LONMARK
Functional Profile:
Lamp Actuator
Overview

This document describes the profile for a lamp actuator. The profile is used for devices that can control the illumination level of a lamp. Typical lamp actuators are dimmers, relays and controllable electronic ballasts.

Example Usage

The lamp actuator is used with switch and controller devices such as the constant light controller and scene controller. The switch object output nvoSwitch is connected to the input nviLampValue of the lamp actuator. Controller objects can be used between switch type sensors and lamp actuators.

In cases of multiple sensors the feedback connection can be used to synchronize a group of switches.
Figure 1.2 Example Usage of Lamp Actuator Object

Object Details
**Figure 1.3** Object Details

**Table 1** SNVT Details

<table>
<thead>
<tr>
<th>NV # (M/O)*</th>
<th>Name</th>
<th>In/Out</th>
<th>SNVT Type (SNVT Index)</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (M)</td>
<td>nviLampValue</td>
<td>In</td>
<td>SNVT_switch (95)</td>
<td></td>
<td>Lamp input value</td>
</tr>
<tr>
<td>2 (M)</td>
<td>nvoLampValueFb</td>
<td>Out</td>
<td>SNVT_switch (95)</td>
<td></td>
<td>Lamp feedback output</td>
</tr>
<tr>
<td>3 (O)</td>
<td>nvoRunHours</td>
<td>Out</td>
<td>SNVT_elapsed_tm (87)</td>
<td></td>
<td>Running hours of the lamp</td>
</tr>
<tr>
<td>4 (O)</td>
<td>nvoEnergyCnt</td>
<td>Out</td>
<td>SNVT_elec_kwh (13)</td>
<td></td>
<td>Energy consumption</td>
</tr>
</tbody>
</table>

* M = mandatory, O = optional

**Table 2** SCPT Details

<table>
<thead>
<tr>
<th>SCPT</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>index (M/O)*</th>
<th>SCPT_location</th>
<th>Location label</th>
</tr>
</thead>
<tbody>
<tr>
<td>17 (O)</td>
<td>SCPTinFbDly</td>
<td>Input value feedback delay</td>
</tr>
<tr>
<td>138 (O)</td>
<td>SCPT_def_output</td>
<td>Default output</td>
</tr>
<tr>
<td>7 (O)</td>
<td>SCPTrunHrInit</td>
<td>Initialization of running hours counter</td>
</tr>
<tr>
<td>135 (O)</td>
<td>SCPTrunHrAlarm</td>
<td>Alarm threshold level for the running hours counter</td>
</tr>
<tr>
<td>136 (O)</td>
<td>SCPTenrgyCntInit</td>
<td>Initialization of energy counter</td>
</tr>
</tbody>
</table>

* M = mandatory, O = optional

**Mandatory Network Variables**

**Value Input**

```network input SNVT_switch nviLampValue;
```

This input network variable provides a means for another device to pass data to the lamp actuator.

**Valid Range**

The valid range of the state is as defined for `SNVT_switch` where 0 means off and 1 means on (255 - undefined - is rejected). The 8-bit intensity value goes from 0 to 200, representing minimum to maximum (0%-100%) intensity.

**Value Feedback Output**

```network output SNVT_switch nvoLampValueFb;
```

This output network variable provides the state of the lamp actuator (ON or OFF) and the percentage level of intensity.

**Valid Range**

The valid range of the state is as defined for `SNVT_switch` where 0 means off and 1 means on (255 - undefined - is not used). The 8-bit intensity value goes from 0 to 200, representing minimum to maximum (0%-100%) intensity.

**When Transmitted**

Whenever the state or intensity of the lamp actuator is requested to change. The delay after last `nviLampValue` update can optionally be configured.
Optional Network Variables

Running Hours Output

network output SNVT_elapsed_tm nvoRunHours;

This output network variable provides the lamp actuator's running hours. The timer is enabled (counting time) whenever the lamp actuator is turned ON.

Valid Range

The valid range is 0-65535 hours (2730 days and 15 hours). The minutes, seconds and milliseconds of the structure SNVT_elapsed_tm are not used.

When Transmitted

On request. The application updates the output variable when the hour is changed.

Default Service Type

The default service type is unacknowledged.

Energy Counter Output

network output SNVT_elec_kwh nvoEnergyCnt;

This output network variable provides the consumed energy in kilowatt-hours.

Valid Range

The valid range is 0-65,535 kWh.

When Transmitted

On request.

Default Service Type

The default service type is unacknowledged.
**Location Label**

network input config SNVT_str_asc nciLocation;

This configuration property can optionally be used to provide more descriptive physical location information than can be provided by the Neuron Chip’s 6 byte location string. The location relates to the lamp actuator object and not the node.

*Valid Range*

Any NULL terminated ASCII string of 31 bytes total length.

*Default Value*

An ASCII string containing all zeroes.

*SCPT Reference*

SCPT_location #17

**Input Value Feedback Delay**

network input config SNVT_time_sec nciInFbDly;

This configuration property sets the period for updating the nvoLampValueFb output when a new actuator position is requested by nviLampValue.

*Valid Range*

Valid range is 0.0-6553.4s.

*Default Value*

The default value is 300 ms.

*SCPT Reference*

SCPTInFbDly #138

**Default Output**

network input config SNVT_switch nciDefault;

This configuration property determines the position that the actuator should adopt at power-on or reset. If the state is defined to be 255 (undefined), the lamp actuator returns to the state and value it had before power interruption.

*Valid Range*

The valid range is as defined for SNVT_switch. The state is 0 (OFF), 1 (ON) or 255 (undefined, see interpretation above). The 8-bit intensity value goes from 0 to 200, representing minimum to maximum (0%-100%) intensity.

*Default Value*

The default state is OFF and the default value is zero.
Running Hours Counter Initialization

network input config SNVT_elapsed_tm nciRunHrInit;

This configuration property sets the initial value of the running hours counter `nvoRunHours`.

**Valid Range**
The valid range is 0-65535 hours (2730 days and 15 hours). The minutes, seconds and milliseconds of the structure `SNVT_elapsed_tm` are not used.

**Default Value**
The default value is 0 hours.

Running Hours Alarm Threshold Level

network input config SNVT_elapsed_tm nciRunHrAlrm;

This configuration property sets the alarm threshold level for the running hours counter `nvoRunHours`. When the threshold level is exceeded, an alarm is sent via the node object.

**Valid Range**
The valid range is 1-65535 hours (2730 days and 15 hours). The minutes, seconds and milliseconds of the structure `SNVT_elapsed_tm` are not used.

**Default Value**
The default value is manufacturer specific.

Energy Counter Initialization

network input config SNVT_elec_kwh nciEnCntInit;

This configuration property sets the initial value of the energy counter `nvoEnergyCnt`.

**Valid Range**
The valid range is 0-65,535 kWh.

**Default Value**
The default value is 0 kWh.
Data Transfer

Manufacturer specific.

Power-up State

On power-up the device output is defined by the configuration property Default Output (nciDefault).

Boundary and Error Conditions

None

Additional Considerations

The network management tools can use the output network variable nvoLampValueFb for monitoring purposes. However, the delay defined by the configuration parameter nciInFbDly must be taken into consideration.