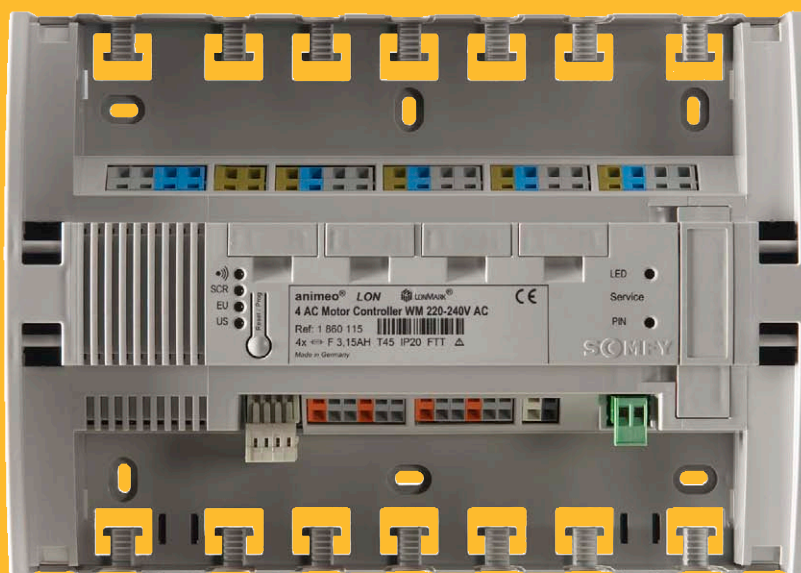


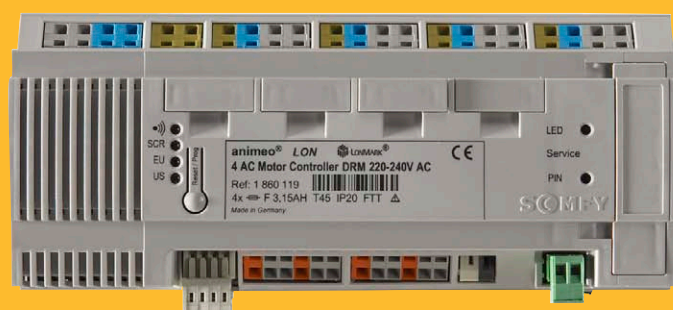
animeo[®]

LON 4 AC Motor Controller WM 220-240 V AC

Operating and configuration manual



Ref. 1860115



Ref. 1860119

General terms and conditions

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1 Overview

1.1 General notes to the control system animeo LON

The LonMark certified animeo LON 4AC Motor Controller (in this document called Moco) is a LON actuator for central and local operation of up to four sun protection blinds such as shutters, vertical screens, external venetian blinds, or window motors with four outputs independent of each other. Combined operation of different end products/sun protection motors or window motors with a Moco is also possible.

The central control is realised via integration into the LonWorks network. The local control can be realised with connectable operating devices to the Moco push buttons (such as venetian blinds, light switches/push buttons, window contacts, occupancy sensors) to the 8 freely configurable binary inputs or by means of the optional radio or infra red plug-in module.

These 8 local binary inputs can be used additionally also as universal LON inputs. Per binary input a LON output signal of the following SNVT types can be send: Setting, Switch, Scene or Occupancy.

For example light actuators can also be controlled and/or dimmed with conventional push buttons.

The 4 integrated LonMark #6111 "Sunblind Controller" objects guarantee a variety of functions for maximum flexibility such as e.g. sun, suntracking, wind, wind direction, rain, frost, humidity and temperature.

The priorities for these functions are freely configurable.

Intelligent change-over between manual and automatic control in order to ensure excellent user-friendliness and energy savings.

Further product features:

- Cost reduction by use of additionally up to 4 x animeo IB+ 4 AC Mocos in the so-called Somfy Subnet with FULL LON functionality.
- Safety position of the blinds after mains voltage return is freely definable.
- Automatic cascading of the outputs possible in order to minimize current peaks.
- Integrated temperature automatic for window openers for regulating ventilation.
- In buildings where radio technology cannot be used, as for example in hospitals, the remote control is possible also over the animeo infrared module.
- Each motor output is individually protected by a fuse.
- The Moco can be used in the delivery state without the need for pre-programming by a LON software, as for example LonMaker, Alex or NL220-TE.
- Position feedback of the connected motors during the move and when reaching the upper or down end limit (SNVT_SbIndStatus and optional SNVT_Switch for the end limits).

1.1.1 Basis of this document

For the configuration of the animeo LON 4AC Moco there is currently no LNS Plug available. This document refers to the Somfy functional profiles:

SomfyNodeObject
SomfySunblindActuatorObject
SomfySwitchObject
SomfyScenPanelObject
SomfyOccSensorObject
SomfyControllerObject
Somfy Adapter Object

This document describes functions, variables and configuration parameters.

1.1.2 Software installation

With the installation of the animeo LON 4 AC Moco there are 5 different .XIF files for use with or without Somfy Subnet copied into the LonWorks/Import/Somfy folder. In addition, the Somfy resource files are copied and registered into the LonWorks/types/User/Somfy folder. You can find this documentation under Start/Programs/Somfy/animeoLon4AC_EN.pdf

The installation CD is also available from Somfy.

1.2 Varying LNS versions

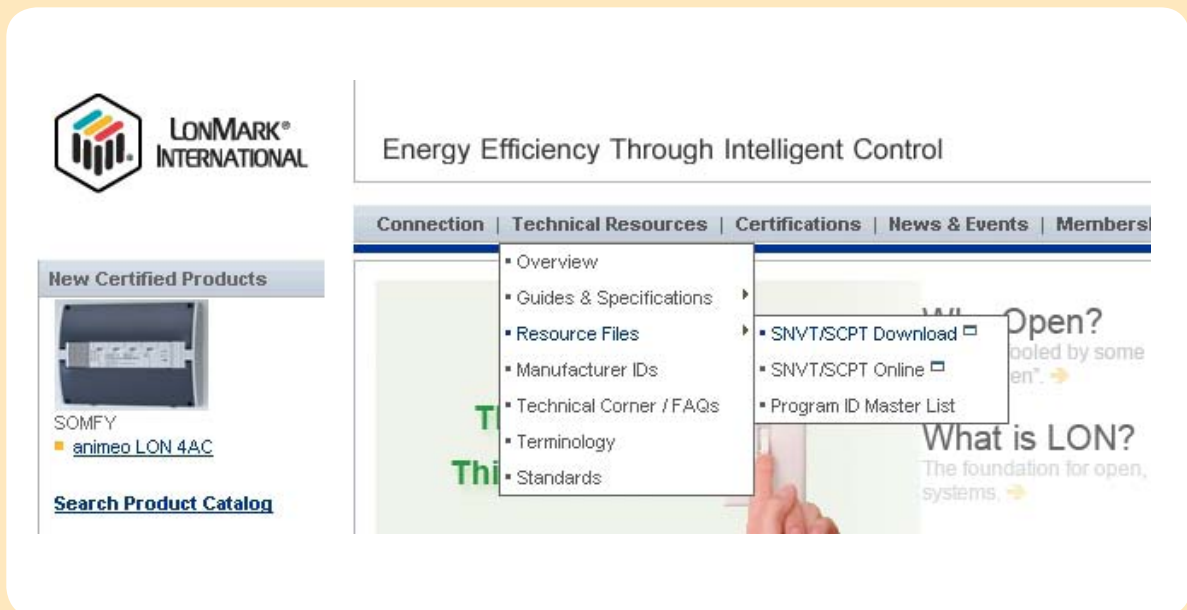
This product has been developed based on the LonMark Guidelines 3.4 and LNS 3.23 (LNS Turbo). If LON Tools with an older LNS version should be used, which is not LNS turbo updatable, then function restrictions have to be expected. In this case, an examination of desired functionality by means of a structure test should generally take place.

Note:

The used tool must be able to support "Extended Network Management Messages" to utilise the full functionality of this product. If necessary, consult your tool manufacturer.

1.2.1 LonMark resource files

To reach a perfect operation with the animeo LON devices, the current LonMark standard resource files version 13 or higher must be used. Download from the homepage www.lonmark.org under http://www.lonmark.org/technical_resources/resource_files/



1.2.2 Somfy resource files

We recommend always using the most current Somfy resource files. These files are included in the selfinstalling file animeoLON_v1_0.exe. Download under www.somfy.de/planner/range/Lon_Produnkte/Downloads or inform yourself about this at your local Somfy partner.

1.2.3 Somfy XIF files

Each animeo LON device requires one of 5 different XIF files, depending on use with or without Somfy Subnet. In addition, when using Somfy Subnet Technology, the number of Subnet Mocos (animeo IB+ 4 AC Moco) is decisive. This solution has the advantage that only the real usable variables are displayed.

	Number of animeo IB+ 4 AC Moco Ref. No. 1860049, 1860081, 1860103, 1860108	XIF Name	Number of motor outputs
1 x animeo LON 4 AC Moco Ref. No. 1860115 or Ref. No. 1860119	0	SY04AC_? .XIF	<u>4</u>
	1	SY08AC_? .XIF	<u>8</u>
	2	SY12AC_? .XIF	<u>12</u>
	3	SY16AC_? .XIF	<u>16</u>
	4	SY20AC_? .XIF	<u>20</u>

? = Software version index

The number and the combinations of LON and IB+ Mocos can be found on the address stickers in the building plan or in a separate allocation table.

Projekt: Test

Pos.	Description	Barcode label
001	Motor 1 + 2 + 3 + 4 Room 242	
002	Motor 5 + 6 + 7 + 8 Room 246	
003	Motor 9 + 10 + 11 + 12 Room 250	

Sample of an allocation table

1.2.4 Used LON Tools

Our tests were carried out with the following system integration tools:

LONMaker 3.1 (LNS Turbo) by the company Echelon (English)

Alex 3.0 by the company Spega (German)

NL220-TE by the company Newron Systems (French)

1.3 SOMFY LON solutions

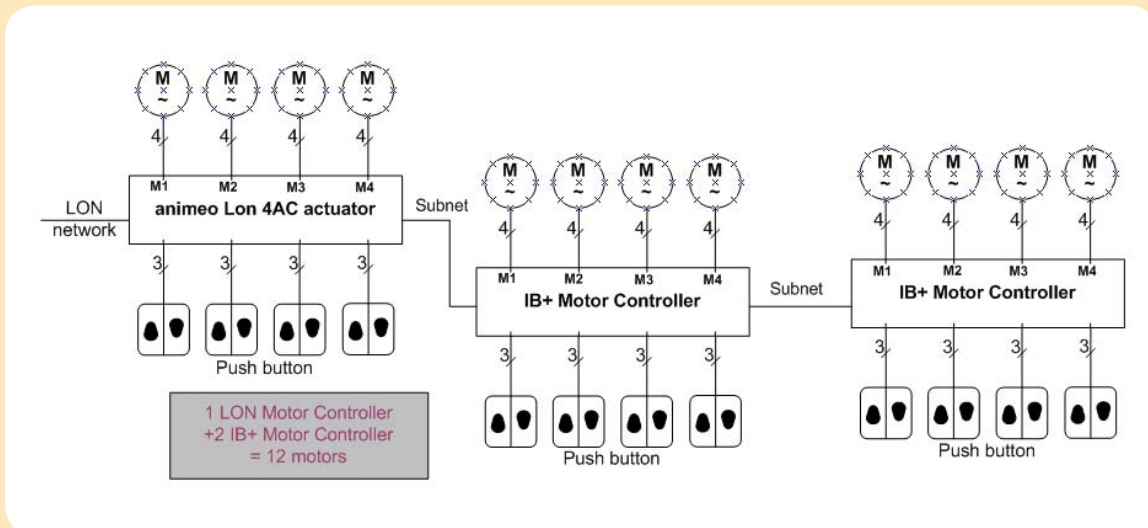
1.3.1 Somfy full LON solution

Only when **animeo LON 4 AC Motor Controllers** are used do we speak of a full LON solution.

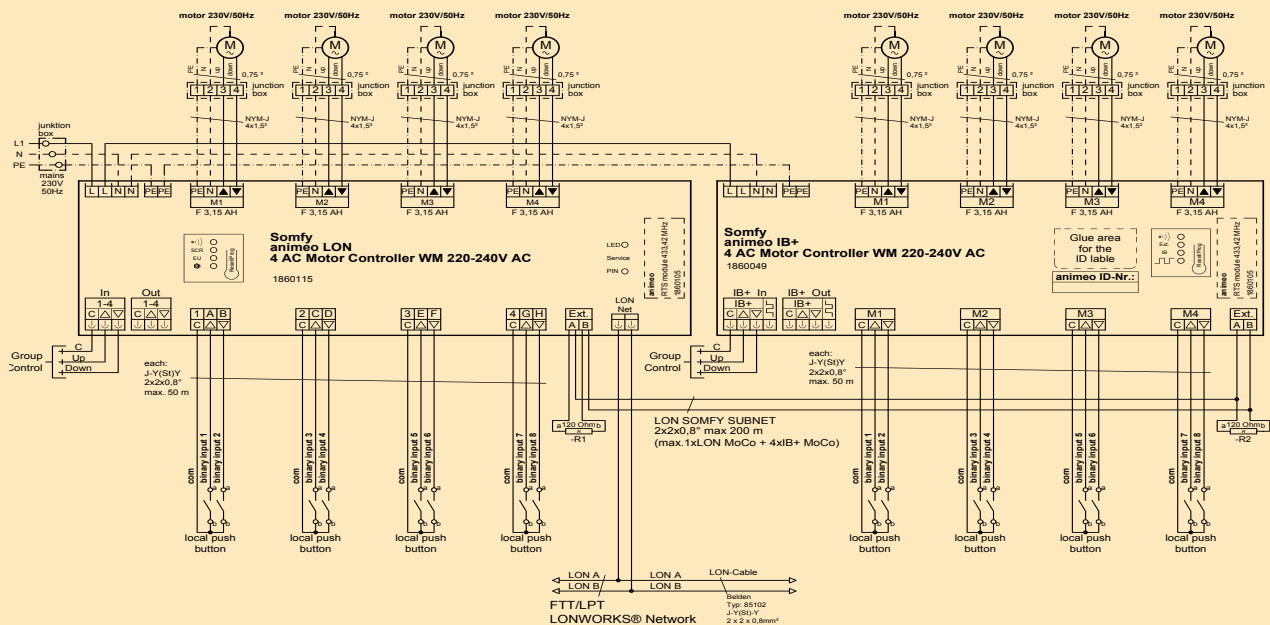
1.3.2 Somfy Subnet solution

Up to 4 animeo IB+ 4AC (standard) Mocos can be connected via an additional 2-wire bus to each animeo LON 4AC Moco. This structure of up to 5 Mocos behaves as an 8, 12, 16, or 20 output LON Moco with full Lon functionality but only one Node ID.

Example: 12 motors controlled via SOMFY subnet



Wiring diagram with one animeo LON and one IB+ subnet Moco



Local push buttons can be used as universal LON-inputs!

⚠ Caution:

This concerns a RS485, 2-wire bus with a maximum cable length of 250m.

This bus must be equipped both sides with 120 Ohm resistances (2 resistors are delivered with the LON Moco)!

This bus must be wired 1 to 1 (pin-correct), thus A on A and B on B, otherwise there will be no communication between the LON Moco and the IB+ standard Mocos possible.

Unintentional wrong connection of the LON bus to the Somfy Subnet terminals (Ext. A & B) can destroy this Subnet input A & B!

1.4 Further documentation

Further information for installing, commissioning and the “Functional Profiles” of the individual objects of the animeo LON 4AC Moco can be found in the product included installation guide or at www.somfy.com/dfs/manuals.

Further information concerning the used network variables can also be found in the LonMark® SNVT master list version 13 or higher at http://www.lonmark.org/technical_resources/resource_files/.

2 Safety references

This product including the additionally needed software was developed and examined by us to ensure the latest state-of-the-art technology. A residual risk, however, to 100 % cannot be excluded.

It is recommended to read this guide before the first commissioning of a Moco.

In addition, you should keep this guide for further use.

Safety references in this document are characterized as follows:

WARNING

Safety references with WARNING must be observed to avoid most serious consequences such as personal injuries.

ATTENTION

Safety references with ATTENTION must be observed to avoid serious consequences such as damage to property and personal injury.

CAUTION

Not observing the safety reference CAUTION can lead to damage to property.

2.1 Intended use

WARNING

If the animeo LON Moco described in this document should be used for other intended purposes, authorization by SOMFY is necessary.

The consequences of a not-intended usage can have serious consequences and cause personal injuries as well as damage to property on the sun protection facility or the mobile mechanical sections of the entire solution.

2.2 Reader target group

This document is addressed to LON system integrators and to LON technology and their application-trained technical personnel in commissioning the sun protection facility with our actuator.

2.3 General safety references

WARNING

Electrical commissioning:

Prior to commissioning, the safety instructions delivered with the equipment must be observed. SOMFY is not liable for defects and damage if faults in the system are based on not paying attention to the operating instructions (wrong installation, faulty operation etc.). Installation, examination and starting up of the system may only be done by a specialist (as per VDE100 in Germany). Switching on all connecting cables without voltage! Take precautions against unintentional switching on!

ATTENTION

Remote control and automatic control of the sun protection:

Due to the most varying control possibilities, it can not always be foreseen when the mechanics of the sun protection facility set in motion! For this reason, it is absolutely necessary in the running system to keep sufficient distance away from the moving parts (observe rules for the prevention of accidents).

CAUTION

During a power failure, the entire facility is not functioning and is thus unprotected against all influences of weather. In these conditions, in good time with a storm, move the sun protection in the commissioning/start-up phase to a safety position. Make sure that all blinds are blocked in this position!

