
Version 1.0
Switch: 3200



LONMARK[®] Functional Profile: Switch

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Overview

This document describes the profile for a switch sensor object. The profile is used for all type of switches with or without specific hardware. The hardware function is not specified here. The switch sensor object type can be used for both closed and open loop applications.

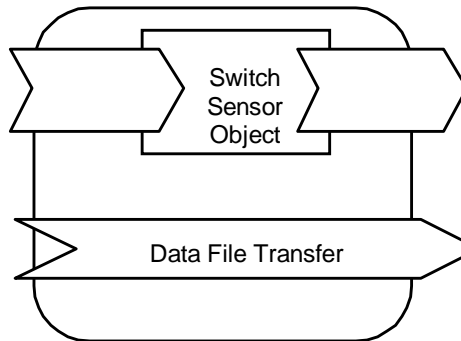


Figure 1.1 Switch Sensor Functional Profile

Example Usage

When the switch object is used directly the switch object output is connected to a lamp actuator object input. When several switches are connected to the same group of lamps, a feedback connection can be used to synchronize the group of switches. The lamp output is connected to switches (feedback A) or switches can be connected to other switches (feedback B). When lamps are controlled by a controller, such as a constant light controller or scene controller, the optional setting output is used to change the mode and/or the setpoint of the controller.

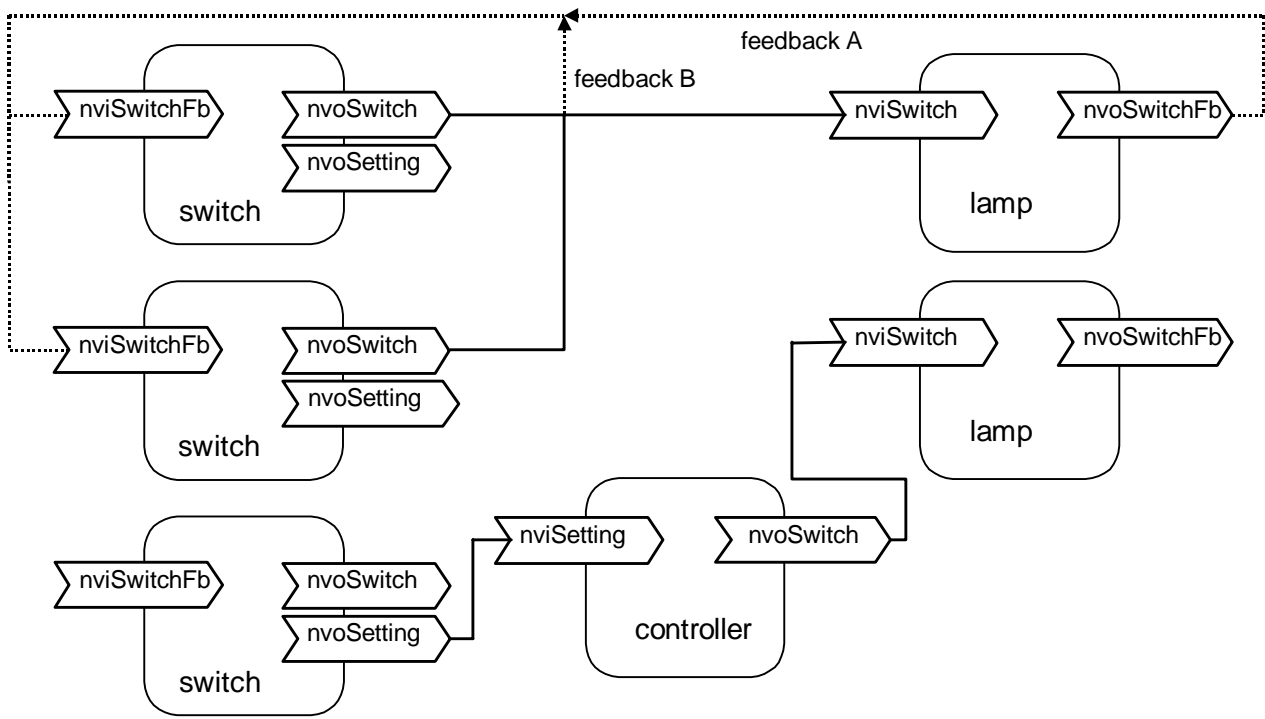


Figure 1.2 Example

Object Details

The switch is used to control devices with on/off or continuous (0 - 100%) characteristics.

