LONMARK®
Functional Profile:
Lighting Panel Controller

Overview

This document describes the profile of a Lighting Panel Controller (LPC) object, which has self-contained hardware inputs and actuators. The LPC object is used to control and monitor grouped lighting relays in a panel environment.
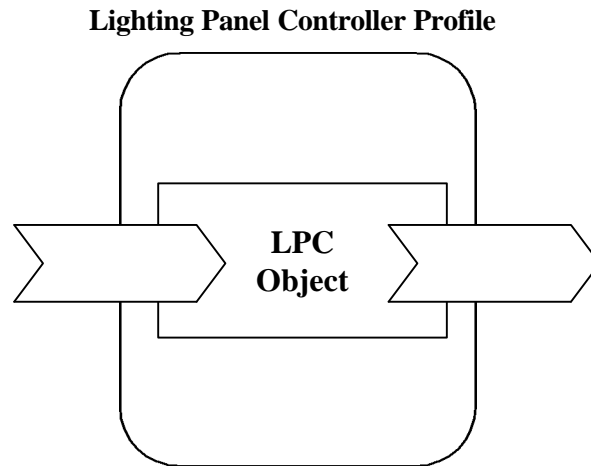
Lighting Panel Controller Profile

Figure 1   Lighting Panel Controller (LPC)

Example Usage

Typically the LPC object receives input from a Scene Panel (#3250) object. The output from the LPC is fed-back to the network to indicate the current state of a controlled relay or group of relays.

The typical LPC controls and monitors multiple groups of lighting relays to a maximum of 255 groups of up to 32 lighting relays per group. The LPC also provides updated feedback status for all programmed groups.
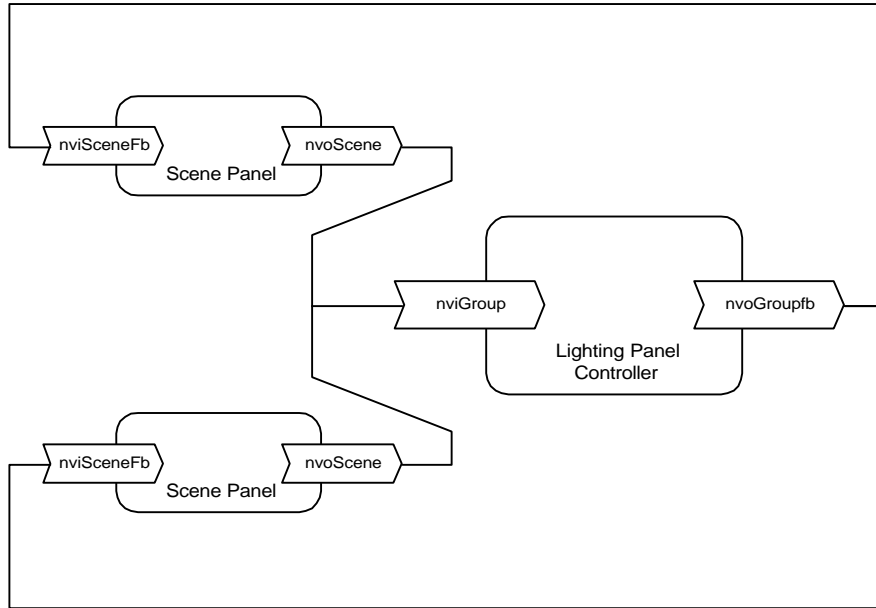
Figure 2 Example Usage of Automatic Transfer Switch Object
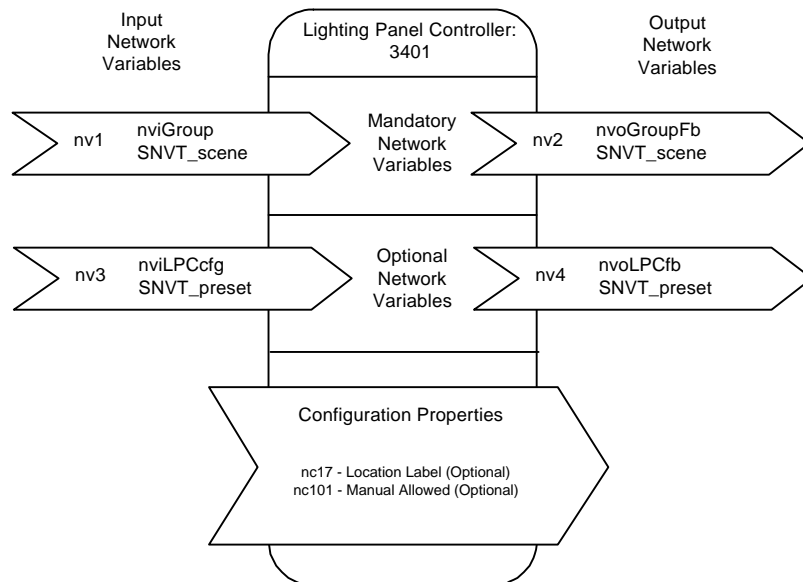
Object Details

Figure 3 Lighting Panel Controller Object Details

Table 1 SNVT Details

NV # (M/O)*	Name	In/Out	SNVT Type (SNVT Index)	Class	Description
1 (M)	nviGroup	In	SNVT_scene (115)	I/O	lighting group trigger
2 (M)	nvoGroupFb	Out	SNVT_scene (115)	I/O	lighting group feedback
3 (O)	nviLPCcfg	In	SNVT_preset (94)	I/O	write group configuration data
4 (O)	nvoLPCfb	Out	SNVT_preset (94)	I/O	read group configuration data
nc17 (O)	nciLocation	–	SNVT_str_asc (36)	config	Label, Location SCPTlocation
nc101 (O)	nci ManualAllowed	–	boolean	config	Manual Allowed SCPTmanualAllowed