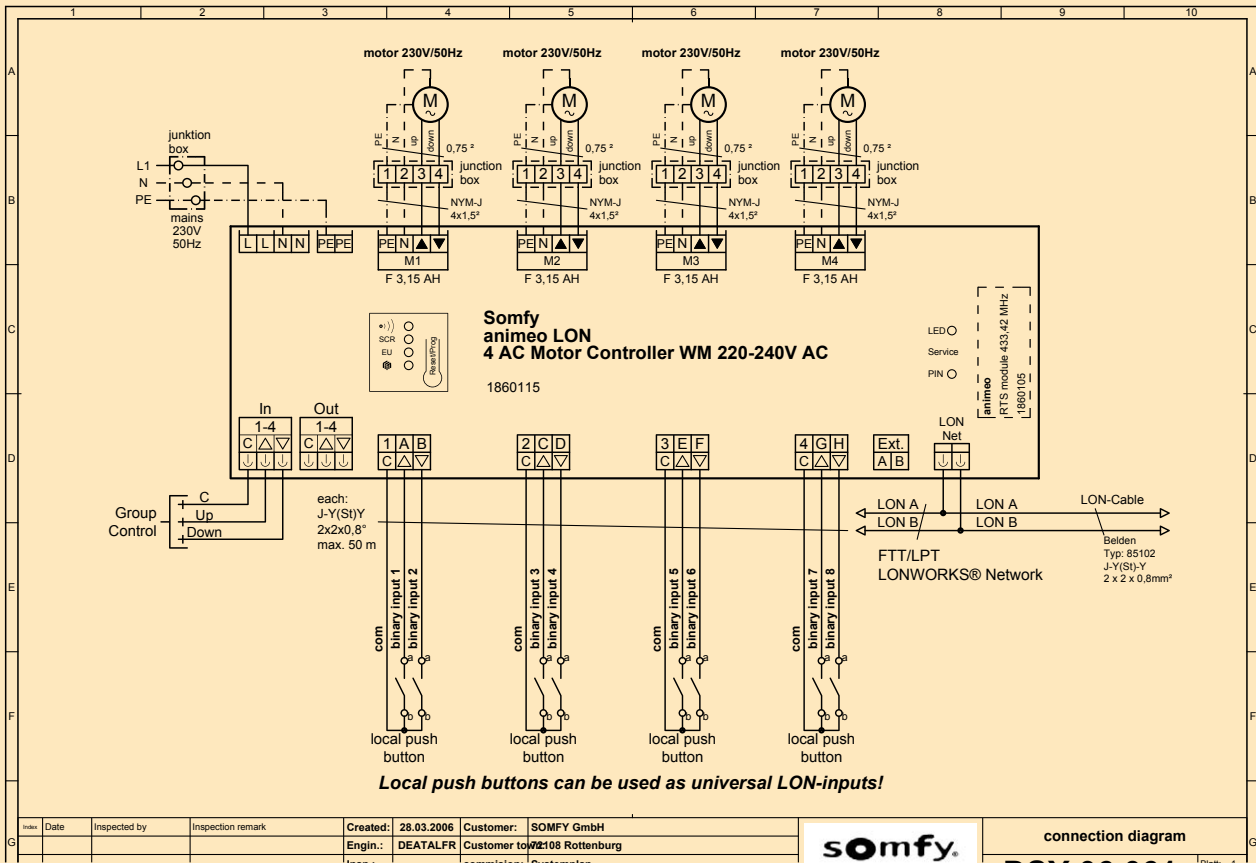
Operating the sun protection in freezing conditions up with an active wind alarm will lead to the expiry of a warranty and no liability claims can be made to SOMFY!

3 Commissioning of the animeo LON 4 AC Moco

3.1 Electrical commissioning according to enclosed installation manual

- Wall mounted or DIN rail assembly
- Electrical connection of all necessary cables such as LON bus, Subnet bus, system, motors, push buttons...
- Apply mains and check whether all Mocos display themselves 1 to 4 minutes with their heartbeat signal (the yellow LED flashes cyclically). When not, all errors must be repaired according to the installation manual.
- Verify correct motor directions by means of central input and when necessary rewire.
- If used, verify local push button inputs. All push button inputs are functionable before commissioning by a LON Tool 1 to 1 up the motor outputs. Push button 1 controls motor 1 etc.

Wiring diagram

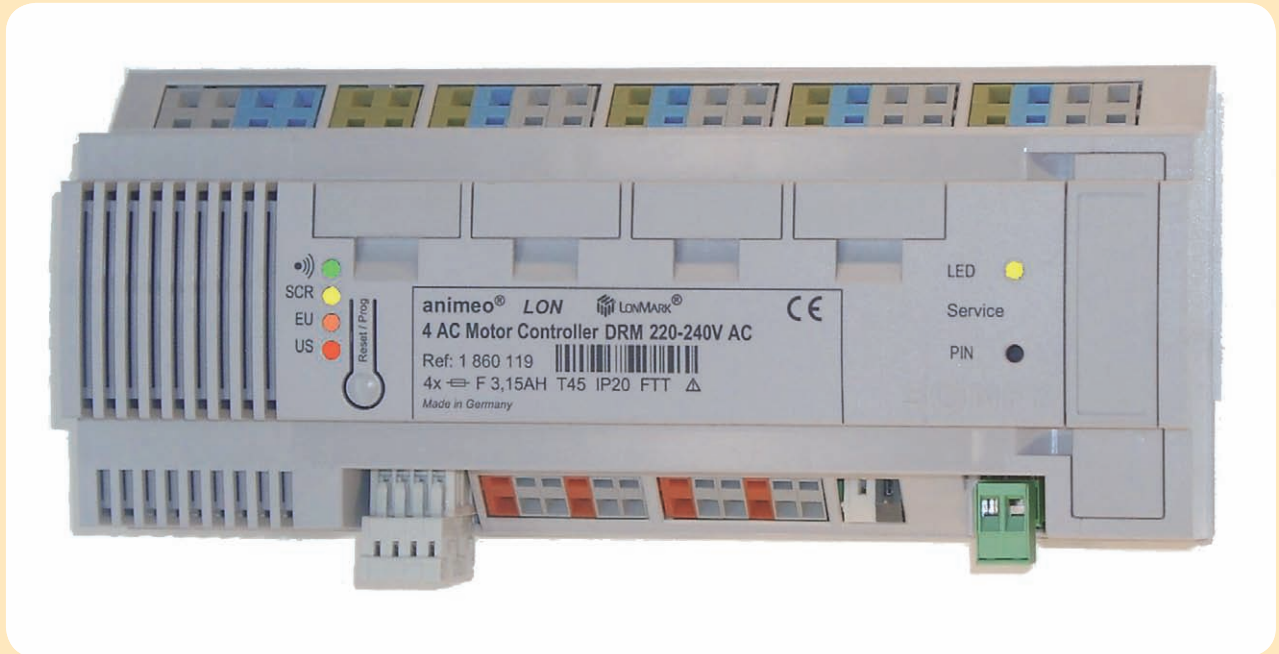


3.1.1 Signification of the 5 different LED's of the LON Mocos during normal operation

In total, 5 Leds are on the front side of the LON Moco.

The 4 Leds on the left side of the LON Moco serve in the status and communication display of the Moco.

The yellow Service ID LED of the LON module is for the status indication of the LON module.



Signification **green LED**:

- Flashing after a short press on the Reset/Prog push button = RTS module not learned in.
- Continuous light for 2 seconds after a short press on the Reset/Prog push button = RTS module learned in.

Signification **yellow LED**:

- Continuous flashing for 250 msec. every 3 seconds (default) = Heartbeat with Subnet communication (both with the LON and IB+ Moco).
- No signal after a short press on the Reset/Prog push button = different blinds types are selected in the Moco.
- Flashing after a short press on the Reset/Prog push button = blinds running times not learned in. Selected blinds type: Screen, roller shutter.
- Continuous light for 2 seconds after a short press on the Reset/Prog push button = blinds running times learned in. Selected blinds type: Screen, roller shutter.

Signification **orange LED**:

- No signal after a short press on the Reset/Prog push button = varying blinds types are selected in the Moco.
- Flashing after a short press on the Reset/Prog push button = blinds running times not learned in. Selected blinds type: Venetian blinds with EU push button ergonomics.
- Continuous light for 2 seconds after a short press on the Reset/Prog push button = blinds running times learned in. Selected blinds type: Venetian blinds with EU push button ergonomics.

Signification **red LED**:

- Continuous flashing for 1 sec. every 3 seconds (default) = heartbeat with LON communication (only with the LON Moco).
- Continuous light signals an overwrite command at the nviOverride input of the Sunblind Actuator of object.
- No signal after a short press on the Reset/Prog push button = different blinds types are selected in the Moco.
- Flashing after a short press on the Reset/Prog push button = blinds running times not learned in. Selected blinds type: Venetian blinds with US push button ergonomics.
- Continuous light for 2 seconds after a short press on the Reset/Prog push button = blinds running times learned in. Selected blinds type: Venetian blinds with US push button ergonomics.

Signification of the **yellow** LON service Pin LED:

- No signal = delivery status default or commissioned.
- Continuous flashing in 1 second cycles = device un-commissioned.
- Continuous light for 2 seconds after a short press on service ID push button = sending the neuron ID on the bus.

3.1.2 Reset with the Reset/Prog push button

⚠ ATTENTION

When the Reset/Prog push button is pushed for longer than 10 seconds it causes a reset back to the factory delivered status of the Moco!

In this procedure, all logical connections and all settings are reset back to the factory delivered status!

Indicate the LEDs during the last reset procedure:

After pressing the Reset/Prog push button for 10 seconds, the green and orange LED shine two times briefly. After releasing the Reset/Prog push button all 5 LEDs of the Mocos shine briefly and the resetting process starts.

This process can last, depending upon number of connected Subnet Mocos, up to 4 minutes. During this time, the LEDs most varying samples will be displayed.

The reset procedure is completed when the yellow LED starts with the cyclical 3 second heartbeat signal.

3.1.3 Allocation of the push buttons/binary inputs to the objects

All push buttons/binary inputs of the Mocos are marked by symbols.

The designations in brackets refer only to the LON Moco and not to the IB+ Moco.

C (1 to 4)	=	Common, root
Arrow up (A, C, E, G)	=	Up, binary input 1
Arrow down (B, D, F, H)	=	Down, binary input 2



animeo LON 4 AC Motor Controller

3.2 System requirements for the LON system integration of the animeo LON 4 AC Mocos

- The LON Tool with which the integration is done must work under LNS 3.23 (LNS turbo) or higher and support "Extended Network Management Messages".
- The PC with which the system integration is done should correspond to the up-to-date standard to keep the time requirement of the system integration to a minimum.

Minimum requirement:

1. Processor 2.0 GHz
2. Memory 512 MB

- The most current LonMark standard and Somfy resource files must be installed.

3.3 Installation of the animeo LON files

By starting the file animeoLON_v1_0.exe, all necessary files are stored on your PC and the resource files are registered.

Without the use of and the registering of SOMFY Resource files, the display of the variable values in a wrong format will be displayed.

Example:

UCPTdefaultPos	N	ff,ff,7f,ff	instead of	UCPTdefaultPos	N	SET_NUL 127 655
----------------	---	-------------	------------	----------------	---	-----------------

Note:

Should this occur, that the variable values are displayed in the wrong format, the resource files must be registered. E.g. under LONMaker with the LNS Resource File Catalogue Utility

Located under Start/Programs/Echelon LNS Utilities/LNS Resource File Catalogue Utility



The following files are contained in the animeoLON_v1_0.exe:

- Xif files
- Somfy resource files
- Somfy Visio stencils
- Documentation animeo LON 4 AC
- Installer manual

You can download these files also from our homepage under www.somfy.com/fachpartnerbereich/idnex.cfg?page=/fachpartnerbereich/home/partnerservice/lontechnik&language=de-de or we can send them to you on a CD. Please contact your responsible Somfy partner.

3.4 Proceeding with the LON system integration of the animeo LON 4 AC Moco

There are various options of integration:

- Offline integration with Xif file
- Online integration with Xif file using "Recover"
- Online integration with Xif file

3.4.1 Offline integration with Xif file

The intended Xif can be seen in the diagram, or in the table with the bar code stickers of the Mocos. See also point 1.2.3. After successful integration, 22 LonMark objects and a Virtual object are available per LON Moco. With this method, the produced, electrically-commissioned "self bindings" will be deleted. This means that local operation will no longer function!

If you use LonMaker, you should work with Visio stencils. The Somfy standard Visio stencils will appear after starting the program animeoLON_v1_0.exe in the folder C:\LonWorks\LonMaker\Visio.

You can download this file also from our homepage under www.somfy.de/Planerbereich/Lon_Produkte/Downloads or we can send this to you on a CD. Please contact your responsible Somfy partner.

3.4.2 OFFLINE or ONLINE commissioning with XIF file

This kind of commissioning can take place in an existing or new LON network. The XIF files are in the folder...\\LonWorks\import\Somfy\. 5 different XIF files are available (see also 1.2.3).

The number following SY.. e.g. SY04AC_? .xif indicates how many motor outputs the LON device has in total. In this example, there are 4 motor outputs. It refers to an individual animeo LON 4AC Moco without SOMFY Subnet. With the file SY20AC_? .xif, it refers in total to 5 animeo Mocos with a total of 20 motor outputs, whereby this SOMFY Subnet includes one animeo LON 4AC Moco and 4 x animeo IB+ 4AC Mocos.

? = software-Version index

After this start up and commissioning, the e.g. animeo LON 20AC Moco with all 102 functional and 1 virtual objects without preset "bindings" is available.

3.5 Use of LonMaker Visio Stencils

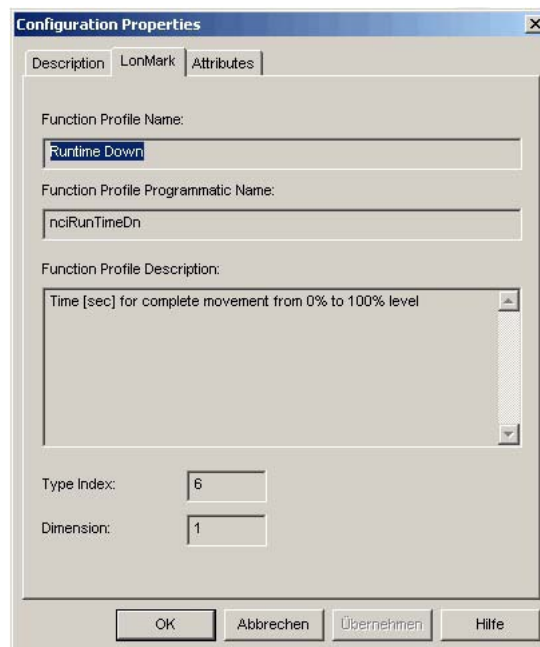
The simplest and most efficient kind of commissioning and pre-configuration is done using Visio Stencils provided by Somfy for LonMaker. These Somfy standard stencils can be found after starting the program animeoLON_v1_0.exe in the folder C:\LonWorks\LonMakerVisio. In the Visio file Somfy animeo LON Shapes.vss you can find many different configuration templates which you can use as a basis for further use in your project.

You can download this file from our homepage under www.somfy.com/fachpartnerbereich/idnex.cfg?page=/fachpartnerbereich/home/partnerservice/lontechnik&language=de-de or we can send it to you on CD. Please contact your responsible Somfy partner.

3.6 Online information regarding individual variables

In the Somfy resource files, a short description is given for each variable. These short descriptions are shown e.g. under "Properties" in the Browser.

Example: Sunblind actuator object, UCPTRunTimeDn



3.7 Deinstallation

- Delete the individual Xif files.
- Delete the documentation.
- Delete the Visio stencils.
- Deregister the Somfy resource files and then delete them.

4 Uploading the application to the LON module

Contrary to most other LON devices on the market, there is only one application for the animeo LON 4AC Moco. This application contains all functions including those for the Somfy Subnet. This application is already contained in the LON module in the factory-installed version.

Nevertheless, should an application download be necessary, please contact your local Somfy partner, or contact us directly at Somfy CBS Business support.

Email: cbs.business.support@somfy.com

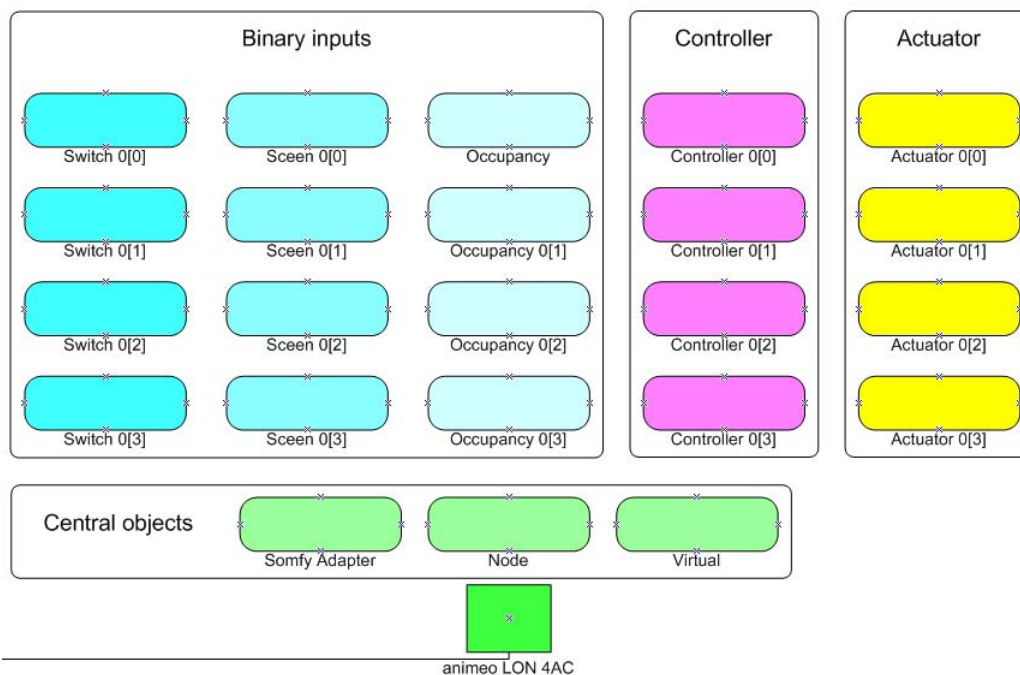
5 LNS Plugin

Currently, there is no LNS Plug-in available.
Availability is foreseen as from 08 /2008.

