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Sunblind Controller: 6111



LONMARK[®]

Functional Profile:

Sunblind Controller

SFPTsunblindController

Overview

This document describes the Functional Profile of a Sunblind Controller functional block. The Sunblind Controller functional block generates a control output SNVT_setting (see also profile “Sunblind Actuator”) and optional state information SNVT_sbldn_state. The output values may depend on one or more input SNVTs.

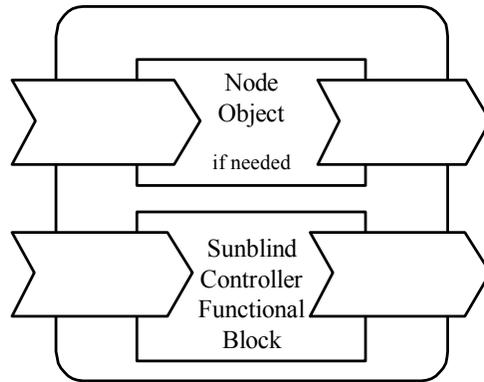


Figure 1 Node Concept

Example Usage

The Sunblind Controller Functional Block may interact with one or more of the following LonMark Functional Block:

- Switch Functional Block #3200
- Scene Panel Functional Block #3250
- Scheduler Functional Block #3301
- BMS and monitoring node
- Space Comfort Controller #8500
- Various sensor functional blocks.

Typically the Sunblind Controller output is connected to the input of a set of Sunblind Actuators. A sunblind switch may be used to have manual access to the Sunblind Controller. A BMS (Building Management System) may influence the controller and the resulting decision is directly transmitted via SNVT_setting to a sunblind actuator functional block.

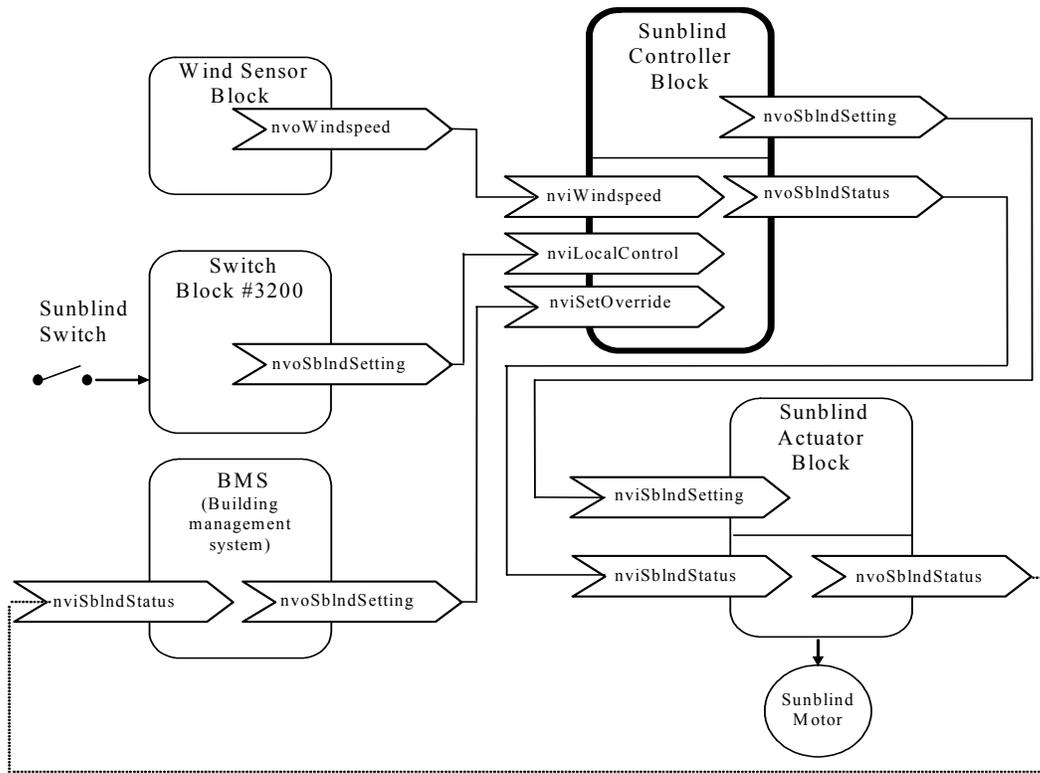


Figure 2: Example of a typical combination of input functional block, Sunblind Controller & Sunblind Actuator

Previous figure shows example of how the Sunblind Controller could be used in a system with other functional blocks or devices.

