Overview

This document describes the profile for a frost sensor object. This profile is used for devices that can detect the presence of frost.

![Figure 1](image)  
**Figure 1** Frost Sensor Object Functional Profile

Example Usage

Typically the output of this frost sensor is connected to controllers integrated in a sunblind management system.

![Figure 2](image)  
**Figure 2** Example usage of a Frost Sensor Object
Object details

Frost Sensor Object
Type # 1042

Mandatory
Network
Variables

Optional
Network
Variables

Optional Configuration Properties
nc49 - nciMaxSendTFrost
nc52 - nciMinSendTFrost

Figure 3  Object 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>nvoFrost</td>
<td>Out</td>
<td>SNVT_switch (95)</td>
<td>I/O</td>
<td>Presence or absence of frost</td>
</tr>
<tr>
<td>nc49 (M)</td>
<td>nciMaxSendTFrost</td>
<td>-</td>
<td>SNVT_time_sec (107)</td>
<td>config</td>
<td>Send Heartbeat SCPTmaxSendTime</td>
</tr>
<tr>
<td>nc52 (M)</td>
<td>nciMinSendTFrost</td>
<td>-</td>
<td>SNVT_time_sec (107)</td>
<td>config</td>
<td>Minimum Send Time (Send Throttle) SCPTminSendTime</td>
</tr>
</tbody>
</table>

*M = mandatory, O = optional
Table 2  SCPT Details

<table>
<thead>
<tr>
<th>SCPT Index (M/O)*</th>
<th>Name</th>
<th>Association **</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>nci49 (O)</td>
<td>SCPTmaxSendTime</td>
<td></td>
<td>maximum period of time that expires before the Frost Sensor object will</td>
</tr>
<tr>
<td></td>
<td>ndMaxSendTFrost</td>
<td>nv1 (M)</td>
<td>automatically update NV</td>
</tr>
<tr>
<td></td>
<td>SNVT_time_sec (107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nci52 (O)</td>
<td>SCPTminSendTime</td>
<td></td>
<td>minimum period of time that expires before the Frost Sensor object will</td>
</tr>
<tr>
<td></td>
<td>ndMinSendTFrost</td>
<td>nv1 (M)</td>
<td>automatically update NV</td>
</tr>
<tr>
<td></td>
<td>SNVT_time_sec (107)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* M = mandatory, O = optional

** List of NVs to which this configuration property applies. NV index = 0 means configuration property applies to the object as a whole (nv0).

Mandatory Network Variables

**Frost Data**

network output SNVT_switch nvoFrost;

This output network variable provides the state of the frost detector.

Valid Range

<table>
<thead>
<tr>
<th>value field</th>
<th>state field</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0</td>
<td>no frost</td>
</tr>
<tr>
<td>100%</td>
<td>1</td>
<td>frost</td>
</tr>
</tbody>
</table>

All other values in the 2 fields are considered as undefined detection.
When Transmitted
Whenever hardware state changes.

Update Rate
Defined by configuration parameters.

Default Service Type
Defined by manufacturer.

Configuration Properties

**Frost Max Send Time**

network input config SNVT_time_sec nciMaxSendTFrost;

This input configuration network variable is used to control the maximum period that expires before the object automatically transmits the current value of the nvoFrost output network variable.

Valid Range
0 - 6553.4 s

Default Value
Defined by the manufacturer.

SCPT Reference
SCPTmaxSendTime #49.

**Frost Min Send Time**

network input config SNVT_time_sec nciMinSendTFrost;

This input configuration network variable is used to control the minimum period between output network variable transmissions (maximum transmission rate).
Valid Range
0 .. 6553.4 s

Default Value
Defined by the manufacturer.

SCPT Reference
SCPTminSendTime #52.

Power-up State
None specified.

Boundary and Error Conditions
None.

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