6 Description of the functions and the objects of the animeo LON actuator

6.1 Overview of LonMark objects

Apart from the Node, Somfy adapter and Virtual object, of which only one per device and/or per Somfy Subnet is present, all other objects 1 x per motor output are available. This guarantees maximum flexibility for your projects. When using SOMFY Subnet technology every additional Client Moco generates additionally 5 objects per motor output.



With the SOMFY Subnet technology, a maximum of 4 animeo IB+ 4AC Moco (Clients) with animeo LON 4AC Moco over a separate 2-wire bus can be used.

Finally, at this maximum stage of development, **1 LON device** with 102 functional and 1 virtual objects, 20 motor outputs and 40 configurable LON binary inputs are at your disposal.

The following object descriptions refer to the sun protection specific variables and configuration parameters. Further information can be found in the "Functional Profiles" document of the respective objects.

Note:

The numbering of the objects and Mocos always starts with 0.

Example 1: Switch object 0 (2)
This refers to the third Switch object of the first LON Moco.

Example 2: Switch object 2 (3)
This refers to the fourth Switch object of the third Subnet Moco

6.2 Node object #0000

1 x per LON module

The Node object is the Central Management Block for the announcement and configuration states of all objects. This object has network variables for the entire structure and its 22 to 102 objects are valid. These 102 objects result from the optional use of the Somfy LON Subnets with 5 Mocos in total.

1 x LON Moco and 4 x IB+ Moco

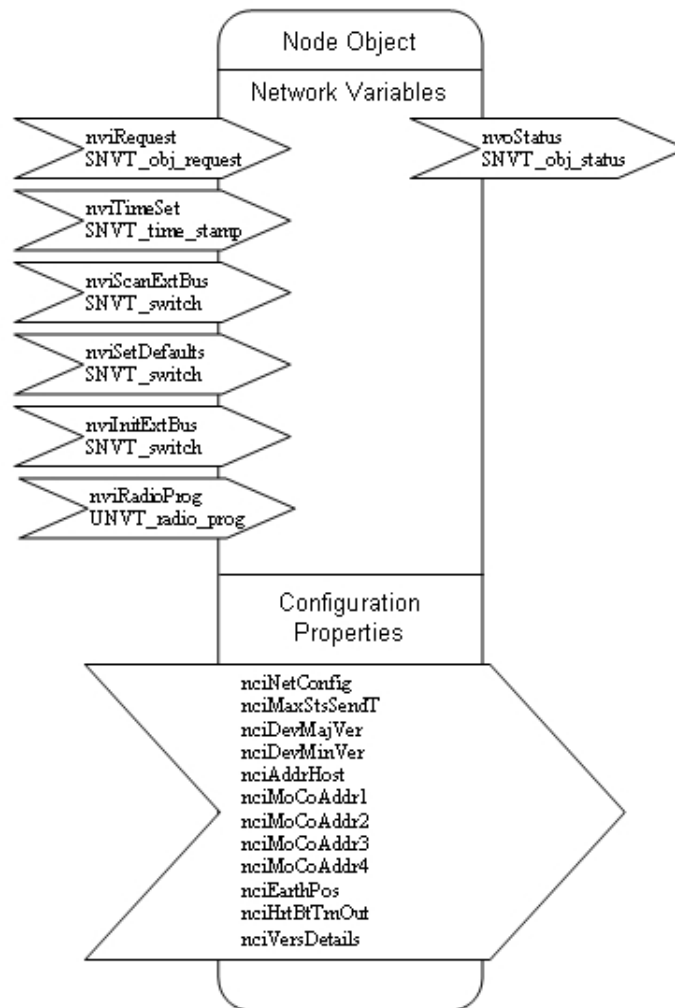


Fig. 6.2 Node object #0000

6.2.1 Detailed description of Node object #0000

In addition to the function range described in the LonMark standard Node Object the following SOMFY functions are implemented:

- 6.2.2 Time and date input
- 6.2.3 Reading in the external SOMFY Subnet buses
- 6.2.4 Set the variables and configuration parameters to the SOMFY default values
- 6.2.5 Initialization of the external SOMFY Subnet bus
- 6.2.6 Programming mode on/off for the optional RTS radio module
- 6.2.7 Selection of network configuration or preset configuration (self installation)
- 6.2.8 Building position input
- 6.2.9 Heartbeat of the device

The found Moco IDs through scanning are sorted automatically and stored in the following UCPTs:

UCPTaddrHost = LON host Moco and
UCPTaddrExt1 to 4 = IB+ Client Moco1 to 4

For the announcement of the found addresses with a LON Tool the UCPTs must again be synchronized (Resynchronise CPs)!

⚠ ATTENTION

When a Client Moco is exchanged, the previous address can also be overwritten by hand or by means of bar code scanner with the new address.

However, a 0 should never be entered in a new address!

This 0 will lead to another program ID and thus, all logical connections become inactive and all settings with the exception of the blinds running times are thus set back!

Note:

Following scanning, the sequence of the Moco addresses are in ascending order and do not represent the physical conditions in the UCPTaddrExt 1 to 4!

⚠ ATTENTION

Should the number of Mocos in a SOMFY Subnet segment change after the LON integration:

Such as e.g. through an extension of the system from 3 to 4 Mocos, then the XIF file of the animeo LON Moco of SY12AC_?.xif to SY16AC_?.xif must be matched as the Program ID has also changed! The changing of the program ID lead and all logical connections become inactive and all settings, except the blinds running times are thus set back! This takes place however, only after switching the power supply off and on again, or via renewed scanning via the LON Tool.

6.2.4 Set back the variables and configuration parameters to the SOMFY default values

The variable `nviSetDefaults (SNVT_switch #95)` is used to set back all variables and configuration parameters to the factory-installed delivery status.

To do this the variable must be described `nviSetDefaults` with the value 100,0 1.

All default values are stored in the device!

General reference:

The current values of the Mocos and not the default values should always be used!

6.2.5 Initialization of the external SOMFY Subnet bus

Using the variable `nviInitExtBus (SNVT_switch #95)` it is possible to initialise all Mocos in a SOMFY Subnet.

Through initialising the motor parameters the individual Mocos are questioned and made available in the LON module for further use. In addition, the Client IB+ Mocos are switched from standard IB+ to LON operation.

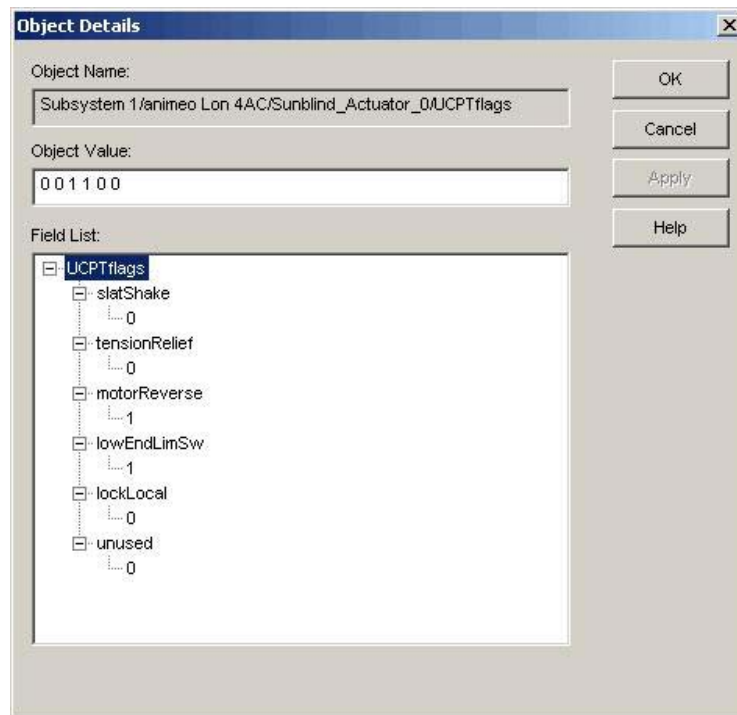
The initialisation is also implemented automatically after each power cut.

6.2.6 Programming modus on/off for the optional RTS radio module

To program the optional RTS radio module (Somfy Ref. No.1860105), the Reset/Prog button must normally be pushed continuously on the Moco until the green LED shines. Since this is not possible on site due to assembling conditions however, the RTS radio module can be shifted into the programming mode without having to access the Moco using the variable `nviRadioProg (UNVTradioProg)`.

Structure of the variable from left (MSB) to right (LSB):

MSB	=	Host Moco
		Moco1
		Moco2
		Moco3
		Moco4
LSB	=	Valid



To shift a RTS module into the programming mode, the bit of the respective Moco must be assigned with the module to be programmed and the valid bit assigned with 1!

Example:

The RTS radio module in Moco3 is to be programmed. `nviRadioProg` must be described with 000101.

There are 3 possibilities to end the programming mode:

1. After successful programming by finally pushing the press buttons of the learned-in hand transmitter for 1 second.
2. When the RTS radio module does not recognize a radio telegram for longer than 60 seconds, the programming mode is automatically ended.
3. To end the programming mode, the valid bit of the variable `UCPTradioProg` is selected with 1 and the respective bit of the Moco with 0 (0 0 0 0 0 1).

6.2.7 Selection network configuration or preset configuration (self installation)

Note:

This parameter should not be changed manually. See also LonMark SCPT Master List!

With the configuration parameter `SCPTnwrkCfg` it is possible to select between external configuration over the LON network, or the local preset configuration with a total of X = 8 "bindings".

`CFG_LOCAL = 0` is the delivery status. On delivery, the equipment is ready for use after allocating the power supply including the local push buttons which affect, 1 to 1, the motor outputs.

When a Moco with a LON Tool is brought into operation, the `CFG_LOCAL` changes to `CFG_EXTERNAL`.

`CFG_EXTERNAL = 1` means that all functional modules without preset "bindings" are available. The local push buttons are no longer assigned 1 to 1 to the motor outputs!

Should this parameter nevertheless be changed manually, this change only becomes active after a restart e.g. Power off active!

6.2.8 Building position input

To calculate the sun position for suntracking, the building position in degrees and its height above sea level are needed. These parameters are entered with the help of the variable **UCPTearthPos**.

The configuration parameter consists of 7 values on the left (MSB) as follows:

MSB =	Latitude_direction	positive (1) or negative (0) degree of latitude
	Longitude_direction	positive (1) or negative (0) degree of longitude
	Latitude_deg	latitude in degrees
	Latitude_min	latitude in minutes
	Longitude_deg	longitude in degrees
	Longitude_min	longitude in minutes
LSB =	height_above_sea	height of the building above sea level in meters
N	= Northern hemisphere	Latitude_direction (1) positive degree of latitude
S	= Southern hemisphere	Latitude_direction (0) negative degree of latitude
W	= Western hemisphere	Longitude_direction (1) positive degree of longitude
E	= Eastern hemisphere	Longitude_direction (0) negative degree of longitude

Example: Rottenburg am Neckar = **UCPTearthPos 1 0 N 48 0 E 8 0 337**

Rottenburg am Neckar = + 48 ° northern latitude, - 8 ° eastern longitude, 337 m above sea level.

6.2.9 Heartbeat of the equipment

After successful commissioning by the electrician, all animeo LON Mocos send a message with a cyclical LED signal (yellow and red LED) every 3 seconds. Identical to this, all Subnet Mocos announce themselves with this cyclical signal. Here however, only the yellow LED flashes every 3 seconds.

These 3 seconds correspond to the default setting of the parameter **UCPHeartBeatTmOut**.

During the 3 seconds standard setting, the heartbeat position (safety position) is only started after 30 seconds without receipt of the signal!

Ratio **UCPHeartBeatTmOut** to safety position = 1 to 10!

The heartbeat signal for the Subnet bus is generated by the LON Moco. Additionally, this heartbeat is triggered by each Lon telegram for the actuator over the LON bus. Range of adjustment from 0 to 254 seconds.

6.3 Sunblind actuator #6110 object

1 x per motor output

The "Sunblind Actuator Object" is for controlling the sun protection or window motor connected to the device. Controlling is done e.g. through a "Sunblind CONTROLLER Object". A feedback output can be attached to a Sunblind CONTROLLER Object e.g. for learning scenes.

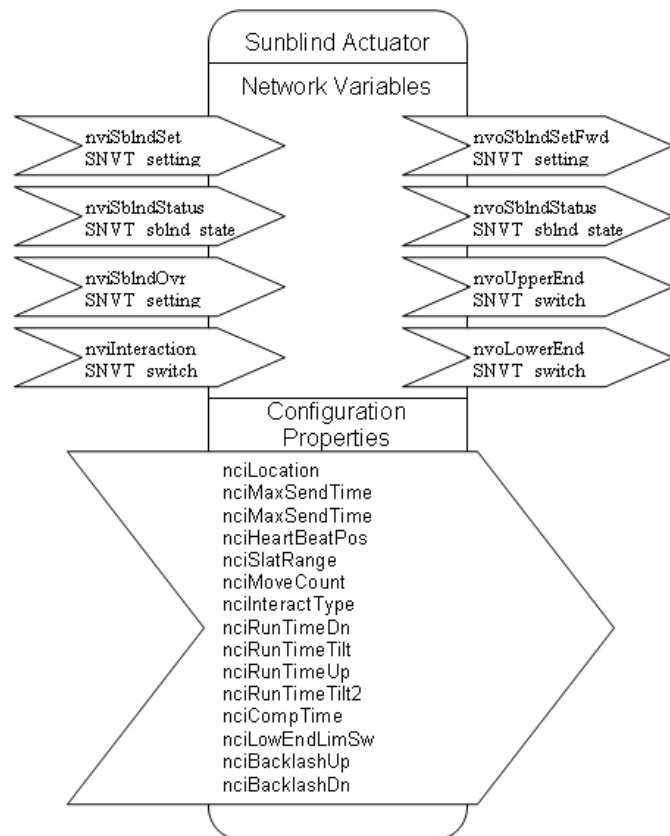


Fig. 6.3 Sunblind Actuator Object #6110

6.3.1 Description of details of Sunblind Actuator object

In dependence with the function range described in the LonMark standard Sunblind Actuator Object, the following SOMFY functions are implemented:

- 6.3.2 Extra signal outputs for messaging the upper and down end limit position
- 6.3.3 Interaction input
- 6.3.4 Heartbeat position
- 6.3.5 Slats tilting range in degrees
- 6.3.6 Blinds cycle counter
- 6.3.7 Input of varying blinds running times for UP and DOWN
- 6.3.8 Input of the slats tilting time for venetian blinds
- 6.3.9 Additional slats tilting time for venetian blinds with third end position.
- 6.3.10 Compensation parameters for special venetian blinds
- 6.3.11 Compensation of mechanical delay times with tilting of venetian blinds slats
- 6.3.12 Priority input sunblind override

LonMaker Browser view of the Somfy Sunblind Actuator Object

Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	Device 1	Func Block 1		SCPTlocation	N	Sunblind Actuator
Subsystem 1	Device 1	Func Block 1		UCPTbacklashDn	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTbacklashUp	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTcompTime	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTheartBeatPos	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTlowEndLimSw	N	BOOL_TRUE
Subsystem 1	Device 1	Func Block 1		UCPTmoveCount	N	5
Subsystem 1	Device 1	Func Block 1		UCPTrunTimeDn	N	326,2
Subsystem 1	Device 1	Func Block 1		UCPTrunTimeTilt2	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTrunTimeTilt	N	1,5
Subsystem 1	Device 1	Func Block 1		UCPTrunTimeUp	N	0,0
Subsystem 1	Device 1	Func Block 1		UCPTslatRange	N	-90 90
Subsystem 1	Device 1	Func Block 1	nviInteraction0		N	0,0 - 1
Subsystem 1	Device 1	Func Block 1	nviInteraction0	UCPTInteract	N	IA_NULL
Subsystem 1	Device 1	Func Block 1	nviSblndOvr0		N	SET_NULL 0,0 0,00
Subsystem 1	Device 1	Func Block 1	nviSblndSet0		N	SET_STOP 0,0 0,00
Subsystem 1	Device 1	Func Block 1	nviSblndStatus0		N	SET_NULL 0 0 SBCS_NULL SBE_NULL
Subsystem 1	Device 1	Func Block 1	nvoLowerEnd0		N	1,0 0
Subsystem 1	Device 1	Func Block 1	nvoLowerEnd0	SCPTmaxSendTime	N	0,0
Subsystem 1	Device 1	Func Block 1	nvoSblndFwd0		N	SET_STOP 0,0 0,00
Subsystem 1	Device 1	Func Block 1	nvoSblndStatus0		N	SET_STOP 1 90 SBCS_NULL SBE_NO_ERROR
Subsystem 1	Device 1	Func Block 1	nvoSblndStatus0	SCPTmaxSendTime	N	0,0
Subsystem 1	Device 1	Func Block 1	nvoUpperEnd0		N	99,0 0
Subsystem 1	Device 1	Func Block 1	nvoUpperEnd0	SCPTmaxSendTime	N	0,0

6.3.2 Extra signal outputs for messaging the upper and down end limit position

Additionally to the detailed feedback of the position and of other end-product data by means of **nvoSblndStatus**, we offer 2 variables of the type SNVT_Switch for messaging of end positions.

These variables can be used e.g. for the announcement of the blinds position through an LED on a LON push button or on the BMS level. In addition, this can be used also in connection with our Interaction Input to achieve cascading of the blinds (see also 6.3.3).