Functional-Block Details

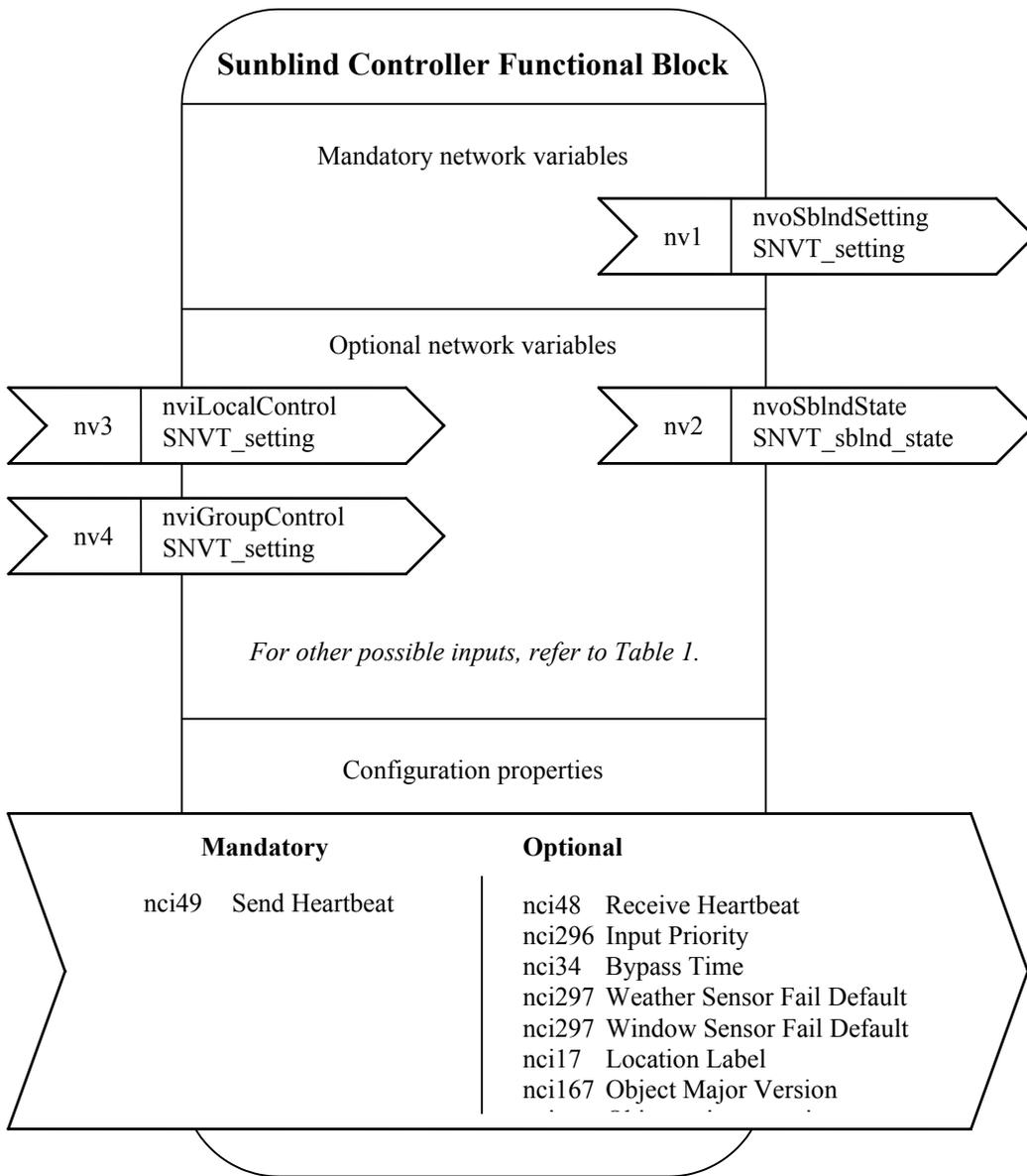


Figure 3 Functional-Block Details

Table 1 SNVT Details

NV # (M/O)*	Variable Name	SNVT Name	SNVT Index	Description
1 (M)	nvoSblndSetting	SNVT_setting	117	Controller setpoint output
2 (O)	nvoSblndState	SNVT_sblnd_state	180	Sunblind controller state output
3 (O)	nviLocalControl	SNVT_setting	117	Local setpoint adjustment
4 (O)	nviGroupControl	SNVT_setting	117	Input for setpoint adjustment in groups
5 (O)	nviWindspeed	SNVT_speed	34	Wind speed sensor input
6 (O)	nviSunLux	SNVT_lux	79	Outdoor brightness input standard range (0...65klux)
7 (O)	nviRain	SNVT_switch	95	Rain sensor input
8 (O)	nviFrost	SNVT_switch	95	Frost sensor input
9 (O)	nviDawn	SNVT_switch	95	Dawn state input
10 (O)	nviDusk	SNVT_switch	95	Dusk state input
11 (O)	nviOutdoorTemp	SNVT_temp_p	105	Outdoor air temperature input
12 (O)	nviIndoorTemp	SNVT_temp_p	105	Indoor temperature input
13 (O)	nviOutdoorRH	SNVT_lev_percent	81	Outdoor relative humidity input
14 (O)	nviIndoorRH	SNVT_lev_percent	81	Indoor relative humidity input
15 (O)	nviIllumLev	SNVT_lux	79	Indoor illumination level input
16 (O)	nviScene	SNVT_scene	115	Scene trigger input
17 (O)	nviGlobalControl	SNVT_setting	117	Global setpoint adjustment
18 (O)	nviWindowContact	SNVT_switch	95	Window contact input
19 (O)	nviAutoMode	SNVT_switch	95	Mode enabling/disabling input
20 (O)	nviOverride	SNVT_switch	95	override state input
21 (O)	nviMaintenance	SNVT_switch	117	Setpoint input for maintenance reasons
22 (O)	nviTerminalLoad	SNVT_lev_percent	81	Heating/cooling demand input
23 (O)	nviOccSensor	SNVT_occupancy	109	Occupancy sensor value input
24 (O)	nviOccManCmd	SNVT_occupancy	109	Occupancy override input
25 (O)	nviGlare	SNVT_switch	95	Glare detecting sensor value input
26 (O)	nviSunElevation	SNVT_angle_deg	104	Astronomical sensor value input for sun declination
27 (O)	nviSunAzimuth	SNVT_angle_deg	104	Astronomical sensor value input for sun inclination
28 (O)	nviSetOverride	SNVT_setting	117	Setpoint override input
29 (O)	nviSetMaint	SNVT_setting	117	Setpoint input for maintenance reasons

* M = mandatory, O = optional

Table 2 SCPT Details

NV # (M/O)*	SCPT Name	SCPT Index	Associated NVs **	Description
Mand.	SCPTmaxSendTime nciMaxSendTime SNVT time_sec (107)	49	nv1 (M) nv2 (O)	Maximum period of time that expires before the functional block will automatically update NV