* M = mandatory, O = optional

Table 2 SCPT Details

SCPT Index (M/O)*	Name	Association **	Description
nci101 (O)	SCPTmanualAllowed nciManualAllowed boolean	nv0	Status Update Enable: used to enable automatic network updating by the LPC of group status upon any change in state.
nci17 (O)	SCPTlocation nciLocation SNVT_str_asc (36)	nv0	used to provide physical location of the node

* M = mandatory, O = optional

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

Mandatory Network Variables

Lighting Group Trigger

```
network input SNVT_scene  nviGroup;
```

This input network variable triggers a group or pattern of lighting circuits. In addition it can load the groups preset memory a functional mode. If the recalled group number is not found in the preset memory, the controller takes no action. The Learn and Display commands store and display local values in the preset memory under the given group number.

Valid Range

The complete range of SNVT_scene. Group or pattern 0 is not used.

Default Value

The default value is group or pattern 0, meaning no control action.

Lighting Group Feedback Output

```
network output SNVT_scene   nvoGroupFb;
```

This output network variable provides current status of any of the possible 255 groups or patterns programmed into the controller.

Valid Range

The valid enumeration range is SC_STATUS_ON, SC_STATUS_OFF and SC_STATUS_MIXED, with the associated group or pattern number (1 to 255). Group or pattern 0 is not used. Where SC_STATUS_ON indicates all members of the group are On or the pattern is True. SC_STATUS_OFF indicates all members of the group are Off or the pattern is Not True. SC_STATUS_MIXED indicates that members of a group are in an indeterminate or mixed state.

When Transmitted

Transmission options are configurable. When SCPTstatusenable is set TRUE the network variable is transmitted whenever a change in status of any group or pattern occurs. When SCPTstatusenable is set FALSE the network variable is not transmitted on a change in status of any group or pattern. Regardless of the setting of SCPTstatusenable the status of any group can be requested by SNVT_Scene function SC_GROUP_STATUS, thus the denoted groups status will be returned.

Update Rate

There is no update rate.

Default Service Type

The default service type is unacknowledged repeat.

Optional Network Variables

LPC Configuration Input

```
network input SNVT_preset      nviLPCcfg;
```

This input network variable provides the functions required for programming groups, patterns and other lighting behaviors into the controller. The fields that are used: learn, selector, value and the time fields. For details refer to *The SNVT Master List and Programmers Guide.*

Valid Range

learn:

LN_LEARN_VALUE   - overwrite this group or pattern with new data

LN_REPORT_VALUE   - report this group's data

selector:

The valid selector range is the full 16 bit range. The first 255 selectors allow programming of the 255 groups into the controller, 1 through 255 (group 0 is not used). The second 255 selectors allow programming of the 255 patterns into the controller, 257 through 511 are used for this (group 256 is not used). The remaining selectors are not defined here and may be used to supply manufacturer specific configurations to the controller.

value:

A 32 bit field. Specifying which local relays are to be included in the definition of this group. Bit #1 specifying relay #1 up to relay #32. Setting the bit includes the relay.

Time Fields:

An optional delay time can be assigned to the group denoted by the selector. All the valid time fields for SNVT_Preset can be transferred (days, hours, minutes, seconds and milliseconds). For details consult the SNVT Master List and Programmers Guild.

Default Value

The default value is selector = 0, meaning no action.

LPC Configuration Feedback Output

```
network output SNVT_preset    nvoLPCfb;
```

This output network variable provides information on current LPC configuation.

Valid Range

learn:
LN_REPORT_VALUE   - report this selectors group, patterns or configuration data.

selector:
The valid selector range is the full 16 bit range. The first 255 selectors allow readback of the 255 groups from the controller, 1 through 255 (group 0 not used). The second 255 selectors allow readback of the 255 patterns from the controller, 257 through 511 are used for this (group 256 is not used). The remaining selectors are not defined and may be used to readback manufacturer specific configurations from the controller.

value:

A 32 bit field. Specifying which local relays are included in the definition of this group. Bit #1 specifying relay #1 up to relay #32. A bit set indicates the relay is included.

Time Fields:

The optional delay time assigned to the group denoted by the selector will be transferred here. All the valid time fields for SNVT_Preset can be transferred (days, hours, minutes, seconds and milliseconds). For details consult the *SNVT Master List and Programmers Guide.*

When Transmitted

On receipt of SNVT_preset   [LN_REPORT_VALUE]

Update Rate
On request.

Default Service Type
Unacknowledged repeat.

Configuration Properties

Location Label

network input config SNVT_str_asc   nciLocation;

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

Valid Range
Any NUL terminated ASCII string of 31 bytes total length.

Default Value
An ASCII string containing all zeros.

SCPT Reference
SCPT_location #17

Status Update Enable

network input config SNVT_Boolean   ncimanualAllowed;

This input configuration network variable is used to enable
automatic network updating by the LPC of group status upon
any change in state.

Valid Range
TRUE or FALSE

Default Value
FALSE.   Status will not be updated to the network upon change in
group status.

SCPT Reference
SCPTmanualAllowed #101

Data Transfer

```
No Data Transfer
```

Power-up State

```
Current state of all groups or patterns would be transmitted.
```

Boundary and Error Conditions

```
None.
```

Additional Considerations

```
None.
```