Upper limit reached	=	nvoUpperEnd 100,0 1	nvoLowerEnd 0,00 0
blinds to 70% down	=	nvoUpperEnd 70,0 0	nvoLowerEnd 30,00 0
Down limit reached	=	nvoUpperEnd 0,00 0	nvoLowerEnd 100,0 1

Venetian blind operation:

In the down limit **nvoLowerEnd**, the entire slats tilting range remains at the value of 100,0 1!

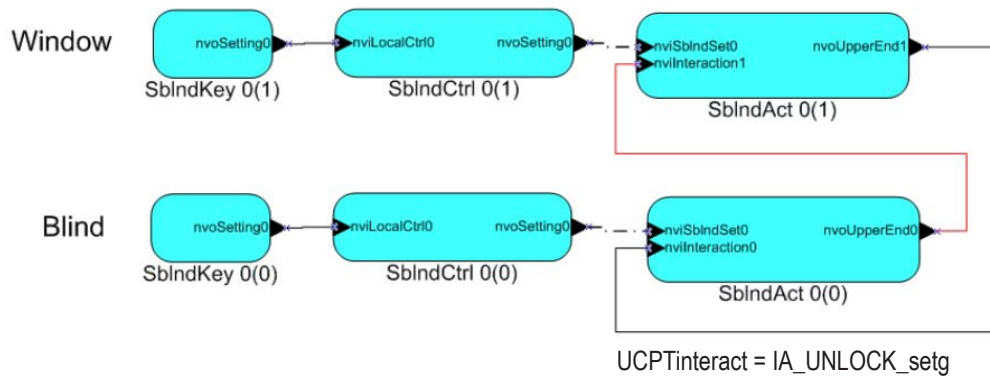
These variables are send when there is a change, and/or cyclically depending on the parameter setting **nciMaxSendMode**.

6.3.3 Interaction input

The Interaction function consists of the input **nviInteractionX** and the configuration variable **UCPTInteract**. With this function it is possible to block the **nviSblndSet** input or to release it.

Example: Common blocking of windows and blinds to avoid an operational error with no existing window contacts.

Binding example



Only if the window is totally closed the blind can move and only if the blind is in the upper end limit the window can move.

With **UCPTinteract** this function can be activated and stopped.

- IA_NULL** = deactivated (default)
- IA_LOCK_SETG** = activated, **nviSblndSet** input is closed until at **nviInteraction** the input value 0,0 0 is shown!
- IA_UNLOCK_SETG** = activated, **nviSblndSet** input is so long closed until at **nviInteraction** the input value 100,0 1 is shown!

The last received instruction over the input, **nviSblndSet** is always stored in the blocking time and implemented after the release!

Note:

This cascading function of the blinds should only be used with central control when a correct sequence of functions can no longer be ensured in local operation!

6.3.4 Heartbeat position

With activated heartbeat function of the Moco with the parameter (**UCPTHeartBeatTmOut**), size 0 seconds in the Node object (see 6.2.9), a position between 0,0 (default) and 100,0 can be set with the parameter (**UCPTHeartBeatPos**). This position will be moved to by the Moco if the heartbeat signal is no longer received.

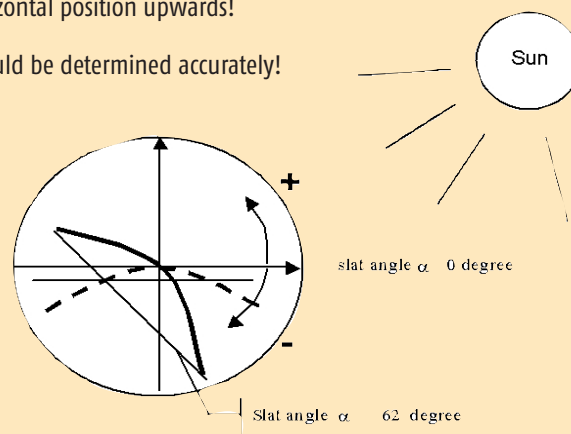
6.3.5 Slats tilting range in degrees

With the configuration parameter (**UCPTslatRange**) the slats tilting range of a venetian blind with 2 values is entered in degrees.

UCPTslatRange - 90 90 (default) means:

- 90 = tilting range of the slats in the horizontal position downwards!
- 90 = tilting range of the slats in the horizontal position upwards!

Note: To obtain an optimal result these angles should be determined accurately!



6.3.6 Blinds cycle counter

This counter ([UCPTmoveCount](#)) is an additional display function per motor output. Each stop of the blinds is counted. This counter can be set back only by Somfy!

6.3.7 Input of varying blinds running times for UP and DOWN

Depending on the end-product, the running times for a complete movement from the down limit to the up limit can deviate considerably from the running times from the upper to the down limit. For this reason we offer two parameters. Both variables can be configured within the range of 0,0 to 327,6 seconds. The more precise these values are entered, the more accurate is the positioning of the blinds after a position movement command!

Default value of the variables:

Running time down	nciRunTimeDn	326,2 seconds
Running time up	nciRunTimeUp	326,2 seconds

6.3.8 Input slats tilting time for venetian blinds

The parameter [UCPTrunTimeTilt](#) defines the necessary time of a full slats tilting from the minimum to the maximum slats angle. This parameter is entered in seconds.

Default values of the variable:

Slats tilting time	UCPTrunTimeTilt	1,5 seconds (default)
--------------------	---------------------------------	-----------------------

If other blinds types like e.g. screens or roller shutters without slats are used, this value must be set at 0,0 seconds!

Note: To obtain an optimal result, these angles should be determined accurately!

6.3.9 Additional slats tilting time for venetian blinds with 3rd end limit

The parameter [UCPTrunTimeTilt2](#) defines the necessary time of a full slats tilting from the minimum to the maximum slats angle in the down limit of the 3rd end limit of the venetian blind. This parameter is entered in seconds.

Default value of the variable:

Slats tilting time	UCPTrunTimeTilt2	0,0 seconds
Range of adjustment:		0,0 to 327,6 seconds.

If other blinds types are used, this value should remain at 0,0 seconds!

Note: To obtain an optimal result, these angles should be determined accurately!

6.3.10 Compensation parameters for special venetian blinds

The parameter [UCPTcompTime](#) serves for the compensation of the so-called sag with special venetian blinds in the down limit. All movement commands after reaching the down limit need this additional compensation time as the blinds must move from this sag before the slats move.

Default value of the variable:

Compensation time	UCPTcompTime	0,0 seconds
Range of adjustment:		0,0 to 327,6 seconds

6.3.11 Compensation of mechanical delay time when tilting blinds slats

In that the mechanical components of a venetian blind as a rule always have tolerances and hereby do not work without delay, it is necessary to compensate for this especially with regards to the tilting time (approx. 1,5 seconds). This concerns 2 settings **UCPTbacklashDn** and **UCPTbacklashUp**.

Backlash refers to the change of the slats tilting direction from up to down or the other way around. Hereby, is created each time a dead time where the slats do not move.

UCPTbacklashDn serves in compensating for dead time with a change of the slats tilting direction from down to up.

UCPTbacklashUp serves in compensating for dead time with a change of the slats tilting direction from up to down.

Default values: 0,0
Range of adjustment: 0,0 to 327,6 seconds

Note: To obtain an optimal result these angles should be determined accurately!

6.3.12 Priority input Sunblind Override

This priority input **nviSblndOvr** overwrites the input to general **nviSblndSet!**

This can be used for different requirements, like e.g. superordinate BMS management, additional alarm function, blocking all Controller functions, window cleaning ...

⚠ ATTENTION:

Here, safety movement commands can also be overwritten by the Sunblind Controller object and thus the blinds can possibly be damaged!

nviSblndOvr = SET_NUL = 0,0 0,00 (default) = deactivated!

6.4 Sunblind Switch object #3200

1 x per double push button input

The Sunblind Switch object serves in evaluating and configuring both assigned binary inputs. The state of these two inputs is made available in the form of **SNVT_Setting** and **SNVT_Switch** output variables for further processing by LON objects.

⚠ ATTENTION:

The Sunblind Switch object #3200, Scene panel object #3250 and Occupancy object #1060 uses the same local binary inputs. This means that a closed contact (1) at a binary input in each of the 3 objects initiates a reaction. Specified by the "binding" and the configuration, the signal to be used for further processing is determined in the network.

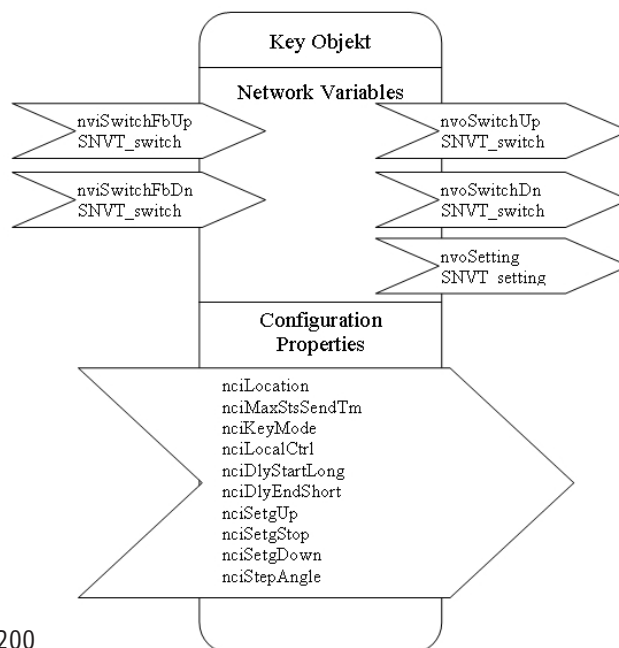


Fig. 6.4 Switch object #3200

6.4.1 Detailed description of Switch object

Depending on the function range described in the LonMark standard "Switch Object" the following SOMFY functions are implemented:

- 6.4.2 Selection of the push button ergonomic
- 6.4.3 Key function allocation and response times of the local push buttons (LON)
- 6.4.4 Release/blocking of the local push button inputs
- 6.4.5 Radio or infrared remote control

LonMaker Browser view of the Somfy Switch object

Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		SCPTlocation	N	MoCo inputs as Sunblind Keys
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTmaxSendTime	N	0,0
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTdlyEndShort	N	0,3
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTdlyStartLong	N	2,0
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTkeyMode	N	EU_MODE
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTlocalCtrl	N	BOOL_TRUE
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTsetgDown	N	SET_DOWN 127,5 655,34
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTsetgStop	N	SET_STOP 0,0 0,00
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTsetgUp	N	SET_UP 127,5 655,34
Subsystem 1	AppDevice_2	SnBlndKeys0[0]		UCPTstepAngle	N	20,00
Subsystem 1	AppDevice_2	SnBlndKeys0[0]	nwiSwitchFbDn00		N	0,0 -1
Subsystem 1	AppDevice_2	SnBlndKeys0[0]	nwiSwitchFbUp00		N	0,0 -1
Subsystem 1	AppDevice_2	SnBlndKeys0[0]	nvoSetting00		N	SET_NUL 0,0 0,00
Subsystem 1	AppDevice_2	SnBlndKeys0[0]	nvoSwitchDn00		N	0,0 -1
Subsystem 1	AppDevice_2	SnBlndKeys0[0]	nvoSwitchUp00		N	0,0 0

This object has a Setting and two Switch outputs. The Switch outputs can be used with both switch feedback inputs as a "closed loop". This is necessary e.g. with lighting control with several switching locations.

The variable **nvoSetting (SNVT_Setting #117)** sends movement commands according to the assigned binary inputs and the configuration of the UCPTs.

6.4.2 Selection of the push button ergonomic

With the configuration parameter **UCPTkeyMode** one of nine different push button ergonomics can be selected. Four of these modes are fully LON modes and thus dependent on configuration and above all "bindings".

LON modes	Binary inputs are used only as LON inputs, the "nvoSetting" output is dependent on the configuration and the operating time of the connected push buttons
KEY_DEFAULT	The "nvoSwitch" output is active/On (100,0 1) as long as the push button is pressed.
KEY_TOGGLE	The "nvoSwitch" output changes (edge controlled, toggled) with each push button between inactive/Off (0,0 0) and active/On (100,0 1).
KEY_DIMM	The "nvoSwitch" output dims continuously upwards from 0,0 0 to 100,0 1 and then again downwards from 100,0 1 to 0,0 0 as long as the push button remains pressed.
KEY_US_EU	The "nvoSwitch" output is active/On (100,0 1) as long as the push button is pressed.

6.4.3 Key function allocation and response times of the local push buttons

Behaviour of the variable "nvoSetting" in "KEY_DEFAULT" mode depending on the configuration parameter:

- UCPTlocalCtrl
- UCPTdlyEndLongUCPTmaintainOnDelay
- UCPTdlyEndShort
- UCPTsetgStop
- UCPTsetgUp

UCPTlocalCtrl: This parameter serves in displaying the active/deactive local modes of the binary or push button or switch inputs. Activated = BOOL_TRUE or deactivated = BOOL_FALSE.

Only when, in the field **UCPTkeyMode** in all 4 switch objects of a Moco, one of the 6 local modes is selected, can this also be used. In this case, the announcement of BOOL_FALSE changes to BOOL_TRUE!

Default = BOOL_FALSE = LON modes

UCPTdlyEndLong & UCPTdlyEndShort: The duration of the signal at the binary input initiates different "Setting" movement commands depending on the configuration of these parameters.

SOMFY US mode without step function:

UCPTdlyEndLong = 2.0 and
UCPTdlyEndShort = 0.3 and

Initiates the following movement commands:

Short pressing of the push button under 0,3 seconds releases the respective push button assigned movement command. This command remains active up to the next push button activation (self-holding).

Longer pressing of the push button between 0,3 and 2,0 seconds releases the respective push button assigned movement command, which is always followed by a stop command at the end of depressing the key (dead man).

Longer pressing of the push button over 2,0 seconds releases the respective key assigned movement command. This command remains active up to the next push button activation (self-holding).

SOMFY EU mode without step function:

UCPTdlyEndLong = 2,0 and
UCPTdlyEndShort = 0,0

Initiates the following movement commands:

Pressing the push button between 0,0 and 2,0 seconds initiates the respective push button assigned movement command from which always a stop command at the end of depressing the push button follows (dead man).

Longer pressing of the push button over 2,0 seconds releases the respective push button assigned movement command. This command remains active up to the next activation of a push button (self-holding).

SOMFY Screen mode:

UCPTmaintainOffDelay = 0,0 and
UCPTmaintainOnDelay = 0,0

Initiates the following movement commands:

Each pressing of the push button, independent of the duration, releases the respective push button assigned movement command. This command remains active up to the next activation of a push button (self-holding).

Only by simultaneously pressing the up and down press button will a stop command be send.

SOMFY Step Mode:

KEY_US_EU = active

SOMFY US mode with step function:

UCPTdlyEndLONG = 2,0 and
UCPTdlyEndShort = 0,3 and
UCPTstepAngle = 20 degree initiates the following movement commands:

Short pressing of the push button under 0,3 seconds releases the respective push button assigned movement command. This command remains active up to the next push button activation (self-holding).

Longer pressing of the push button between 0,3 and 2,0 seconds releases one 20 degree step movement command, which is always followed by a stop command at the end of the movement.

Longer pressing of the push button over 2,0 seconds releases the respective key assigned movement command. This command remains active up to the next push button activation (self-holding).

SOMFY EU mode with step function:

UCPTdlyEndLong = 2,0 and
 UCPTdlyEndShort = 0,0 and
 UCPTstepAngle = 20 degree initiate the following movement commands:

Pressing the push button between 0,0 and 2,0 seconds releases one 20 degree step movement command, which is always followed by a stop command at the end of the movement.

Longer pressing of the push button over 2,0 seconds releases the respective push button assigned movement command. This command remains active up to the next activation of a push button (self-holding).

SOMFY Screen mode:

UCPTdlyEndLong = 0,0 and
 UCPTdlyEndShort = 0,0 initiates the following movement commands:

Each pressing of the push button, independent of the duration, releases the respective push button assigned movement command. This command remains active up to the next activation of a push button (self-holding). Only by simultaneously pressing the up and down press button will a stop command be send.

Push button function assignment:

UCPTsetgDown Down push button Default = SET_Down 127 655
 UCPTsetgUp Up push button Default = SET UP 127 655
 UCPTsetgStop Down and Up push button Default = SET stop 0 0
 simultaneously pressed!

Each of these keys can be assigned with a command according to SNVT_Masterlist for the variable [SNVT_Setting #117](#).

The remaining 6 modes are local modes which LON independently and directly refers to the motor output of the Moco. The allocation of the push button inputs is device-internally 1 to 1 and not visible over LON!

Local modes	Binary inputs are used only as local inputs, the "nvoSetting" output is inactive! The nvoSwitch outputs announce only the current status of the connected push buttons (push button pressed 100,0 1, push button not pressed 0,0 0)
EU_MODE	Dead man operation in the slats tilting time, after the slats tilting time toggle mode.
US_MODE	Short depressing of the push button (until 0,4 sec.) = movement command, longer depressing the push button (>0,4 sec.) = like EU mode.
TILT_MODE	Only the slats tilting time between the min. and max. slat angle is possible. The slats tilting time can be adjusted in the Actuator object under UCPTRunTimeTilt!
SCREEN_MODE	The motor output changes (toggled) with each pressing of the push button between stop and moving.
WINDOW_PRESS	The motor moves in the so-called dead man mode, they moves only if the push button is pushed.
FIX_MAINTAIN	Dead man operation, the push button is thus pressed only so long, for 2 sec., after 2 sec. moving operation, stop with next pressing of the push button.

If the binary inputs in one of the 6 local modes are used and additionally a LON integration follows, the controlling of the motor object over the Override input should take place nviSbIndOvr (priorities management)!