Opt	SCPTmaxRcvTime nciMaxReceiveTime SNVT time_sec (107)	48	nv5 (O), nv7 (O) nv8 (O), nv18(O)	Maximum period of time that expires before the NVs will use their default values
Opt	SCPTnvPriority nciNvPriority struct SCPTnvPriority	296	Entire Functional Block	Set the priority of the Input NV's
Opt	SCPTbypassTime nciBypassTime SNVT time_sec (107)	34	Entire Functional Block	Defines the maximum amount of time that the controller can be in the bypass (occupancy) mode
Opt	SCPTdefaultSetting nciWeaSenFailPos SNVT_setting (117)	297	Entire Functional Block	Used to provide the default Position for a Heartbeat Failure of the Weather Sensor
Opt	SCPTdefaultSetting nciWinConFailPos SNVT_setting (117)	297	nv18 (O)	Used to provide the default Position for a Heartbeat Failure of the Window Contact
Opt	SCPTlocation nciLocation SNVT_str_asc (36)	17	Entire Functional Block	Used to provide physical location of the device
Opt	SCPTobjMajVer nciObjMajVer unsigned short	167	Entire Functional Block	Defines the major version number of the functional block.
Opt	SCPTobjMinVer nciObjMinVer unsigned short	168	Entire Functional Block	Defines the minor version number of the functional block.

* "Man" = mandatory, "Opt" = optional.

It should be Mandatory for CPs that are Mandatory for an NV that is also Mandatory. This is also valuable for CPs that apply to the Entire Functional Block.

** List of NVs to which this configuration property applies.

An "(M)" means that the CP is Mandatory if the NV (to which it applies) is implemented. An "(O)" means that the CP is Optional if the NV (to which it applies) is implemented.

Mandatory Network Variables

Setpoint Output

```
network output sd_string("@p|1") bind_info(unackd)
SNVT_setting nvoSblndSetting;
```

This output network variable provides the Sunblind Controller setpoint value which may depend on any network input and configuration properties.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

```
nvoSblndSetting.function = SET_NUL
nvoSblndSetting.setting = 0
nvoSblndSetting.rotation = 0
```

Configuration Considerations

The transmission of this NV is regulated by the time specified in the nciMaxSendTime CP, unless the nciMaxSendTime CP has a value of 0.0, or other invalid value; in which case, the NV is not regulated by the nciMaxSendTime value.

