	OC_NUL
Description:	Output to propagate the occupancy state.

#### Configuration Properties

**UCPTbuttonRs1OccCmd[i]** – Occupancy command assignment to a close contact

Type:	UNVT_occupancy
Valid Range:	OC_OCCUPIED, OC_UNOCCUPIED, OC_BYPASS, OC_STANDBY, OC_NO_MESSAGE, OC_NUL
Default Value:	OC_NO_MESSAGE
Description:	Used to assign an occupancy command to every button.