6.4.4 Release/blocking of the local push button inputs

This is done by configuring the priority level of the local input in the Sunblind Controller object. See 6.7.17

6.4.5 Radio or infrared remote control

It is possible, with the optional RTS radio module Ref. No. 1860105 to upgrade any animeo 4 motor Moco. For remote control there is a wall (Centralis RTS) and different hand transmitters (Telis 1/Telis 4/Telis 4 Modulis) for selection.

After the module is plugged in and learned in according to the enclosed instructions, it is possible to use up to 5 radio channels parallel to binary inputs!

With the optional infrared module, Ref. No. 1860098, and the infrared receiver IR3, Ref. No. 9154205, it is possible to upgrade each animeo 4 motor Moco also at any time. For remote control, an 8 channel hand transmitter IRT 803, Ref No. 1870010, is available. After the module is plugged in and learned in according to the enclosed instructions, it is possible to use up to 8 radio channels parallel to binary inputs!

If the binary inputs are used in one of the LON modes, then the RTS radio module works with the last used local modes of the respective channel e.g. EU mode.

In order to change over from this mode and work again in the LON modes afterwards, it is necessary to describe the parameter **UCPTkeyMode** twice successively!

1. Change-over from e.g. KEY_DEFAULT to TILT_MODE
2. Back from e.g. TILT_MODE to KEY_DEFAULT

This guarantees that the **UCPTkeyMode** was really set to KEY_DEFAULT.

The remote control comes into effect on the IB+ Moco level and can not be "bound" as a LON output variable!

6.5 Scene Panel Object #3250

1 x per double push button input

The Scene panel object serves in evaluating and configuring both assigned binary inputs as scene push button inputs. The state of these two inputs is made available in the form of **SNVT_Scene** output variables for further processing by LON objects.

CAUTION:

The Sunblind Scene panel object #3250, Switch object #3200 and Occupancy object #1060 use the same local binary inputs. This means that a closed contact (1) at a binary input in each of the 3 objects initiates a reaction. Through the "binding" it is determined which signals are to be used for further processing in the network.

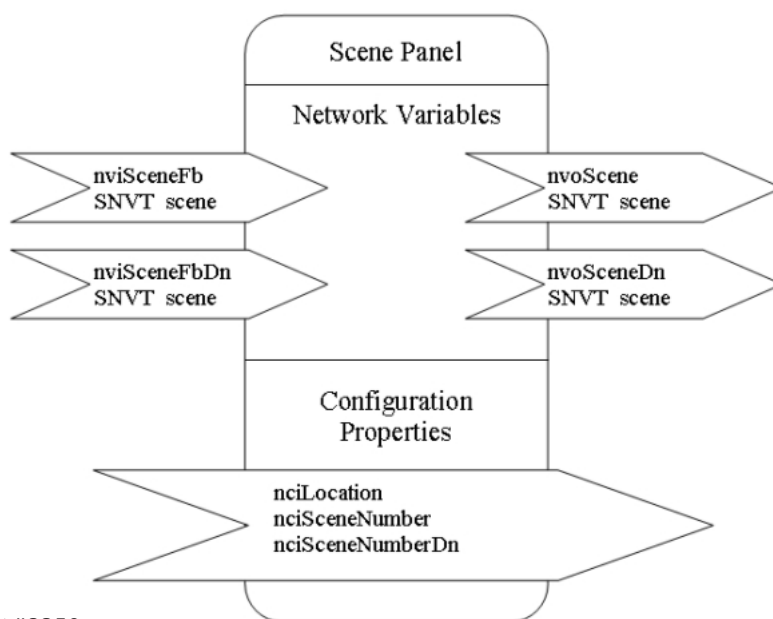


Fig. 6.5 Scene object #3250

6.5.1 Detailed description of Scene Panel Object #3250

There are no additional SOMFY functions implemented to the function range described in the LonMark Standard Scene object:

LonMaker Browser view of the Somfy Scene Panel object

Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	SCPTlocation		N	MoCo inputs as Scene Panel
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nviSceneFbDn0		N	SC_NUL 0
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nviSceneFbUp0		N	SC_NUL 0
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nvoSceneDn0		N	SC_NUL 0
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nvoSceneDn0	UCPTsceneNmb	N	1
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nvoSceneUp0		N	SC_NUL 0
Subsystem 1	animeo LON 4AC	Scene Panel 0 (0)	nvoSceneUp0	SCPTsceneNmb	N	1

Two **SNVT_Scene** outputs are implemented per Scene object. Each of these outputs supports the commands:

Re-call = Re-call of a scene

Re-call of a scene is the standard function. The scene number e.g. 4 is defined with the parameter (UCPTsceneNmbr).

In line with the LonMark standard, all scene outputs are pre-configured with Scene 1!

In combination with the LON Sunblind Controller object the scenes 1 to 6 can be learned-in freely in the animeo LON Moco. Scenes with higher scene numbers are reserved for other functions (Scene Controllers) and shall only be re-called and not overwritten.

CAUTION

The changing and overwriting of the higher zones (7 to 16) changes also the behaviour of the fix linked functions like e.g. wind alarm (scene 7)

6.6 Occupancy object #1060

1 x per double push button input

The "Occupancy Object" serves in evaluating and configuring both assigned binary inputs as occupancy or movement detector inputs. The state of these two inputs is made available in the form of SNVT_occupancy output variables for further processing by LON objects.

CAUTION:

The Sunblind Occupancy object #1060, Switch object #3200 and Scene panel object #3250 use the same local binary inputs. This means that a closed contact (1) at a binary input in each of the 3 objects initiates a reaction. Through the "binding" it is determined which signals are to be used for further processing in the network.

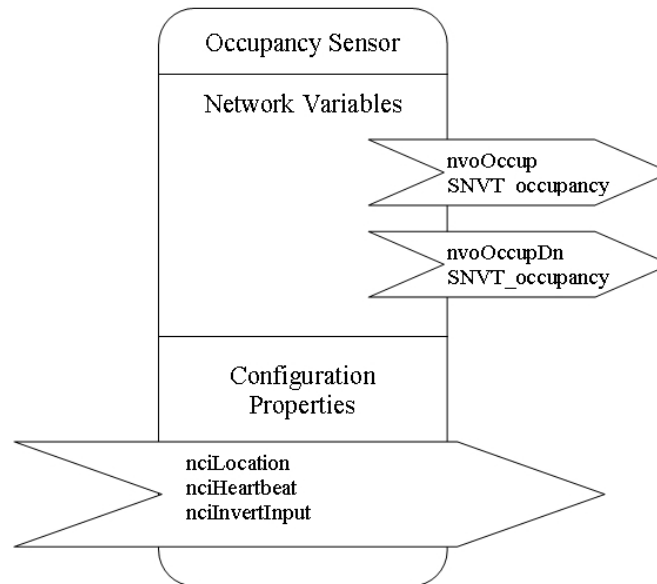


Fig. 6.6 Occupancy object #1060

6.6.1 Detailed description of Occupancy object #1060

This SOMFY function is implemented depending on the function range described in the LonMark standard Occupancy object:

6.6.2 Parameters to invert the potentially free sensor input

LonMaker Browser view of the Somfy Occupancy object

Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	animeo LON 4AC	Occupancy 0 (0)		SCPTlocation	N	MoCo inputs as Occup. Sensor
Subsystem 1	animeo LON 4AC	Occupancy 0 (0)		SCPTmaxSendTime	N	0,0
Subsystem 1	animeo LON 4AC	Occupancy 0 (0)		UCPTinvertInput	N	BOOL_FALSE
Subsystem 1	animeo LON 4AC	Occupancy 0 (0)	nvoOccupDn0		N	OC_HUL
Subsystem 1	animeo LON 4AC	Occupancy 0 (0)	nvoOccupUp0		N	OC_HUL

Two SNVT_occupancy outputs are implemented per occupancy object.

6.6.2 Parameters to invert the potentially free sensor input

Due to the fact that there occupancy sensors with varying circuit logic on the market which can be connected to our local binary inputs, it is necessary to adapt these with the following parameter:

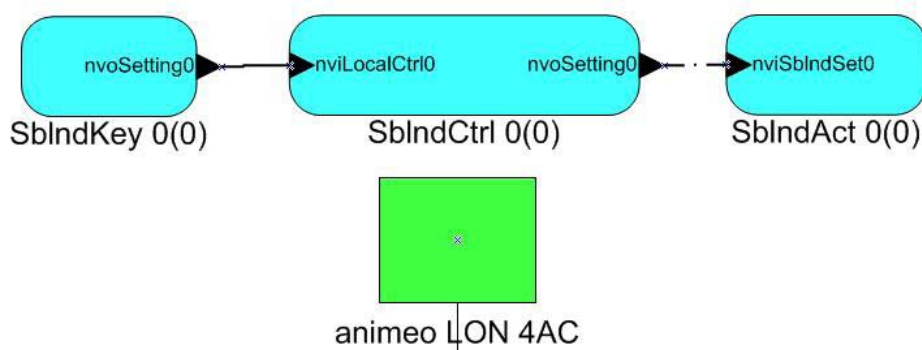
UCPTinvertInput

N.O = normally open contact = Bool_false (default)
N.C = normally closed contact = Bool_true

6.7 Sunblind Controller Object #6111

4 x per Moco

The "Sunblind Controller Object" serves in evaluating and configurating different inputs like e.g. brightness values, temperature, wind speed and binary inputs. From these inputs and according to the function of the configuration, the movement commands are generated. The "Sunblind Controller Object" in general is bound e. g. between "Switch Object" and "Sunblind Actuator Object".



Sunblind Controller Object #6111 see page 2 "Functional Profile"

6.7.1 Detailed description of Sunblind Controller Object #6111

These SOMFY functions are implemented depending on the function range described in the LonMark Standard Sunblind Controller Object:

- 6.7.2 Wind speed alarm function
- 6.7.3 Wind direction alarm function
- 6.7.4 Sun automatic function
- 6.7.5 Suntracking function
- 6.7.6 Rain alarm function
- 6.7.7 Frost function
- 6.7.8 Ice function
- 6.7.9 Ventilation function (natural ventilation)
- 6.7.10 Ventilation function with switching command
- 6.7.11 Room brightness blinds control
- 6.7.12 Scenes function
- 6.7.13 Window contact function
- 6.7.14 Auto mode input
- 6.7.15 Terminal load input
- 6.7.16 Occupancy function
- 6.7.17 Priority mangement of the inputs

LonMaker Browser view of the Somfy Sunblind Controller object

Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	Device 1	Controller		SCPTbypassTime	N	1
Subsystem 1	Device 1	Controller		SCPTdefaultSetting	N	SET_UP 127 655
Subsystem 1	Device 1	Controller		SCPTlocation	N	Sunblind Actuator
Subsystem 1	Device 1	Controller		UCPTdefaultPos	N	SET_NULL 127 655
Subsystem 1	Device 1	Controller		UCPTnvPriority00	N	BF_SET_OVERRIDE
Subsystem 1	Device 1	Controller		UCPTnvPriority01	N	BF_OVERRIDE
Subsystem 1	Device 1	Controller		UCPTnvPriority02	N	BF_WINDSPEED
Subsystem 1	Device 1	Controller		UCPTnvPriority03	N	BF_WIND_DIR
Subsystem 1	Device 1	Controller		UCPTnvPriority04	N	BF_FROST
Subsystem 1	Device 1	Controller		UCPTnvPriority05	N	BF_OUTTEMP
Subsystem 1	Device 1	Controller		UCPTnvPriority06	N	BF_RAIN
Subsystem 1	Device 1	Controller		UCPTnvPriority07	N	BF_GLOBAL
Subsystem 1	Device 1	Controller		UCPTnvPriority08	N	BF_GROUP
Subsystem 1	Device 1	Controller		UCPTnvPriority09	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority10	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority11	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority12	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority13	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority14	N	BF_NULL
Subsystem 1	Device 1	Controller		UCPTnvPriority15	N	BF_NULL
Subsystem 1	Device 1	Controller	nviAutoMode0		N	100,0 1
Subsystem 1	Device 1	Controller	nviDawn0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviDawn0	UCPTdawnPos11	N	SET_STATE 20 0
Subsystem 1	Device 1	Controller	nviDusk0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviDusk0	UCPTduskPos12	N	SET_STATE 30 0
Subsystem 1	Device 1	Controller	nviFrost0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviFrost0	SCPTclOffDelay	N	1800,0
Subsystem 1	Device 1	Controller	nviFrost0	SCPTclOnDelay	N	600,0
Subsystem 1	Device 1	Controller	nviFrost0	SCPTmaxRcvTime	N	0,0
Subsystem 1	Device 1	Controller	nviFrost0	UCPTfrostPos9	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviGlare0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviGlare0	UCPTglarePos13	N	SET_STATE 40 0
Subsystem 1	Device 1	Controller	nviGlobalCtrl0		N	SET_NULL 0,0 0,00
Subsystem 1	Device 1	Controller	nviGroupCtrl0		N	SET_NULL 0,0 0,00
Subsystem 1	Device 1	Controller	nvilceReset0		N	0,0 -1
Subsystem 1	Device 1	Controller	nvilceReset0	UCPTiceRH	N	50,000
Subsystem 1	Device 1	Controller	nvilceReset0	UCPTtrainHistory	N	0
Subsystem 1	Device 1	Controller	nvillumLev0		N	65535
Subsystem 1	Device 1	Controller	nvillumLev0	SCPTluxSetpoint	N	0
Subsystem 1	Device 1	Controller	nvillumLev0	SCPTstepValue	N	10,0
Subsystem 1	Device 1	Controller	nvindoorRH0		N	163,835
Subsystem 1	Device 1	Controller	nvindoorRH0	SCPTonOffHysteres	N	0,0
Subsystem 1	Device 1	Controller	nvindoorRH0	SCPTstepValue	N	10,0
Subsystem 1	Device 1	Controller	nvindoorRH0	UCPTthresholdRH	N	10

Subsystem 1	Device 1	Controller	nvinTemp0		N	327,67
Subsystem 1	Device 1	Controller	nvinTemp0	SCPTmaxRemoteTer	N	20,00
Subsystem 1	Device 1	Controller	nvinTemp0	SCPTonOffHysteres	N	0,0
Subsystem 1	Device 1	Controller	nvinTemp0	SCPTstepValue	N	10,0
Subsystem 1	Device 1	Controller	nvinTempHigh0		N	0,0 -1
Subsystem 1	Device 1	Controller	nvinTempHigh0	SCPTstepValue	N	10,0
Subsystem 1	Device 1	Controller	nviLocalCtrl0		N	SET_NUL 0,0 0,00
Subsystem 1	Device 1	Controller	nviMaintnce0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviMaintnce0	UCPTmaintPos15	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviOccManCmd0		N	OC_NUL
Subsystem 1	Device 1	Controller	nviOccSensor0		N	OC_NUL
Subsystem 1	Device 1	Controller	nviOutdoorRH0		N	163,835
Subsystem 1	Device 1	Controller	nviOutdoorRH0	UCPTiceRH	N	50,000
Subsystem 1	Device 1	Controller	nviOutTemp0		N	327,67
Subsystem 1	Device 1	Controller	nviOutTemp0	UCPTfrostTemp	N	0
Subsystem 1	Device 1	Controller	nviOverride0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviOverride0	UCPToverrdPos14	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviRain0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviRain0	SCPTclOffDelay	N	1800,0
Subsystem 1	Device 1	Controller	nviRain0	SCPTclOnDelay	N	1,0
Subsystem 1	Device 1	Controller	nviRain0	SCPTmaxRcvTime	N	0,0
Subsystem 1	Device 1	Controller	nviRain0	UCPTtrainPos8	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0		N	SC_RECALL 2
Subsystem 1	Device 1	Controller	nviScene0	UCPTdawnPos11	N	SET_STATE 20 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTduskPos12	N	SET_STATE 30 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTfrostPos9	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0	UCPTglarePos13	N	SET_STATE 40 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTlocalIP1	N	SET_STATE 0 90
Subsystem 1	Device 1	Controller	nviScene0	UCPTmaintPos15	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0	UCPToverrdPos14	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0	UCPTtrainPos8	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0	UCPTscenePos2	N	SET_STATE 10 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTscenePos3	N	SET_STATE 20 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTscenePos4	N	SET_STATE 30 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTscenePos5	N	SET_STATE 40 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTscenePos6	N	SET_STATE 50 0
Subsystem 1	Device 1	Controller	nviScene0	UCPTsunOffPos16	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviScene0	UCPTsunPos10	N	SET_STATE 50 -90
Subsystem 1	Device 1	Controller	nviScene0	UCPTwindPos7	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviSetMaint0		N	SET_NUL 0,0 0,00
Subsystem 1	Device 1	Controller	nviSetOverrd0		N	SET_NUL 0,0 0,00
Subsystem 1	Device 1	Controller	nviSunAzimuth0		N	655,34
Subsystem 1	Device 1	Controller	nviSunElevatn0		N	655,34
Subsystem 1	Device 1	Controller	nviSunGlobRad0		N	6553,5

Subsystem 1	Device 1	Controller	nviSunGlobRad0	UCPTsunOffThreshc	N	10000
Subsystem 1	Device 1	Controller	nviSunGlobRad0	UCPTsunOnThresho	N	20000
Subsystem 1	Device 1	Controller	nviSunLux0		N	65535
Subsystem 1	Device 1	Controller	nviSunLux0	SCPTclOffDelay	N	1800,0
Subsystem 1	Device 1	Controller	nviSunLux0	SCPTclOnDelay	N	600,0
Subsystem 1	Device 1	Controller	nviSunLux0	SCPTorientation	N	180,00
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTminSlatAngle	N	-90
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTminSlatStep	N	0
Subsystem 1	Device 1	Controller	nviSunLux0	UCPToffAngleUse	N	BOOL_FALSE
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTscreenLength	N	0,0
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunDepth	N	0,0
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunOffPos16	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunOffThreshc	N	10000
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunOnThresho	N	20000
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunPos10	N	SET_STATE 50 -90
Subsystem 1	Device 1	Controller	nviSunLux0	UCPTsunTrackUpdat	N	0
Subsystem 1	Device 1	Controller	nviTermLoad0		N	0,000
Subsystem 1	Device 1	Controller	nviWindDir0		N	655,34
Subsystem 1	Device 1	Controller	nviWindDir0	SCPTclOffDelay	N	900,0
Subsystem 1	Device 1	Controller	nviWindDir0	SCPTclOnDelay	N	2,0
Subsystem 1	Device 1	Controller	nviWindDir0	SCPTorientation	N	180,00
Subsystem 1	Device 1	Controller	nviWindDir0	UCPTwindThreshold	N	6,9
Subsystem 1	Device 1	Controller	nviWindowCont0		N	0,0 -1
Subsystem 1	Device 1	Controller	nviWindowCont0	SCPTdefaultSetting	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviWindowCont0	SCPTmaxRcvTime	N	0,0
Subsystem 1	Device 1	Controller	nviWindSpeed0		N	6553,5
Subsystem 1	Device 1	Controller	nviWindSpeed0	SCPTclOffDelay	N	900,0
Subsystem 1	Device 1	Controller	nviWindSpeed0	SCPTclOnDelay	N	2,0
Subsystem 1	Device 1	Controller	nviWindSpeed0	SCPTmaxRcvTime	N	0,0
Subsystem 1	Device 1	Controller	nviWindSpeed0	UCPTwindPos7	N	SET_UP 127 655
Subsystem 1	Device 1	Controller	nviWindSpeed0	UCPTwindThreshold	N	6,9
Subsystem 1	Device 1	Controller	nvoSetting0		N	SET_STATE 10,0 0,00
Subsystem 1	Device 1	Controller	nvoSetting0	SCPTmaxSendTime	N	0,0
Subsystem 1	Device 1	Controller	nvoStatus0		N	SET_STATE 10 0 SBCS_SCENE SBE_NO_ERROR
Subsystem 1	Device 1	Controller	nvoStatus0	SCPTmaxSendTime	N	0,0

6.7.2 Wind speed alarm function

This central safety function for the blinds is to prevent damages caused by high wind speeds. In the case of emergency, the blinds are moved to the safety position and blocked!

