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.
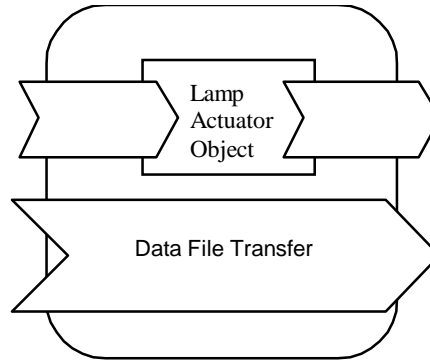

Figure 1.1 Functional Profile

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.

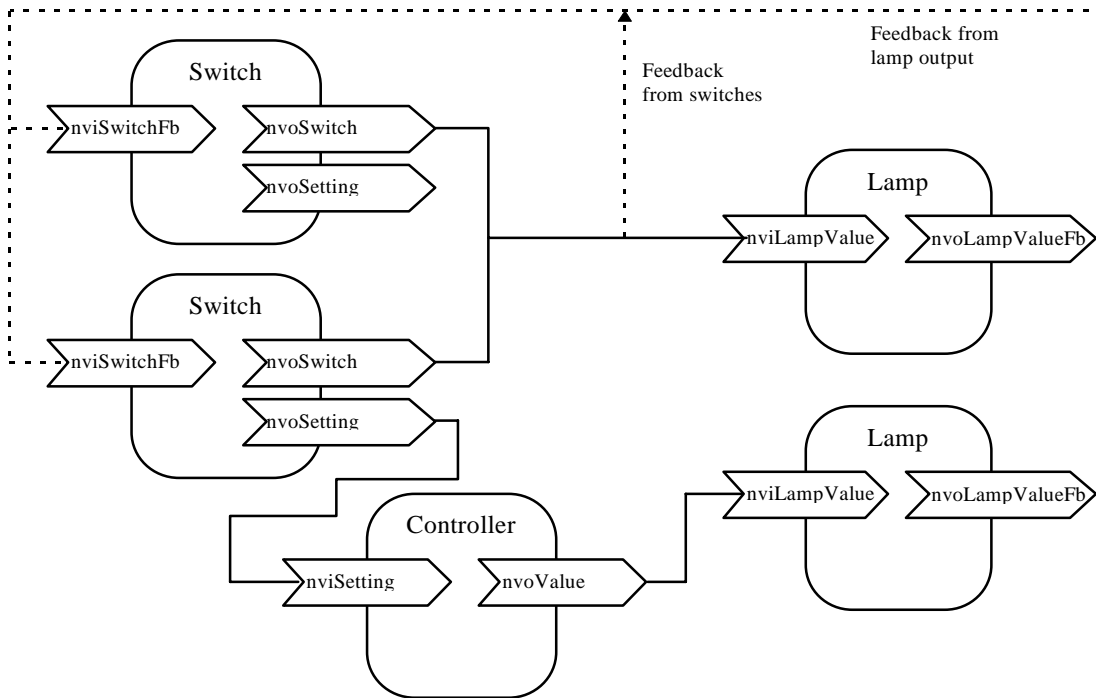In cases of multiple sensors the feedback connection can be used to synchronize a group of switches.
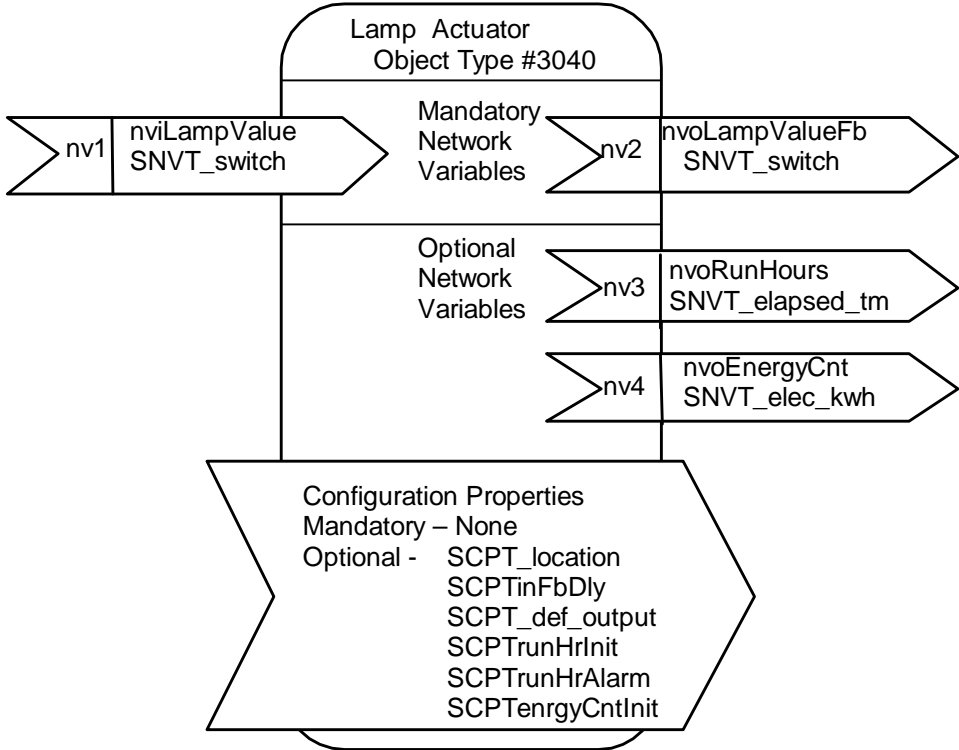
Figure 1.2 Example Usage of Lamp Actuator Object

Object Details

Figure 1.3 Object Details

Table 1 SNVT Details

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

* M = mandatory, O = optional

Table 2 SCPT Details

SCPT	Name	Description

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

* 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

using `nciInFbDly`.

Default Service Type

The default service type is unacknowledged.

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.

Optional Configuration Properties

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.

S C P T   R e f e r e n c e

`SCPT_def_output #7`

Running Hours Counter Initialization

`network input config SNVT_elapsed_tm nciRunHrInit;`

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

V a l i d   R a n g e

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.

D e f a u l t   V a l u e

The default value is 0 hours.

S C P T   R e f e r e n c e

`SCPTrunHrInit #135`

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.

V a l i d   R a n g e

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.

D e f a u l t   V a l u e

The default value is manufacturer specific.

S C P T   R e f e r e n c e

`SCPTrunHrAlrm #136`

Energy Counter Initialization

`network input config SNVT_elec_kwh nciEnCntInit;`

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

V a l i d   R a n g e

The valid range is 0-65,535 kWh.

D e f a u l t   V a l u e

The default value is 0 kWh.

S C P T   R e f e r e n c e

`SCPTenrgyCntInit #137`

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.