When Transmitted

The output variable is transmitted:

- When the ‘state’ has changed.
- Regularly at the interval defined by the configuration variable nciMaxSendTime.

Default Service Type

The default service type is unacknowledged.

Optional Network Variables

State Output

```
network output sd_string("@p|2") bind_info(unackd)
SNVT_sblnd_state nvoSblndState;
```

This output network variable is used to report the actual setpoint, error messages and the cause of the latest change of this setpoint. (For details refer to the *LONMARK SNVT and SCPT Master List*, versions 12.10 and later).

Valid Range

The Valid Range of `nvoSblndState.pos` is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

See Enum Lists (for details refer to the *LONMARK SNVT and SCPT Master List*, versions 12.10 and later).

Default Service Type

The default service type is unacknowledged.

Configuration Considerations

The transmission of this NV is regulated by the time specified in the `nciMaxSendTime` CP, unless the `nciMaxSendTime` CP has a value of 0.0, or other invalid value; in which case, the NV is not regulated by the `nciMaxSendTime` value.

When Transmitted

The output variable is transmitted:

- When the ‘state’ has changed.
- Regularly at the interval defined by the configuration variable `nciMaxSendTime`.

If more than one cause for an error messages is present, then this NV is updated as specified by the manufacturer.

Local Control Input

```
network input sd_string("@p|3") SNVT_setting nviLocalControl;
```

This network variable input is provided to set the controller setpoint output. Usually this command is given by a local control device. The changes made to the setpoint value shall not be stored permanently into the memory. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Canceling the local control is done by `nviLocalControl.function = SET_NULL`.

Local/Auto/Manual switching may also be available using `nviAutoMode`. If input is received on both inputs, the last input "wins." *For details refer to the sunblind actuator profile or the SNVT Master List and Programmer's Guide.*

Valid Range

The Valid Range is given by the interpretation of the "SNVT_setting related to sunblinds" as shown in the tables in the chapter "Additional Considerations" in the Sunblind Actuator Profile.

Default Value

```
nviLocalControl.function = SET_NULL
```

```
nviLocalControl.setting = 0
```

```
nviLocalControl.rotation = 0
```

Configuration Considerations

None specified.

Group Control Input

```
network input sd_string("@p|4") SNVT_setting nviGroupControl;
```

This network variable input is provided to set the controller setpoint output. Usually this command is given by a device which is intended to control groups of controllers or actuators. The changes made to the setpoint value shall not be stored permanently into the memory. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

nviGroupControl.function = SET_NUL

nviGroupControl.setting = 0

nviGroupControl.rotation = 0

Configuration Considerations

None specified.

Wind Speed Input

```
network input sd_string("@p|5") SNVT_speed nviWindspeed;
```

This input network variable is used to get wind speed influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

A value of 6553,5 m/s causes the controller to behave as specified for the event of a wind alarm regardless of other values, which determines the wind speed specific behaviour.

Default Value

nviWindspeed = 0xFFFF

Configuration Considerations

A configuration property Maximum Receive Time can be used to monitor the maximum time that elapses after the last update of nviWindspeed. After expiration of the Maximum Receive Time the nvoSblindSetting should adopt a value as specified by an appropriate configuration property e.g. in order to command a safe position setpoint value."

Configuration Considerations

None specified.

SunLux Input

```
network input sd_string("@p|6") SNVT_lux nviSunLux;
```

This input network variable is used to get sun (outdoor) brightness influence with a range from 0...65klux on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

nviSunLux = 0xFFFF

Configuration Considerations

None specified.

Rain Sensor Input

```
network input sd_string("@p|7") SNVT_switch nviRain;
```

This input network variable is used to get rain sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviRain.state	nviRain.value	Meaning
0	0	no rain
1	0	no rain
1	1..200 (0.5% .. 100.0%)	rain level
0xFF	not considered	INVALID

Default Value

nviRain.value = 0

nviRain.state = 0xFF

Configuration Considerations

A configuration property Maximum Receive Time can be used to monitor the maximum time that elapses last after the last update of nviRain. After expiration of the Maximum Receive Time the nvoSblndSetting should adopt a value as specified by an appropriate configuration property e.g. in order to command a safe position setpoint value."