By an activated monitoring of the wind speed signal (**SCPTmaxRcvTime**) greater than 0,0 seconds, the blinds are also blocked in the safety position when no wind speed signal is received within the set (**SCPTmaxRcvTime**).

Parameters and their default values:

nviWindSpeed	current in m/sec.	Wind speed input
SCPTclOffDelay	900,0 seconds	Delay time wind alarm deactivation
SCPTclOnDelay	2,0 seconds	Delay time wind alarm activation
SCPTmaxRcvTime	0,0 seconds (deactivated)	Sensor monitoring
UCPTwindPos7	SET_UP (up limit)	Wind safety position
UCPTwindThreshold	6.9 m/sec.	Wind speed threshold value 1

A wind alarm is initiated when the following conditions are fulfilled:

If **nviWindSpeed** is for longer than 2,0 seconds (**SCPTclOnDelay**) higher than 6.9 m/sec. (**UCPTwindTreshold**). After the wind alarm has been initiated, the blind is moved with SET_UP to the up limit = wind alarm safety position (**UCPTwindPos7**). The blinds are blocked during the entire wind alarm!

A wind alarm is ended when the following conditions are fulfilled:

If **nviWindSpeed** is for longer than 900 seconds (**SCPTclOffDelay**) lower than 6.9 m/sec. (**UCPTwindTreshold**). After ending, the wind alarm moves the blinds to the default position (**UCPTdefaultPos**) if no other signal has been given or an old one is active.

6.7.3 Wind direction alarm function

This direction-oriented safety function for exterior blinds is to prevent damages by high wind speeds. Different to the wind speed alarm function described under 6.7.2, in addition, the wind direction is also evaluated. This has the advantage of being able to react faster and only the blinds which are affected are blocked in the safety position.

During activated monitoring of the wind direction signal (**SCPTmaxRcvTime**) greater than 0,0 seconds, the blinds are also blocked in the safety position if no signal has been received within the set (**SCPTmaxRcvTime**).

Parameters and their default values:

nviWindSpeed	current in m/sec.	Wind speed input
SCPTclOffDelay	900,0 seconds	Delay time deactivation wind alarm
SCPTclOnDelay	2,0 seconds	Delay time activation wind alarm
SCPTmaxRcvTime	0,0 seconds	Monitoring wind direction signal
UCPTwindPos7	SET_UP (upper limit)	Wind alarm safety position
UCPTwindThreshold	6,0 m/sec.	Wind speed threshold value 2
nviWindDir	current in degrees	Wind direction input
SCPTorientation	180,0 degrees	Main wind direction of the blinds

A wind alarm is initiated when the following conditions are fulfilled:

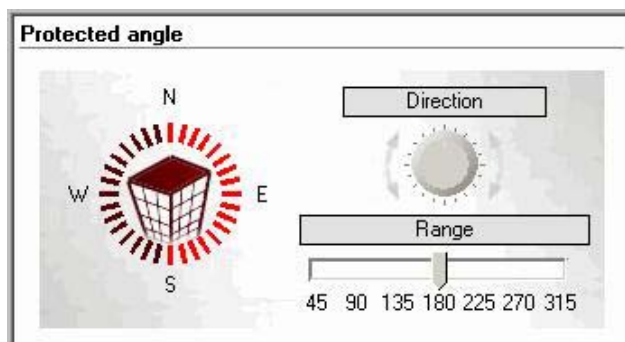
The value of **nviWindSpeed** is longer than 2,0 seconds (**SCPTclOnDelay**) greater than 6,9 m/sec. (**UCPTwindTreshold**) **and** the value **nviWindDir** are in the range of +/-90 degrees related to 180,0 degrees (**SCPTorientation**).

After initiation of the wind alarm, the blinds are moved with the SET_UP to the upper limit = wind alarm safety position (**UCPTwindPos7**). **The blinds are blocked during the entire wind alarm!**

A wind alarm is ended if the following conditions are fulfilled:

The value of `nviWindSpeed` is longer than 900,0 seconds (`SCPTclOffDelay`) lower than the wind velocity threshold value 1 with 6,0 m/sec. (`UCPTwindTreshold`) or the value `nviWindDir` is no longer within the range of +-90 degrees related to 180,0 degrees (`SCPTorientation`), and the value `nviWindSpeed` of the wind speed is not higher than the wind speed threshold value 2 with 6,9 m/sec. (`UCPTwindTreshold`).

After ending the wind direction alarm, the blinds move to the default position (`UCPTdefaultPos`) if no other signal has been given or an old one is active.



e.g.
 Direction (`SCPTorientation`) = 90 ° (East)
 Range (fixed) = 180 ° (from 0 ° to 180 °)

6.7.4 Sun automatic function

With this function, the sun protection is moved to different positions depending on the brightness measurement and configuration of the parameters below. The main advantage here is the protecting against glare and solar heating. This function is active only in the automatic mode with deactivated position of the sun (`UCPTsunTrackUpdate = 0`).

Parameters and their default values:

<code>nviSunLux</code>	current in Lux	Brightness measured value input
<code>SCPTclOffDelay</code>	1800,0 sec.	Delay time of the deactivation
<code>SCPTclOnDelay</code>	600,0 sec.	Delay time of the activation
<code>UCPTsunPosition10</code>	SET_STATE 50,0 -90,00	Sun automatic position
<code>UCPTsunOffPosition16</code>	SET_UP	Position after sun automatic
<code>UCPToffAngleUse</code>	BOOL_FALSE	Slats horizontal after 10% <code>SCPTclOffDelay</code> . Active with <code>BOOL_TRUE</code> !
<code>UCPTsunOnThreshold</code>	20000 Lux	Threshold value activation sun automatic
<code>UCPTsunOffThreshold</code>	10000 Lux	Threshold value deactivation sun automatic

The sun automatic function is active when the following conditions are fulfilled:

The value of `nviSunLux` is longer than 600,0 seconds (`SCPTclOnDelay`) higher than 20000 Lux (`UCPTsunOnThreshold`). After activation of the sun automatic function, the blinds with SET_STATE 50 - 90 (`UCPTsunPos10`) move to their sun automatic position.

The sun automatic function is again deactivated when the following conditions are fulfilled:

The value of `nviSunLux` is longer than 1800,0 seconds (`SCPTclOffDelay`) lower than 10000 lux (`UCPTsunOffThreshold`). After deactivation of the sun automatic function, the blinds move with SET_UP (`UCPTsunOffPos16`) to their position after the sun automatic.

The additional parameter `UCPToffAngleUse` permits an automatic tilting of the blinds slats after 10 % of the delay time (`SCPTclOffDelay`) before the deactivation of the sun automatic.

This is particularly interesting in changing weather conditions as this function prevents some blinds moves and thus increases the life expectancy of the end-product!

Example without `UCPToffAngleUse = BOOL_FALSE`:

10 minutes with 43000 lux then
4 minutes with 8000 lux then
7 minutes with 22000 lux

Result = 2 x movement to sun automatic position + 1 x movement to the upper limit

Example with `UCPToffAngleUse = BOOL_TRUE`:

10 minutes with 43000 lux then
4 minutes with 8000 lux then
7 minutes with 22000 lux

Result = 1 x movement to sun automatic position + 1 x slats tilt in horizontal position + 1 x slats tilt back in sun automatic position.

2 complete blind moves are saved as only 2 times the slats are tilted!

6.7.5 Suntracking

With this function, the sun protection according to the building orientation to the position of the sun and brightness measurement, moves to different positions in line with the configurations of the parameters below. The main advantage here lies in a fully automatic protection against solar heating and glare. This function is active only in the automatic mode.

Parameters and their default values:

<code>nviTimeSet</code>	Date/time	Date and time input (Node object)
<code>UCPTearthPos</code>	Rottenburg/Germany	Building position and altitude (Node object)
<code>nviSunLux</code>	current in lux	Brightness value input
<code>SCPTclOffDelay</code>	1800,0 sec.	Delay time of the deactivation
<code>SCPTclOnDelay</code>	600,0 sec.	Delay time of the activation
<code>SCPTorientation</code>	180.0 degrees	Main sun direction of the blinds
<code>UCPTsunOffPosition16</code>	SET_UP	Position after suntracking
<code>UCPTminSlatAngle</code>	- 90 degrees	Minimum slats angle
<code>UCPTminSlatStep</code>	0 degrees	Minimum slats tilting step
<code>UCPTsunTrackUpdate</code>	0 min. (deactivated)	Repeating rate position of the sun computation
<code>UCPToffAngleUse</code>	BOOL_FALSE	Slats horizontal after 10 % of (<code>SCPTclOffDelay</code>). Active with <code>BOOL_TRUE</code> !
<code>UCPTscreenLength</code>	0,0 mm (deactivated)	Blind length (Only with screens and roller shutters!)
<code>UCPTsunDepth</code>	0,0 mm	Maximum penetration depth of the sun rays in the room (Only with screens and roller shutters!)
<code>UCPTsunOnThreshold</code>	20000 lux	Threshold value activation position of the suntracking
<code>UCPTsunOffThreshold</code>	10000 lux	Threshold value deactivation position of suntracking
<code>nviSunAzimuth</code>	current value	External azimuth angle of the sun 0 – 359,9 degrees
<code>nviSunElevation</code>	current value	External elevation angle of the sun 0 ~ 70 degrees

The suntracking for venetian blinds is active when the following conditions are fulfilled:

The date and the time (**nviTimeSet**) in the Node object must be current

AND

The building position (**UCPTearthPos**), must be registered accurately to the degree in the Node object

AND

The repeating rate of the internal position of the sun computation (**UCPTsunTrackUpdate**) is equivalent/greater than 1 min. (activated)

OR

The date and the time (**nviTimeSet**) in the Node object must be current

AND

The building position (**UCPTearthPos**), must be registered accurately to the degree in the Node object

AND

Current external values over (**nviSunAzimuth**) and (**nviSunElavation**) in degrees

Note: The normal sun automatic is deactivated by the activation of the suntracking!

To generate a movement command with an activated suntracking the following criteria must be fulfilled:

The values for this example correspond mainly to the default values!

The value of (**nviSunLux**) is longer than 600,0 seconds (**SCPTclOnDelay**) higher than 20000 lux (**UCPTsunOnThreshold**)

AND

The azimuth angle of the sun e.g. 110 degrees (internally computed from date + time + building position or as an external signal (**nviSunAzimuth**) lies within the range of +/-90 degrees of the blinds/façade orientation (**SCPTorientation**) with 180,0 degrees

AND

The elevation angle of the sun e.g. 35 degrees (internally computed from date + time + building position or as external signal (**nviSunElevation**)) is higher than the minimum slat angle (**UCPTminSlatAngle**)

The elevation angle 0,0 degrees corresponds to -90 degree slat position!

The elevation angle 35.0 degrees corresponds to -55 degree slat position!

AND

The difference of the elevation angle of the sun between the first and the second movement command is greater than the minimum slat tilting step (**UCPTminSlatStep**).

With the first movement command this parameter (**UCPTminSlatStep**) does not play a role.

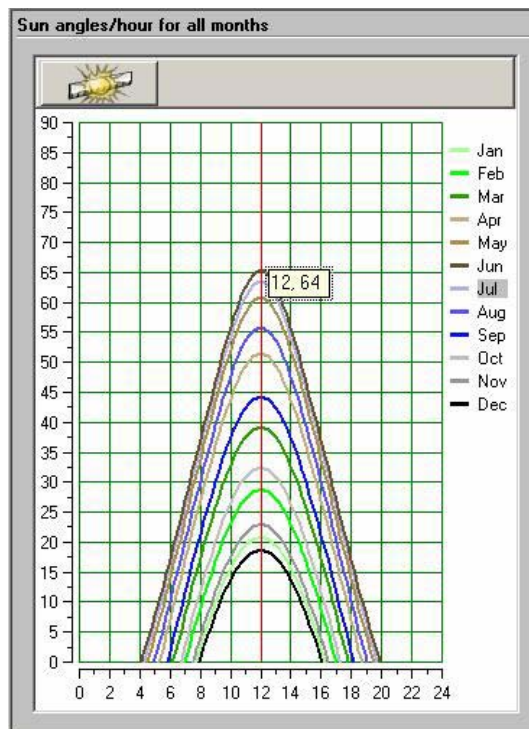
With the fulfilment of all criteria in this example, the blinds will move to the down end limit and the slats position will take on - 55 degrees.

The number of movement commands per day in one year are seen as varying and are thus here it refers to a dynamic suntracking. This correlates to the elevation angle difference of the sun over the year.

E.g. Germany:

Minimum elevation angle at 12:00 noon approx. + 20 degrees

Maximum elevation angle at 12:00 noon approx. + 70 degrees

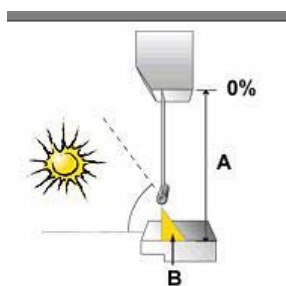


e.g. 12,64 = 12:00 o'clock noon, 64 degree sun elevation angle

Note: The minimum slats tilting step (**UCPTminSlatStep**) depends mainly on the blinds used and their mechanical characteristics. We recommend as a minimum slats tilting step (**UCPTminSlatStep**) 8 degrees. The smaller the tilting step, the more frequently the blinds are moved, which has a direct effect on its life expectancy!

To be able to use the suntracking for screens and roller shutters, the blinds length (A) in millimetres (**UCPTscreenLength**) and the depth of the sunrays (B) in the room in millimeters (**UCPTsunDepth**) must be entered.

Note: The input of the blinds length (**UCPTscreenLength**) deactivates (**UCPTminSlatAngle**) and (**UCPTminSlatStep**)!



The suntracking is again deactivated when the following condition is fulfilled:

The value of **nviSunLux** is longer than 1800,0 seconds (**SCPTclOffDelay**) smaller than 10000 lux (**UCPTsunOffThreshold**)

OR

The azimuth angle range of the blinds to the sun (internally computed from date + time + building position or as external signal (**nviSunAzimuth**) e.g. has gone through 90 to 270 degrees (**SCPTorientation**).

After deactivation of the suntracking, the blinds move with SET_UP (UCPTsunOffPos16) to its position after suntracking.

The additional parameter (UCPToffAngleUse) permits an automatic tilting of the blinds slats after 10 % delay time (SCPTclOffDelay) for the deactivation of suntracking.

This is interesting in changing weather conditions since with this function some blinds moves are prevented and the life expectancy of the end-product is thus increased! See also 6.7.4 at the end.

Note: When the internal suntracking is used, the variables (nviSunAzimuth) and (nviSunElevation) show the internally computed current value in degrees.

6.7.6 Rain alarm function

This safety function protects the exterior blinds or the window behind them from rain.

With activated monitoring of the rain signal (SCPTmaxRcvTime) greater than 0,0 seconds, the blinds are also blocked in the safety position in case no measurement value is received within the set (SCPTmaxRcvTime)!

Parameters and their default values:

nviRain	current value	Rain signal input SNVT_Switch
SCPTmaxRcvTime	0,0 seconds	Monitoring rain sensor signal
SCPTclOffDelay	1800,0 seconds	Delay time deactivation rain function
SCPTclOnDelay	1,0 seconds	Delay time activation rain function
UCPTrainPosition8	SET_UP (up limit)	Rain alarm position

When a value at the rain signal input (nviRain) is greater than 0,0 1 for longer than 1,0 seconds (SCPTclOnDelay), all blinds move to the rain alarm position (UCPTrainPosition8) and are blocked there as long as the value at the rain signal input (nviRain) is smaller than 1,01

AND

the delay time (SCPTclOffDelay) of 1800,0 seconds has elapsed.

6.7.7 Frost function

This safety function protects the exterior blinds from frost, i.e. dry cold. With activated monitoring of the frost signal (SCPTmaxRcvTime) greater than 0,0 seconds, the blinds are also blocked in the safety position in case no measurement value is received within the set (SCPTmaxRcvTime)!