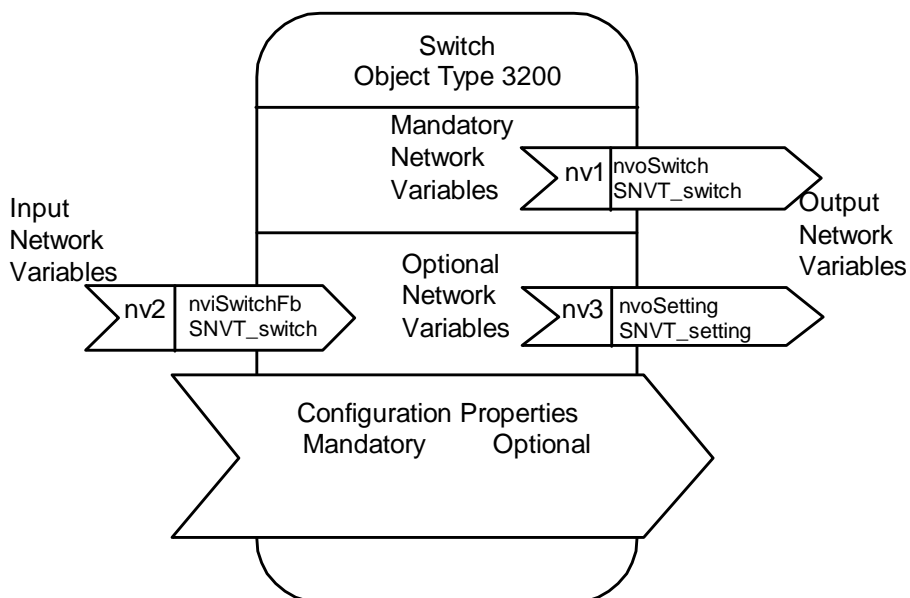


Figure 1.3 Object Details

Table 1.1 SNVT Details

NV # (M/O)*	Name	In/Out	SNVT Type (SNVT Index)	Class	Description
1 (M)	nvoSwitch	Out	SNVT_switch (95)	nv	Switch output value
2 (O)	nviSwitchFb	in	SNVT_switch (95)	nv	Switch feedback value
3 (O)	nvoSetting	Out	SNVT_setting (117)	nv	Setting output

* M = mandatory, O = optional

Table 1.2 SCPT Details

SCPT index (M/O)*	Name	Description
17 (O)	SCPT_location	Location label
52 (O)	SCPTminSendTime	Min. send time for network output
49 (O)	SCPTmaxSendTime	Max. send time for network output
92 (O)	SCPTstepvalue	Ramp update step value
93 (O)	SCPTmaxOut	Max. output value

* M = mandatory, O = optional

Mandatory Network Variables

Switch Output

```
network output SNVT_switch nvoSwitch;
```

This output network variable provides the switch output. It is used for direct control of devices.

Valid Range

The valid range is the range of SNVT_switch, if not limited by the configuration. State 0 means OFF, 1 means ON. The range of the 8-bit intensity value is 0 - 200 (0 - 100% in 0,5% steps). Minimum level is value 0.

When Transmitted

Whenever the hardware state of the switch changes or change is initiated by the application.

Update Rate

There is no maximum update rate. The default minimum update rate is 100 ms. Minimum and maximum update rates are optionally configurable.

Default Service Type

The default service type is acknowledged.

Optional Network Variables

Switch Feedback Input

```
network input SNVT_switch nviSwitchFb;
```

This input network variable provides the feedback from other devices.

Valid Range

Valid range is the range of SNVT_switch.

Default Value

The default value is state = off, value = 0.

Setting Output

```
network output SNVT_setting nvoSetting;
```

When lamps are controlled by a controller, such as a constant light controller or scene controller, the optional setting output is used to change the mode and/or the setpoint of the controller. The controller can be turned ON or OFF and the setpoint can be adjusted.

Valid Range

The valid enumeration range is OFF, ON, DOWN, and UP. The range for UP and DOWN is 0.5 to 100% (1-200 binary)..

When Transmitted

Whenever the hardware state of the switch changes or change is initiated by the application.

Update Rate

There is no maximum update rate. The default minimum update rate is 100 ms. Minimum and maximum update rates are optionally configurable.

Default Service Type

The default service type is acknowledged.

Configuration Properties

Location Label

```
network input config SNVT_str_asc nciLocation;
```

This input configuration network variable is used to store ASCII text. It provides more space for descriptive location information.

Valid Range

Any NUL terminated ASCII string of 31 bytes total length.

Default Value

An ASCII string containing all zeros.

SCPT Reference

SCPT_location #17

Minimum Send Time

```
network input config SNVT_time_sec nciMinSendTime;
```

This input configuration network variable is used to set the minimum time between subsequent updates of network output variables (nvoSwitch and nvoContr).

Valid Range

Min. 0,1 seconds

Max. 2,0 seconds

Default Value

0,1 seconds

SCPT Reference

SCPTminSendTime #52

Maximum Send Time

```
network input config SNVT_time_sec nciMaxSendTime;
```

This input configuration network variable is used to set the maximum time between network output updates. The device will update output variables (nvoSwitch and nvoContr), when the configured time since the last network update has elapsed (Send Heartbeat).

Valid Range

Min. 1,0 seconds

Default Value

The default value is zero. When the value is zero, there is no maximum time defined, and automatic update is disabled.

SCPT Reference

SCPTmaxSendTime #49

Ramp Step Value

```
network input config SNVT_lev_cont nciStepValue;
```

This input configuration network variable is used to setup the step value for up/down ramps. When up/down push buttons are used, this parameter can be used to adjust the total ramp time from 0 to 100%. This is useful, if nciMinSendTime is adjusted.

Valid Range

Min. 0,5 %

Default Value

The default value is 2,5 %.

SCPT Reference

SCPTstepValue #92

Maximum Output Value

```
network input config SNVT_lev_cont nciMaxOut;
```

This input configuration network variable is used to limit the maximum value of nvoSwitch.

Valid Range

0 - 100%

Default Value

The default value is 100%. Value 0% is ignored, and the value of nvoSwitch is not limited.

SCPT Reference

SCPTmaxOut #93

Data Transfer

Manufacturer specific, if used.

Power-up State

Normally the object does not update any network output values after power-up or reset. Manufacturer specific behavior may be different.

Boundary and Error Conditions

None.

Additional Considerations

The switch object may have an associated feedback indicator and manufacturer specific parameters for the indicator.