Frost Sensor Input

```
network input sd_string("@p|8") SNVT_switch nviFrost;
```

This input network variable is used to get frost sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to The SNVT Master List and Programmer's Guide.

nviFrost.state	nviFrost.value	Meaning
0	not considered	no frost
1	0	no frost
1	> 0	frost
0xFF	not considered	INVALID

Default Value

nviFrost.value = 0

nviFrost.state = 0xFF

Configuration Considerations

A configuration property Maximum Receive Time can be used to monitor the maximum time that elapses last after the last update of nviFrost. After expiration of the Maximum Receive Time the nvoSbldSetting should adopt a value as specified by an appropriate configuration property e.g. in order to command a safe position setpoint value."

Dawn State Input

```
network input sd_string("@p|9") SNVT_switch nviDawn;
```

The term “Dawn” means the time before sunrise when it is more bright than during the night but not as bright as the average of daytime.

This input network variable is used to get dawn influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to The SNVT Master List and Programmer’s Guide.

nviDawn.state	nviDawn.value	Meaning
0	not considered	no dawn
1	0	no dawn
1	> 0	dawn
0xFF	not considered	INVALID

Default Value

nviDawn.value = 0

nviDawn.state = 0xFF

Configuration Considerations

None specified.

Dusk State Input

```
network input sd_string("@p|10") SNVT_switch nviDusk;
```

The term “Dusk” means the time before sunset when it is no longer as bright as the average of daytime but brighter than during the night.

This input network variable is used to get dusk influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to The SNVT Master List and Programmer's Guide.

nviDusk.state	nviDusk.value	Meaning
0	not considered	no dusk
1	0	no dusk
1	> 0	dusk
0xFF	not considered	INVALID

Default Value

nviDusk.value = 0

nviDusk.state = 0xFF

Configuration Considerations

None specified.

Outdoor Temperature Input

```
network input sd_string("@p|11") SNVT_temp_p nviOutdoorTemp;
```

This input network variable is used to get outdoor temperature sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

nviOutdoorTemp = 0x7FFF

Configuration Considerations

None specified.

Indoor Temperature Input

```
network input sd_string("@p|12") SNVT_temp_p nviIndoorTemp;
```

This input network variable is used to get indoor temperature sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

nviIndoorTemp = 0x7FFF

Configuration Considerations

None specified.

Outdoor Relative Humidity Input

```
network input sd_string("@p|13") SNVT_lev_percent  
nviOutdoorRH;
```

This input network variable is used to get outdoor relative humidity sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

nviOutdoorRH = 0x7FFF

Configuration Considerations

None specified.

Indoor Relative Humidity Input

```
network input sd_string("@p|14") SNVT_lev_percent nviIndoorRH;
```

This input network variable is used to get indoor relative humidity sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

```
nviIndoorRH = 0x7FFF
```

Configuration Considerations

None specified.

Illumination Level Input

```
network input sd_string("@p|15") SNVT_lux nviIllumLev;
```

This input network variable is used to get indoor light sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

```
nviIllumLev = 0xFFFF
```

Configuration Considerations

None specified.

Scene Input

```
network input sd_string("@p|16") SNVT_scene nviScene;
```

Every scene relates to a particular setpoint value, which could be sent via nvoSblndSetting.

This input network variable recalls a scene or learns the selected scene preset memory with the current sunblind position and slat angle. If the recalled scene number is not found in the preset memory, the controller takes no action.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

Default Value

SC_NUL

Configuration Considerations

None specified.

Global Control Input

```
network input sd_string("@p|17") SNVT_setting  
nviGlobalControl;
```

This network variable input is provided to set the controller setpoint output. Usually this command is given by a device which is intended to control all sunblind controllers or actuators in a network area. The changes made to the setpoint value cannot be stored permanently into the memory. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

nviGlobalControl.function = SET_NUL

nviGlobalControl.setting =0

nviGlobalControl.rotation =0x7FFF

Configuration Considerations

None specified.

Window Contact Input

```
network input sd_string("@p|18") SNVT_switch nviWindowContact;
```

This input network variable is used to get window contact influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Typically this network input is intended for protection of the equipment driven by Sunblind Actuators.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviWindowContact.state	nviWindowContact.value	Meaning
0	not considered	window is closed
1	0	window is closed
1	>0	window is open
0xFF	not considered	INVALID

Default Value

nviWindowContact.value = 0

nviWindowContact.state = 0xFF

Configuration Considerations

A configuration property Maximum Receive Time can be used to monitor the maximum time that elapses last after the last update of nviWindowContact. After expiration of the Maximum Receive Time the nvoSblndSetting should adopt a value as specified by an appropriate configuration property e.g. in order to command a safe position setpoint value."

Auto Mode Input

```
network input sd_string("@p|19") SNVT_switch nviAutoMode;
```

This input network variable is used to get mode switch functionality on the controller. The corresponding behavior of the sunblind controller depends on the internal sunblind controller specifications.