Parameters and their default values:

nviFrost	current value	Frost signal input SNVT_switch
nviOutdoorTemp	current value	Outside temperature input SNVT_temp_p
UCPTfrostTemp	0,00 ° C	Upper frost temperature threshold value
SCPTmaxRcvTime	0,0 seconds	Monitoring frost sensor signal
SCPTclOffDelay	1800,0 seconds	Delay time deactivation frost function
SCPTclOnDelay	600,0 seconds	Delay time activation frost function
UCPTfrostPosition9	SET_UP (up limit)	Frost alarm position

When a value at the frost signal input (nviFrost) is greater than x,x 0 for longer than 600,0 seconds (SCPTclOnDelay), all blinds move to the frost alarm position (UCPTfrostPosition9).

Here they are blocked as long as the value at the frost signal input (nviFrost) is smaller than x, x 1

AND

the delay time (SCPTclOffDelay) 1800,0 seconds has elapsed

OR

when the outside temperature input (nviOutdoorTemp) is lower than 0,00 ° C (UCPTfrostTemp) for longer than 600,0 seconds (SCPTclOnDelay), all blinds move to the frost alarm position (UCPTfrostPosition9).

Here they are blocked as long as the value at outside temperature input (nviOutdoorTemp) is higher than 0,00 ° C (UCPTfrostTemp)

AND

the delay time (SCPTclOffDelay) 1800,0 seconds has elapsed.

6.7.8 Ice function

This safety function protects the exterior blinds against damage through ice like e.g. freezing of the mechanics. Since the ice function is closely connected to the frost function, several of the described parameters below are used for both functions. With activated monitoring of the ice signal (**SCPTmaxRcvTime**) greater than 0,0 seconds, the blinds are also blocked in the safety position in case no measurement value is received within the set (**SCPTmaxRcvTime**)!

Parameters and their default values:

nviFrost	current value	frost signal input SNVT_switch
nviOutdoorTemp	current value	outside temperature input SNVT_temp_p
nvilceReset	0,0 0	release ice alarm SNVT_switch
UCPTrainHistory	0 = deactivated	rain history in hours
UCPTiceRH	50%	relative humidity
UCPTfrostTemp	0,00 °C	upper frost temperature threshold value
SCPTmaxRcvTime	0,0 seconds	monitoring frost sensor signal
SCPTclOffDelay	1800,0 seconds	delay time deactivation frost function
SCPTclOnDelay	600,0 seconds	delay time activation frost function
UCPTfrostPosition9	SET_UP (up limit)	frost alarm position

When a value at the frost input (**nviFrost**) is greater than x, x 0 for longer than 600,0 seconds (**SCPTclOnDelay**) and it has rained (**nviRain**) within the time (**UCPTrainHistory**), or e.g. the outside air humidity (**nviOutdoorRH**) is higher than the value e.g. 50 % as in (**UCPTiceRH**) parametered, all blinds move to the ice/frost alarm position (**UCPTfrostPosition9**). Here they are blocked until the value at the frost signal input (**nviFrost**) is smaller than x, x 1

AND

the delay time (**SCPTclOffDelay**) of 1800,0 seconds has elapsed or until a manual reset by (**nvilceReset**) = 100,0 1 has been done.

OR

when a value at the outside temperature input (**nviOutdoorTemp**) is lower than 0,00 °C (**UCPTfrostTemp**) for longer than 600,0 seconds (**SCPTclOnDelay**) and it has rained (**nviRain**) within the time (**UCPTrainHistory**) or the outside air humidity (**nviOutdoorRH**) is higher than the value e.g. 50 % as in (**UCPTiceRH**) parametered, the blinds move to the ice/frost alarm position (**UCPTfrostPosition9**). Here they are blocked as long as the value at the outside temperature input (**nviOutdoorTemp**) is higher than 0,00 °C (**UCPTfrostTemp**)

AND

the delay time (**SCPTclOffDelay**) of 1800,0 seconds has elapsed or a manual reset over (**nvilceReset**) = 100,0 1 has been done.

6.7.9 Ventilation function (natural ventilation)

With this function it is possible to control windows depending on indoor temperature, outside temperature, relative indoor humidity and relative external humidity.

The following combinations are possible:

- Only indoor temperature controlled
- Indoor and outside temperature-dependent controlled
- Only indoor humidity controlled
- Indoor and external humidity-dependent controlled
- Indoor and outside temperature-dependent and additionally indoor and external humidity-dependent controlled

All other combinations are also possible, but should however, generally be tested before application.

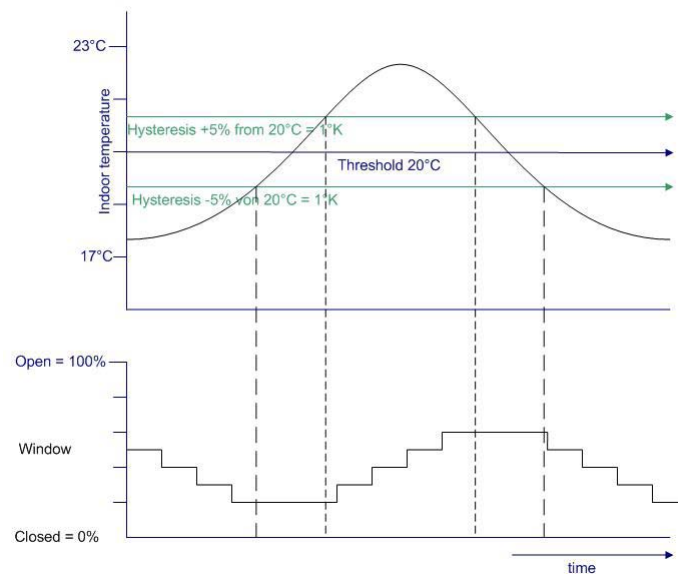
Parameters and their default values:

nviIndoorTemp	current value in °C	Indoor temperature input SNVT_temp_p
nviOutdoorTemp	current value in °C	Outside temperature input SNVT_temp_p
nviIndoorRH	current value in %	Relative indoor humidity SNVT__lev_percent
nviOutdoorRH	current value in %	Relative external humidity SNVT__lev_percent
SCPTmaxRemoteTempSetpoint	20,0 °C	Threshold value indoor temperature
SCPTonOffHysteresis	0,0 (deactivated) in %	hysteresis window function On/Off
SCPTstepValue	10,0 in %	Window movement in %
UCPTthresholdRH	40 %	Threshold value indoor humidity

Only indoor-temperature controlled (easiest control)

When the indoor temperature value ($nviIndoorTemp$) is over the threshold value e.g. $20,0\text{ }^{\circ}\text{C}$ ($SCPTmaxRemoteTempSetpoint$) the windows concerned drive 10 % up ($SCPTstepValue$). This up movement in steps of 10% occurs so long as the window is either completely opened = 100 % or the demanded temperature of e.g. $20,0\text{ }^{\circ}\text{C}$ ($SCPTmaxRemoteTempSetpoint$) is reached.

Note: The delay times between the steps depend on the transmission rate of the temperature sensor!



Example see diagram

When the indoor temperature ($nviIndoorTemp$) was under $19,0\text{ }^{\circ}\text{C}$ and therefore under the threshold e.g. $20,0\text{ }^{\circ}\text{C}$ ($SCPTmaxRemoteTempSetpoint$) minus the Hysteresis e.g. $5\% = 1\text{ }^{\circ}\text{K}$ ($SCPTonOffHysteresis$) the windows concerned drive 10 % down ($SCPTstepValue$). This down movement in steps of 10 % occurs so long as the window is either completely closed = 0 % or the demanded temperature was between e.g. $19,0\text{ }^{\circ}\text{C}$ and $21,0\text{ }^{\circ}\text{C}$ ($SCPTonOffHysteresis$).

Indoor and outside temperature-dependent control (most common application)

When the indoor temperature value ($nviIndoorTemp$) is over the threshold value e.g. $20,0\text{ }^{\circ}\text{C}$ ($SCPTmaxRemoteTempSetpoint$) and over the current measured value of the outside temperature ($nviOutdoorTemp$), the windows move 10 % up ($SCPTstepValue$). This up movement in steps of 10 % occurs so long as the window is either completely opened = 100 %, or the required temperature of e.g. $20,0\text{ }^{\circ}\text{C}$ is reached ($SCPTmaxRemoteTempSetpoint$) or the outside temperature ($nviOutdoorTemp$) is higher than the indoor temperature ($nviIndoorTemp$).

Note: The delay time between the steps depends on the transmission rate of the temperature sensors!

When the indoor temperature measured value ($nviIndoorTemp$) is under the threshold value ($SCPTmaxRemoteTempSetpoint$) e.g. $20,0\text{ }^{\circ}\text{C}$ less 5% ($SCPTonOffHysteresis$) = $19\text{ }^{\circ}\text{C}$ or the outside temperature value ($nviOutdoorTemp$) is higher than the indoor temperature ($nviIndoorTemp$), the windows close 10 % ($SCPTstepValue$). This closing movement in steps of 10 % occurs so long as the window is either completely closed = 0 % or the measured temperature is e.g. between $19,0\text{ }^{\circ}\text{C}$ and $20,0\text{ }^{\circ}\text{C}$ ($SCPTonOffHysteresis$).

Only controlled over relative indoor humidity

When the relative indoor humidity value ($nviIndoorRH$) is over the threshold value e.g. 40% ($UCPTthresholdRH$), the windows move 10 % up ($SCPTstepValue$). This movement up in steps of 10 % occurs so long as the window is either completely opened = 100 % or the required indoor humidity of e.g. 40% ($UCPTthresholdRH$) is reached.

Note: The delay time between the steps depends on the transmission rate of the humidity sensor!

When the relative indoor humidity measured value (**nviIndoorRH**) is under the threshold value e.g. 40 % (**UCPTthresholdRH**) less e.g. 5 % from the threshold value (**SCPTonOffHysteresis**) = 38 %, the windows close 10 % (**SCPTstepValue**). This movement in steps of 10 % occurs so long as the window is either completely closed = 0 % or the measured relative indoor humidity is e.g. between 38 % and 42 % (**SCPTonOffHysteresis**).

Indoor and external humidity dependently controlled

When the relative indoor humidity value (**nviIndoorRH**) is over the threshold value e.g. 40 % (**UCPTthresholdRH**) and over the current value of the relative external humidity (**nviOutdoorRH**), the windows move up 10 % (**SCPTstepValue**). This movement up in steps of 10 % occurs so long as the window is either completely opened = 100 % or the required indoor humidity of e.g. 40 % (**UCPTthresholdRH**) is reached, or the relative external humidity (**nviOutdoorRH**) is higher than the relative indoor humidity (**nviIndoorRH**).

Note: The delay time between the steps depends on the transmission rate of the humidity sensors!

When the relative indoor humidity measured value (**nviIndoorRH**) is under the threshold value e.g. 40 % (**UCPTthresholdRH**) less e.g. 5 % from the threshold value (**SCPTonOffHysteresis**) = 38 % or the relative external humidity (**nviOutdoorRH**) is higher than the relative indoor humidity measured value (**nviIndoorRH**), the windows close 10 % (**SCPTstepValue**). This movement in steps of 10 % occurs so long as the window is either completely closed = 0 %, or the measured relative indoor humidity (**nviIndoorRH**) is e.g. between 38 % and 42 % (**SCPTonOffHysteresis**).

Indoor and outside temperature-dependent and additionally indoor and external humidity-dependently controlled

When the windows are controlled depending on these 4 inputs, all 4 criterias must always be fulfilled to be able to generate a movement command!

Example for opening the window:

(**nviIndoorTemp**) is over the threshold value e.g. 20,0 °C (**SCPTmaxRemoteTempSetpoint**)

AND

(**nviOutdoorTemp**) is lower than (**nviIndoorTemp**)

AND

(**nviIndoorRH**) is over the threshold value e.g. 40 % (**UCPTthresholdRH**)

AND

(**nviOutdoorRH**) is lower than (**nviIndoorRH**)

= the windows movement 10 % up (**SCPTstepValue**).

See also "indoor and outside temperature-dependently controlled" and "indoor and external humidity-dependently controlled".

6.7.10 Ventilation function with switching command

With this function it is possible to open or close windows step by step over a switching command. This switching command can come e.g. from a 2 point room temperature regulator and send cyclically over a binary input as SNVT switch.

Parameters and their default values:

nviInTempHigh	0,0 0 or 100,0 1	Window movement command close or open
SCPTstepValue	10,0 in %	Window movement in %

When a value 100,0 1 is received at the input (**nviInTempHigh**), all windows concerned will open 10,0 % (**SCPTstepValue**). This movement in steps of 10 % occurs max. 10 times until the windows is completely opened = 100 %.

When at the input (**nviInTempHigh**) a value 0,0 0 is received, all windows concerned will close 10,0 %. This movement in steps of 10 % occurs max. 10 times until the windows are completely closed = 0 %.

The delay time between the movement commands depends on the cyclical transmission e.g. (**SCPTMaxSendTime**) of the value at the input (**nviInTempHigh**).

6.7.11 Room brightness dependent blind control

Here, the blinds position, depending on the strength of light (lux), measured in the room, can be controlled automatically.

Parameters and their default values:

<code>nvillumLev</code>	current value in lux	Room/indoor brightness input SNVT_lux
<code>SCPTluxSetpoint</code>	0 in lux = deactivated	Brightness threshold with a fixed hysteresis of 20 %
<code>SCPTstepValue</code>	10,0 in %	Blind movement in %

When the measured value of indoor room brightness (`nvillumLev`) is over the brightness threshold value of e.g. 20000 lux (`SCPTluxSetpoint`), the blinds move 10 % (`SCPTstepValue`) down to reduce the indoor room brightness (`nvillumLev`). This movement command is repeated so long as the indoor room brightness (`nvillumLev`) is within the range of 20000 lux +/- 20 % (fixed hysteresis).

Likewise, when the room is too dark, the blinds move up until the indoor room brightness (`nvillumLev`) is lower as 16000 lux, (`SCPTluxSetpoint`) = 20000 lux - 20 % (defined hysteresis).

6.7.12 Scene function

Each of the 4 Sunblind Controller objects contains a scenes Controller with 16 scenes.

Parameters and their default values:

<code>nviScene</code>	current value	Scene input SNVT_scene
<code>UCPTlocalIP1</code>	SET_STATE 50 90	local intermediate position/Scene1
<code>UCPTscenePos2</code>	SET_STATE 10 0	Scene2
<code>UCPTscenePos3</code>	SET_STATE 20 0	Scene3
<code>UCPTscenePos4</code>	SET_STATE 30 0	Scene4
<code>UCPTscenePos5</code>	SET_STATE 40 0	Scene5
<code>UCPTscenePos6</code>	SET_STATE 50 0	Scene6
<code>UCPTwindPos7</code>	SET_UP	Scene7, wind alarm position
<code>UCPTtrainPos8</code>	SET_UP	Scene8, rain alarm position
<code>UCPTfrostPos9</code>	SET_UP	Scene9, frost alarm position
<code>UCPTsunPos10</code>	SET_STATE 50,-90	Scene10, sun function position
<code>UCPTdawnPos11</code>	SET_STATE 20 0	Scene11, dawn position
<code>UCPTduskPos12</code>	SET_STATE 30 0	Scene12, dusk position
<code>UCPTglarePos13</code>	SET_STATE 40 0	Scene13, position on glare
<code>UCPToverrPos14</code>	SET_UP	Scene14, override position
<code>UCPTmaintPos15</code>	SET_UP	Scene15, maintenance position
<code>UCPTsunOffPos16</code>	SET_UP	Scene16, position after sun automatic

The scenes 1 to 6 can be parametered freely with SNVT_setting movement commands or written with the current blinds position value using the learn command `SC_LEARN xx`.

Advice:

Scene 1 can be re-called additionally with a stop command if the blind are stopped if all 4 Switch Objects (binary inputs) of the Moco are in one of the local modes described under 6.4.3.

Learning in a scene is started with an entry of the command `SC_LEARN xx` over the variable (`nviScene`).

Following this action, the current position of the corresponding blind and the Sunblind Controller Object are stored and can then be re-called with `SC_RECALL xx` at any time.

⚠ ATTENTION:

Changing the movement command of scene 7 to 16 likewise changes the corresponding function!

The scenes 7 to 16 are assigned with function-corresponding positions like e.g. Scene 10 = `UCPTsunPos10`.

All scenes can be send however, with the appropriate scene number over the command `SC_RECALL xx`.

The blinds concerned then move to the position stored under the appropriate scene number.

6.7.13 Window contact function

This window contact input can be used for a superordinate control of blinds and windows.

If this function is to be used, the window contact function must be registered first in the priority table (see also 6.7.17)!

UCPTnvPriorityxx BF_WINDOWCONTACT Window contact input

Parameters and their default values:

nviWindowContact	0,0 0 (deactivated) or 100,0 1	Window contact input
SCPTmaxRcvTime	0,0 sec. (deactivated)	Max. time for receiving the window contact signal (heartbeat)
SCPTdefaultSetting	SET_UP	Movement command open window!

When a window with a window contact is opened, the value 100,0 1 is send to the window contact input ([nviWindowContact](#)). This results that the blinds or windows concerned moving to the upper end limit with SET_UP ([SCPTdefaultSetting](#)) and are blocked there as long as the window is closed and the value 0,0 0 is send to the window contact ([nviWindowContact](#)). When, in addition, the heartbeat monitor of the window input is activated e.g. 5,0 seconds ([SCPTmaxRcvTime](#)), the blinds or windows concerned move to the upper end limit with SET_UP ([SCPTdefaultSetting](#)) if no new signal is received at the window contact input within 5.0 seconds. They block as long they do not receive a new signal!

Naturally, the blinds cannot only move upwards if the window is opened, they can be also blocked in the current position. This is possible with the ([SCPTdefaultSetting](#)) = SET_STOP.