Local/Auto/Manual switching may also be available using `nviLocalControl`. If input is received on both inputs, the last input "wins." *For details refer to the sunblind actuator profile or the SNVT Master List and Programmer's Guide.*

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviAutoMode.state	nviAutoMode.value	Meaning
0	not considered	Disable Auto-Mode (Manual)
1	0	Disable Auto-Mode (Manual)
1	> 0	Enable Auto-Mode
0xFF	not considered	INVALID

Default Value

`nviAutoMode.value = 0`

`nviAutoMode.state = 0xFF`

Configuration Considerations

None specified.

Override Input

```
network input sd_string("@p|20") SNVT_switch nviOverride;
```

This input network variable is used to get override influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviOverride.state	nviOverride.value	Meaning
0	not considered	override disabled
1	0	override disabled
1	> 0	override enabled
0xFF	not considered	INVALID

Default Value

nviOverride.value = 0

nviOverride.state = 0xFF

Configuration Considerations

None specified.

Maintenance State Input

```
network input sd_string("@p|22") SNVT_switch nviMaintenance;
```

This input network variable is used to get maintenance signal influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviMaintenance.state	nviMaintenance.value	Meaning
0	not considered	maintenance disabled
1	0	maintenance disabled
1	> 0	maintenance enabled
0xFF	not considered	INVALID

Default Value

nviMaintenance.value = 0

nviMaintenance.state = 0xFF

Configuration Considerations

None specified.

Terminal Load Input

```
network input sd_string("@p|24") SNVT_lev_percent  
nviTerminalLoad;
```

This input is used to receive the current heating/cooling demand of the system which the sunblind controller shares in. Positive values indicate that cooling energy is required (or in use), while negative values indicate that heating energy is required (or in use).

The actual determination of the value of nviTerminalLoad is manufacturer-defined.

The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

The typical range is -100.0% to 100.0%.

Default Value

nviTerminalLoad = 0 (no heating/cooling demand)

Configuration Considerations

None specified.

Occupancy Sensor Input

```
network input sd_string("@p|26") SNVT_occupancy nviOccSensor;
```

This input network variable is used to get occupancy sensor influence on the controller.

This input network variable is used to indicate the presence of occupants in the controlled space. It is typically sent by an occupancy sensor. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

- 0 = OC_OCCUPIED: The occupancy sensor is indicating that the room is occupied.
- 1 = OC_UNOCCUPIED: The occupancy sensor is indicating that the room is unoccupied.

0xFF = OC_NUL: This is the initial value after power-up and it remains until another value is received. It is used to indicate that this network variable input is invalid or unused.
With the value OC_NUL the considered area is supposed to be occupied.

All other enumerations are handled as equivalent to OC_NUL.

Default Value

nviOccSensor = OC_NUL

Configuration Considerations

None specified.

Occupancy Override Input

```
network input sd_string("@p|27") SNVT_occupancy nviOccManCmd;
```

This input network variable is used to get **business hour info influence** on the controller. It is typically sent by a wall-mounted occupant-interface module or a supervisory node, to manually control occupancy modes, or to override the occupancy sensor input.

The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

- 0 = OC_OCCUPIED: The Sunblind Controller should operate in the occupied mode as defined by the manufacturer (e.g. occupied setpoint).
 - 1 = OC_UNOCCUPIED: The Sunblind Controller should operate in the unoccupied mode as defined by the manufacturer (e.g. unoccupied setpoint).
 - 2 = OC_BYPASS: The Sunblind Controller should operate in the occupied mode for a period of time defined by nciBypassTime.
 - 3 = OC_STANDBY: The Sunblind Controller should operate in the standby mode as defined by the manufacturer (e.g. standby setpoint).
- 0xFF = OC_NUL: This is the initial value after power-up and it remains until another value is received. It is used to indicate that this network variable input is invalid, unused or to cancel a previous command.

Default Value

nviOccManCmd = OC_NUL

Configuration Considerations

A configuration property Bypass Time defines the maximum amount of time that the controller can be in the Bypass mode following a single Bypass request via nviOccManCmd. Additional Bypass requests can restart the timer.

Glare Sensor Input

```
network input sd_string("@p|28") SNVT_switch nviGlare;
```

The term “Glare” means conditions, when occupants could be exposed to direct sun light or something similar.

This input network variable is used to get glare detecting sensor influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

For details refer to the *LONMARK SNVT Master List*, versions 12.10 and later.

nviGlare.state	nviGlare.value	Meaning
0	not considered	no glare
1	0	no glare
1	>0	glare
0xFF	not considered	INVALID

Default Value

nviGlare.value = 0

nviGlare.state = 0xFF.