6.7.14 Auto mode input

With this input it is possible to switch the following functions/inputs on and off:

- Local operation
- Sun automatic/suntracking
- Indoor temperature input
- Indoor temperature switching input
- Relative indoor humidity input
- Indoor brightness input
- Global sunray input

With ([nviAutoMode](#)) = 00,0 0 the auto mode is switched off and switched on with 100,0 1.

When auto mode is switched off the above mentioned functions and inputs are ignored.

The function auto mode on/off can also be switched over the inputs:

- Local
- Group
- Global
- Override
- Maintenance

Auto mode off = SET_OFF

Auto mode on = SET_ON

6.7.15 Terminal load input

With this input, the venetian blind slats can be adjusted in % via the requirement for heating or cooling load ([nviTerminalLoad](#))

A heating load requirement ([nviTerminalLoad](#)) e.g. of 50 % will open the slats to the horizontal position to allow sun warmth into the room.

Likewise with a cooling load requirement ([nviTerminalLoad](#)) of e.g. - 30 %, the slats close completely so that heat from the sun does not enter the room.

6.7.16 Occupancy function

With the occupancy function the controlling of the blinds of a room or area can be switched over from local to superordinate/global control.

Parameters and their default values:

<code>nviOccSensor</code>	current value	Occupancy input
<code>nviGlobal</code>	current value	Central control
<code>SCPTbypassTime</code>	0 min. (deactivated)	Occupancy delay time when leaving the room

When the input (`nviOccSensor`) receives the signal `OC_OCCUPIED` = occupancy, there is someone in the room, and local operation with the input (`nviLocalControl`) is active.

When the person leaves the room, the signal `OC_UNOCCUPIED` = absence is received and local control, after the occupancy delay time (`SCPTbypassTime`) has ended, is deactivated. When the room is not occupied then it is controlled centrally via (`nviGlobal`) e.g. to save energy. This can occur e.g. through automatic closing of the blinds in summer or by opening the blinds in winter to heat the room with sunshine.

By newly entering the room at the same day, the blinds move to the last internally stored position.

6.7.17 Priority management of the inputs

With the 16 configuration parameters (`UCPTnvPriority00`) to (`UCPTnvPriority15`) the priority level of the individual input signals is specified. The input variable referred to in the configuration variable (`UCPTnvPriority00`), has the highest priority in the Sunblind Controller object.

The configuration parameters `UCPTnvPriority00` to 08 are assigned as follows:

<code>UCPTnvPriority00</code>	=	<code>BF_SET_OVERWRITE</code>
<code>UCPTnvPriority01</code>	=	<code>BF_OVERWRITE</code>
<code>UCPTnvPriority02</code>	=	<code>BF_WINDSPEED</code>
<code>UCPTnvPriority03</code>	=	<code>BF_WIND_DIR</code>
<code>UCPTnvPriority04</code>	=	<code>BF_FROST</code>
<code>UCPTnvPriority05</code>	=	<code>BF_OUTTEMP</code>
<code>UCPTnvPriority06</code>	=	<code>BF_RAIN</code>
<code>UCPTnvPriority07</code>	=	<code>BF_GLOBAL</code>
<code>UCPTnvPriority08</code>	=	<code>BF_GROUP</code>

The configuration parameter (`UCPTnvPriority09 to 15`) is assigned with `BF_NULL` and thus deactivated.

Each of these 16 `UCPTnvPriority` parameters can be assigned with one of 28 arbitrary input variables from the following table:

<code>BF_WIND_DIR</code>	Wind direction input
<code>BF_NULL</code>	Deactivated/is not assigned
<code>BF_Local</code>	Local control input
<code>BF_GROUP</code>	Group control input
<code>BF_WINDSPEED</code>	Wind speed input
<code>BF_SUNLUX</code>	Brightness input
<code>BF_RAIN</code>	Rain message input
<code>BF_FROST</code>	Frost message input
<code>BF_DAWN</code>	Dawn message input
<code>BF_DUSK</code>	Dusk message input
<code>BF_OUTTEMP</code>	Outside temperature input
<code>BF_INDOORTEMP</code>	Inside temperature input
<code>BF_OUTDOOR_RH</code>	Relative outside air humidity input
<code>BF_INDOOR_RH</code>	Relative indoor humidity input
<code>BF_ILLUM_LEV</code>	Indoor illumination level input

BF_SCENE	Scene input
BF_GLOBAL	Global control input
BF_WINDOWCONTACT	Window contact input
BF_AUTOMODE_CHANGED	Automode input
BF_OVERRIDE	Override input
BF_MAINTENANCE	Maintenance input
BF_TERMINAL_LOAD	HVAC - Input
BF_OCC_SENSOR	Occupancy sensor input
BF_OCC_OVERRIDE	Occupancy override input
BF_GLARE	Glare message input
BF_ELEVATION	Sun elevation angle input
BF_AZIMUTH	Sun azimuth angle input
BF_SET_OVERRIDE	Setting override input

When several signals of these input variables are assigned at the same time, the signal with the highest priority is always processed first! If this signal is no longer active, the signal with the next lower priority is processed, if in the meantime, no new signal with a higher priority is received.

All input signals that are not prioritised over an (UCPTnvPriority) are only carried out if there are no longer any input signals with priority was active. Here the last input signal is always carried out!

6.8 SOMFY Adapter object #2000

1 x per LON module

The "SOMFY Adapter Object" is a converter to use the old SOMFY and the LONMARK standard usage of the variable SNVT_setting. This function was needed to replace an old SOMFY LON device with a new animeo LON device or to implement old SOMFY LON devices into a new network together with animeo LON devices.

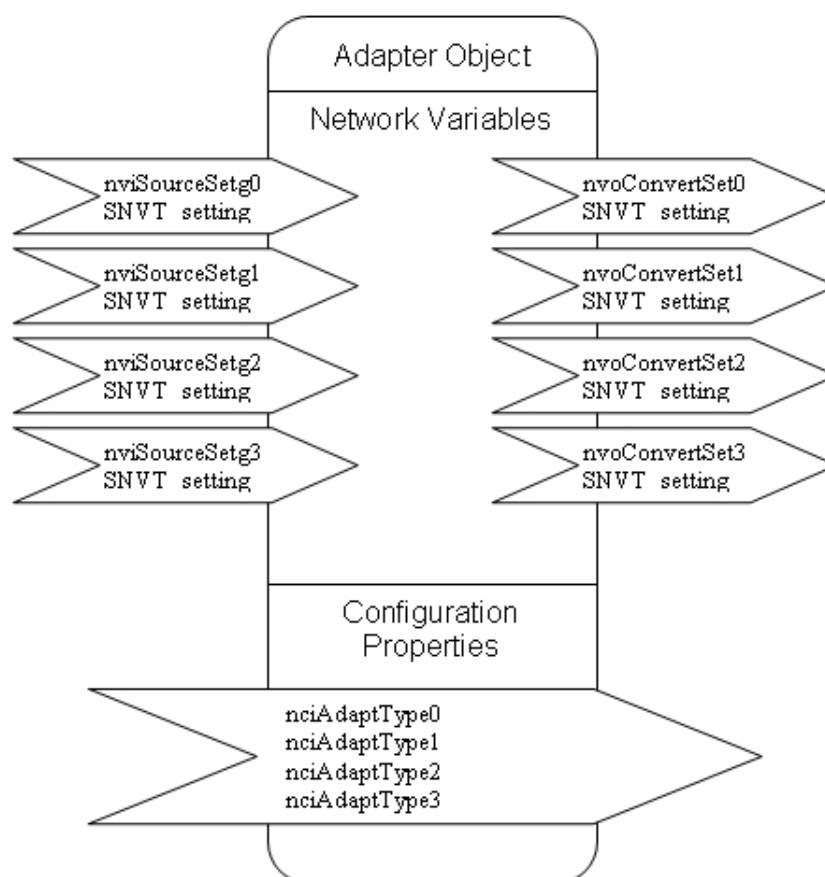


Fig. 6.8: SOMFY Adapter object #2000

6.8.1 Description of details of SOMFY Adapter object

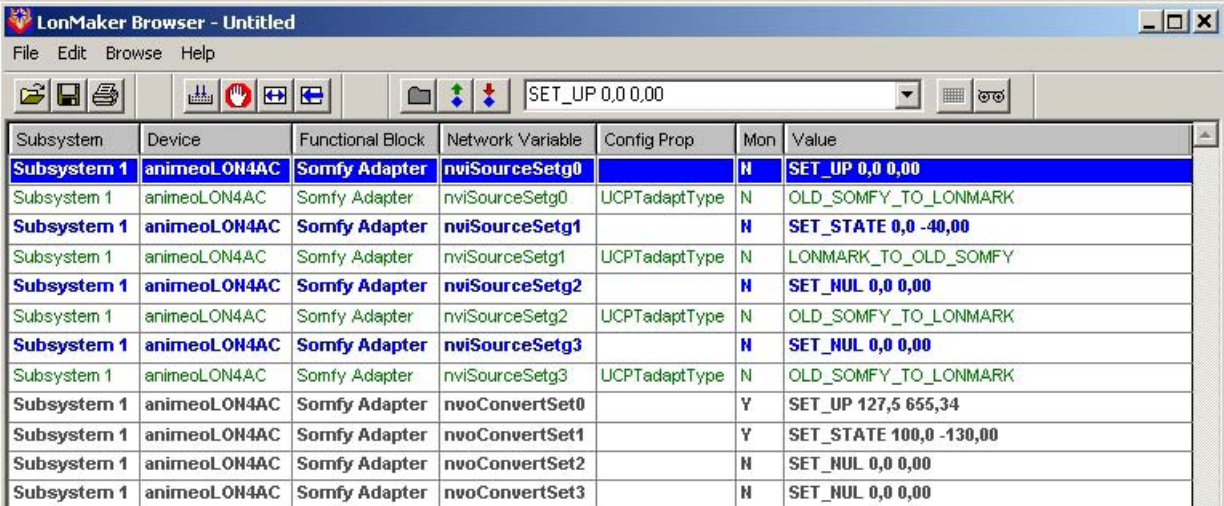
This object can be used to convert up to 4 separate SNVT_setting commands from:

- SOMFY to LONMARK and also from
- LONMARK to SOMFY

6.8.2 Function of the SOMFY Adapter object

- 6.8.3 Configuration of the SOMFY adapter

LonMaker Browser view of the Somfy Adapter Object



Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg0		N	SET_UP 0,0 0,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg0	UCPTadapType	N	OLD_SOMFY_TO_LONMARK
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg1		N	SET_STATE 0,0 -40,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg1	UCPTadapType	N	LONMARK_TO_OLD_SOMFY
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg2		N	SET_NUL 0,0 0,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg2	UCPTadapType	N	OLD_SOMFY_TO_LONMARK
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg3		N	SET_NUL 0,0 0,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nviSourceSetg3	UCPTadapType	N	OLD_SOMFY_TO_LONMARK
Subsystem 1	animeoLON4AC	Somfy Adapter	nvoConvertSet0		Y	SET_UP 127,5 655,34
Subsystem 1	animeoLON4AC	Somfy Adapter	nvoConvertSet1		Y	SET_STATE 100,0 -130,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nvoConvertSet2		N	SET_NUL 0,0 0,00
Subsystem 1	animeoLON4AC	Somfy Adapter	nvoConvertSet3		N	SET_NUL 0,0 0,00

6.8.3 Configuration of the SOMFY adapter

Each of the 4 **nviSourceSetg** SNVT_setting inputs are directly linked to a **nvoConverterSet** SNVT_setting output. The function how the adapter shall work can be configured for each input separately by the 4 **UCPTadapType** parameters.

Parameters and their default values:

nviSourceSetg0 to 3	SET_NUL 0,0 0,00	Adapter input SNVT_setting
UCPTadapType0 to 3	OLD_SOMFY_TO_LONMARK	Function position
nvoConverterSet0 to 3	SET_NUL 0,0 0,00	Adapter output

Configuration:

UCPTadapType = OLD_SOMFY_TO_LONMARK (Default)

Old SOMFY SNVT_setting commands are translated to be LONMARK. This function is needed if an old SOMFY LON device e.g BIU 2AC, will be replaced by an animeo LON 4AC Motor Controller.

See example in the upper browser view (**nviSourceSet0** + **nvoConvertSet0**, **nviSourceSet2** + **nvoConvertSet2**)

UCPTadapType = LONMARK_TO_OLD_SOMFY

LONMARK SNVT_setting commands are translated to be conform to the Old SOMFY interpretation of SNVT_setting. This function is needed if an old SOMFY LON device e.g BIU 2AC, will be controlled by new LONMARK certified or conform devices.

See example in the upper browser view (**nviSourceSet1** + **nvoConvertSet1**)

Old SOMFY interpretation of SNVT_setting:

Function	Setting *	Rotation **	Description	Interpretation
SET_OFF	XX	XX	OFF active	Unused
SET_ON	XX	XX	ON active	Unused
SET_DOWN	invalid or 0 % invalid or 0 %	invalid or 0 ° > 0 ° to 180 °	Down active Relative Down	Going down to the down limit position relative downward orientation
SET_UP	invalid or 0 % invalid or 0 %	invalid or 0 ° > 0 ° to 180 °	Up active Relative up	Going up to the up limit position relative upward orientation
SET_STOP	XX	XX	Stop active	Stop action
SET_STATE	0 % > 0 % to 100 % 0 %	invalid or 0 ° XX > 0 ° to 180 °	Position active Position active Position & Angle active	Going down to the down limit position Going to the position Going down to the down limit position then upward orientation
SET_NUL	XX	XX	Release	Release of the previous command

* invalid data FF

** invalid data 7FFF

A NUL setting has to be received to release an absolute setting

These SOMFY products are working with the old SNVT_setting rules:

- BIU 1LT
- BIU 2LT
- BIU 2AC
- BIU 6AC
- BIU 2ILT
- BIU 2DC
- BIU 2DCE
- GCU
- GCU US

6.9 Virtual object

1 x per LON module

In "Virtual Object" all configuration parameters of all objects of a LON module of the types SCPT and UCPT parallel are made available as "bindable" nci (network configuration input).

ATTENTION

All configuration parameters are stored in the internal Flash and are thus subject to the physical conditions of a Flash memory. As a consequence, this can mean that a "bound" nci, due to an integration error, is overwritten cyclically with a high repeating rate. This can destroy the memory! A Flash storage can be overwritten at an average approx. 100,000 times.

For further explanations of the LON terminology please go to:
http://www.lonmark.org/technical_resources/terminology_a-c

animeo	animeo is the name for the complete SOMFY Big Building Controlling System which encompasses a large number of devices in IB+, KNX/EIB and LON Bus technology.
animeo IB+ 4 AC Motor Controller	This refers to SOMFY 4 AC Motor Controllers. These Motor Controllers can be connected over RS485 to the animeo LON 4 AC Motor Controller. The protocol for data exchange is proprietary.
Backlash	This is the compensation of the mechanical play occurring when the slats are tilted. This refers to the delay time in seconds before tilting of the slats.
European Mode	Short pressing of the push buttons (e.g. < 0.5 s) = slats tilt Longer pressing of the push buttons (e.g. > 0.5 s) = start of the slats tilt, STOP after releasing the push buttons and start of a complete up or down movement when the push button remains pressed.
IB+	The unidirectional proprietary SOMFY 4 wired bus. It refers to a RS485 bus and an additional two wires to transmit priority signals like up and down. This bus is used to communicate with SOMFY animeo IB+ products.
LON software configuration tool:	This is a PC software used for the integration, configuration and maintenance of LON components in a LON network (Lonmaker, Alex, NL220).
Moco	Short name for Motor Controller. The plural of Moco in this document read as Mocos.
Running time	This value refers to the blinds and has to be measured. The running time is entered in seconds. Two running times per blind can be entered (in the upper end limit and in the down end limit and vice versa).
Suntracking	The blinds position, depending on brightness and the facade orientation, tracks the position of the sun. The sun's current position is calculated based on the data; position of the building, date and time.
Tilting time	This parameter defines the time in seconds the slats need to move from the minimum (e.g. - 90 °) to the maximum slats angle (e.g. + 90 °).
US Mode	Short pressing of the push buttons (e.g. < 0.5 s) = start of a complete up or down movement. Longer pressing of the push buttons (e.g. > 0.5 s) = start of the slats tilt, STOP after releasing the push buttons and start of a complete up or down movement when the push button remains pressed.

8 Technical Data

The 4 AC Motor Controller animeo LON is an electronic operated, independently mounted control with looped-through PE-connection.

4 AC Motor Controller LON	WM Ref. 1 860 115	DRM Ref. 1860119
Supply voltage	220–240 V AC / 50/60 Hz	220–240 V AC / 50/60 Hz
LON transceiver	FTT	FTT
Stand-by current (primary)	39 mA AC @ 230 V	39 mA AC @ 230 V
Max. motor current consumption	4 x 3.15 A, cos j = 0.95	4 x 3.15 A, cos j = 0.95
Supply voltage of group control input	SELV, 16 V DC =	SELV, 16 V DC =
Supply voltage of local push buttons	SELV, 16 V DC =	SELV, 16 V DC =
Terminals	Spring connectors	Spring connectors
Terminals LON	LON bus terminal (green)	LON bus terminal (green)
Running time per output (relay contact)	Max. 327 seconds	Max. 327 seconds
Fuses per output	4 x F 3.15 AH	4 x F 3.15 AH
Operation temperature	0 °C to 45 °C	0 °C to 45 °C
Relative humidity	85 %	85 %
Material of housing	CC-ABS polycarbonate	CC-ABS polycarbonate
Housing dimensions (H x B x W)	180 x 255 x 63 mm	90 x 210 x 63 mm (12 TE)
Degree of protection	IP 20	IP 20
Protection class	II, corresponding to the installation	II, corresponding to the installation
Conformity	CE by EN 60730-1	CE by EN 60730-1

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