Configuration Considerations

None specified.

Sun Elevation Input

```
network input sd_string("@p|31") SNVT_angle_deg  
nviSunElevation;
```

This network input represents information from a sun-position calculating device

The elevation is the angle between the horizon and the middle of the sun, considered out of the viewpoint of an observer. Thus this input should be handled in conjunction with the Sun Azimuth Input.

Valid Range

For details refer to The SNVT Master List and Programmer's Guide.

The values 0..90° are typically used (0= Sunrise/Sunset; 90 = zenith position)

Default Value

nviSunElevation = 0x7FFF

Configuration Considerations

None specified.

Sun Azimuth Input

```
network input sd_string("@p|32") SNVT_angle_deg
nviSunAzimuth;
```

This network input represents information from a sun-position calculating device

Valid Range

For details refer to the LONMARK SNVT Master List, versions 12.10 and later.

The values 0..359° are typically used (0 = NORTH, 90 = EAST, 180 = SOUTH, 270 = WEST).

Default Value

nviSunAzimuth = 0x7FFF

Configuration Considerations

None specified.

Override Setting Input

```
network input sd_string("@p|33") SNVT_setting nviSetOverride;
```

This input network variable is used to get override influence on the controller. The corresponding output behavior is defined by the SNVT_Setting.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

```
nviSetOverride.function = SET_NUL  
nviSetOverride.setting = 0  
nviSetOverride.rotation = 0xFF
```

Configuration Considerations

None specified.

Maintenance Setting Input

```
network input sd_string("@p|34") SNVT_setting nviSetMaint;
```

This input network variable is used to get maintenance influence on the controller. The corresponding output behavior of the sunblind controller depends on the internal sunblind controller functionality.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

```
nviSetMaint.function = SET_NUL  
nviSetMaint.setting = 0  
nviSetMaint.rotation = 0xFF
```

Configuration Considerations

None specified.

Configuration Properties

Send Heartbeat (Mandatory)

```
network input config sd_string("&2, i.j.k, 0\x80, 49;")
SNVT_time_sec nciMaxSendTime;
```

This input configuration property sets the maximum period of time that can expire before the Object will automatically update one of the following network variables:

nv1 – nvoSblndSetting (Mandatory)

nv2 – nvoSblndState (Optional)

A Mandatory CP associated with a Mandatory NV means that the CP is Mandatory for implementing this functional block (as in Table 2).

i and *j* are the indices of the NVs in relation to their declaration order within the device, when implemented.

Valid Range

The valid range is 0 to 6553.5 seconds.

Default Value

The default value is 0.0 (no automatic update).

SCPT Reference

SCPTmaxSendTime (49)

Receiver Heartbeat (Optional)

```
network input config sd_string("&2,i.j.k,0\x80,48;")
SNVT_time_sec nciMaxRcvTime;
```

This configuration property is used to control the maximum time that elapses after the last update to a bound network input. Usually, that network input should be monitored which is intended for equipment protection, e.g. nviWindspeed, nviFrost, nviRain or/and nviWindowContact.

Valid Range

The valid range for this configuration property is any value between 0.0 sec and 6,553.4 sec. Setting SCPTmaxRcvTime to zero disables the receive failure detect mechanism.

Default Value

The default value is 0 (no default detect).

SCPT Reference

SCPTmaxRcvTime (48)

Input Priority (Optional)

```
network input config sd_string("&2,i.j.k,0\x80,296;")
struct SCPTnvPriority nciNvPriority[n];
```

This configuration property is used to set the priorities of the inputs.

Valid Range

The valid range for this configuration property is 1 to the NV-member number. An assigned value of "0" means, that Setting Priority for the assigned input is not applicable.

Examples:

nciNvPriority[x].nv = 0 → nciNvPriority not applicable.

nciNvPriority[0].nv = 5 → NV-member number 5 has priority 0. That's the highest priority.

nciNvPriority[4].nv = 2 → NV-member number 2 has the priority 4.

nciNvPriority[x].user_flag = 0 → from SFPT

nciNvPriority[x].user_flag = 1 → from UFPT

Default Value

The default assigned value for each input is 0.

SCPT Reference

SCPTnvPriority

Bypass Time (Optional)

```
network input config sd_string("&1,p,0\x80,34")
SNVT_time_sec nciBypassTime;
```

This configuration property defines the maximum amount of time that the controller can be in the bypass (occupancy) mode following a single bypass request from either a local (hardwired) bypass switch or from another device over the network. Additional bypass requests can restart the timer. Setting this configuration property to zero disables the bypass function and no bypass takes place.

Valid Range

0 .. 65,535

Default Value

0 (no bypass allowed)

SCPT Reference

SCPTbypassTime (34)

Default Position Heartbeat Failure Weather Sensor (Optional)

```
network input config sd_string("&1,p,0\x80,297")
SNVT_setting nciWeaSenFailPos;
```

This configuration property defines the safety position of an **exterior** sunblind, when a failure of safety relevant weather sensor (e.g. wind, rain or frost) has occurred.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

nviLocalControl.function = 3 (SET_UP)

nviLocalControl.setting = 0xFF

nviLocalControl.rotation = 0xFFFF

SCPT Reference

SCPTdefaultSetting (297)

Default Position Heartbeat Failure Window Contact (Optional)

```
network input config sdstring("&2,18,0\x80,297")
SNVT_setting nciWinConFailPos;
```

This configuration property defines the safety position of an **interior** sunblind, when a failure of safety relevant sensor (e.g. window contact) has occurred.

Valid Range

The Valid Range is given by the interpretation of the “SNVT_setting related to sunblinds” as shown in the tables in the chapter “Additional Considerations” in the Sunblind Actuator Profile.

Default Value

nviLocalControl.function = 3 (SET_UP)

nviLocalControl.setting = 0xFF

nviLocalControl.rotation = 0xFFFF

SCPT Reference

SCPTdefaultSetting (297)

Location Label (Optional)

```
network input config sd_string("&1, p, 0\x80, 17")
SNVT_str_asc nciLocation;
```

This configuration property can be used to provide the location of the functional block (or device), where *p* is the functional-block index. The above code declaration is for providing the location of the functional block. If it is preferred, the location of the device can be represented with the following code declaration—if a Node Object functional block is present on the device:

```
network input config sd_string("&1, 0, 0\x80, 17")
SNVT_str_asc nciLocation;
```

Valid Range

Any NULL-terminated ASCII string up to 31 bytes of total length (including NULL). The string must be truncated if the length does not allow the 31st character to be the NULL (0x00).

Default Value

The default value is an ASCII string containing 31 NULLs (0x00).

Configuration Requirements/Restrictions

This CP has no modification restrictions (no_restrictions). It can be modified at any time.

SCPT Reference

SCPTlocation (17)

Object Major Version (Optional)

```
network input config sd_string("&1, p, 0\x84, 167")
unsigned short nciObjMajVer;
```

This configuration property can be used to provide the major version number of the functional block when implemented on a device.

Valid Range

Any integer number from 0 to 255. Only 1-byte of information is accepted.

Default Value

The default value is one (1).

Configuration Requirements/Restrictions

This CP is a Constant (const_flg).

The Constant flag means that all devices with the same Standard Program Identifier (SPID) will have the same value, while the Device-Specific flag attribute means that devices with an identical SPID may have different values for this configuration property.

The presence of these configuration properties within the functional block defines the major version and minor version of the functional block. The major version number must be incremented when the network interface for the functional block changes, while the minor version number must be incremented when the network interface remains the same, but the functional block has a different behavior.

SCPT Reference

SCPTObjMajVer (167)

Object Minor Version (Optional)

```
network input config sd_string("&1, P, 0\A4, 168")
unsigned short nciObjMinVer;
```

This configuration property can be used to provide the minor version number of the functional block when implemented on a device.

Valid Range

Any integer number from 0 to 255. Only 1-byte of information is accepted.

Default Value

The default value is zero (0).

Configuration Requirements/Restrictions

This CP has modification restrictions of Constant (const_flg) and Device-Specific (device_specific_flg): \xA4. It is not to be modified except that it *is* allowable to modify the value in a download of new code to the device.

The Constant flag means that all devices with the same Standard Program Identifier (SPID) will have the same value, while the Device-Specific flag attribute means that devices with an identical SPID may have different values for this configuration property.

The presence of these configuration properties within the functional block defines the major version and minor version of the functional block. The major version number must be incremented when the network interface for the functional block changes, while the minor version number must be incremented when the network interface remains the same, but the functional block has a different behavior.

SCPT Reference

SCPTobjMinVer (168)

Key for Unresolved References

i . j . k are the indices of the CP-associated NVs in relation to their declaration order within the device, when implemented.

p is this functional block's index relative to the device `sd_string` declaration, when implemented.

n is the number of NV intended to be controlled by priority, where *n* must be a number between 2 and the maximum number of NVs on the device (or 255, which is less).

Power-up State

There is no immediate network action on Power-up State.

Boundary and Error Conditions

None specified.

Additional Considerations

None specified.

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