



LONMARK

Functional Profile:

Audible Fire Indicator

Overview

This document describes the use of the Audible Fire Indicator Object for fire alarm notification function. The Fire Indicator object is assumed to reside in devices within the fire system. The role of the Node Object in alarm reporting for Fire Indicator devices is also described in this document.

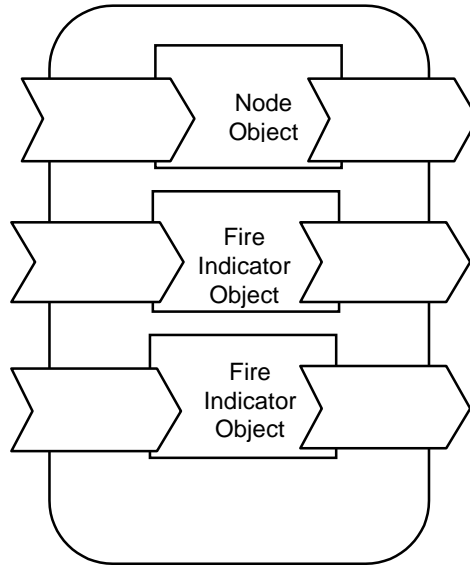


Figure 1 Fire Indicator Objects

Example Usage

The primary purpose of Fire Alarm systems is to notify occupants in case of a fire condition. Fire Initiator devices perform the function of detecting conditions that accompany fire such as smoke, heat, or manual action (in case of a pull station etc). When a fire has been detected, the fire alarm system notifies the occupants of the fire condition via an audible or visible device as listed below (this profile applies to the devices marked AUDIBLE below):

- Horn (activated by a DC signal) - AUDIBLE
- Chime (activated by a DC signal) - AUDIBLE
- Bell (activated by a DC signal) - AUDIBLE
- Electronic Sounder (powered locally at the device) - AUDIBLE
- Speaker (activated by an AC signal, typically a series of tones or voice messages)-AUDIBLE
- Strobe (activated by a fixed DC signal, can be synchronized or non-synchronized)-VISIBLE

Each device has an audible or visible output rating, and an input voltage/power requirement specification. Indicating devices can also be supervised, and therefore capable of detecting faults, thereby generating trouble conditions.

Node Object

The Node object can be used to provide additional alarm reporting, via the nvoAlarm network variable, in devices using Fire objects. The Node object is fully described in the LONMARK Application Layer guidelines. Details of the use of the nvoAlarm network variable in Fire devices are provided below.

nvoAlarm

network output sync SNVT_alarm nvoAlarm;

This output network variable transmits alarm data for each object on a node to a monitoring node. A message containing all the data relating to the alarm condition is sent whenever an alarm condition occurs, or is cleared, and upon the object receiving an RQ_UPDATE_ALARM request via the nviRequest network variable on the node Object (see the LONMARK Application Layer guidelines for complete details). The structure definition for SNVT_alarm is described in the SNVT Master List and Programmer's Guide (005-0027-01) however further definition is provided below for its use for Indicator fire conditions.

Valid Alarm_type enumerations are as listed below:

Enum #	Alarm_type Field	Notes*
15	AL_FIR_TRBL	Trouble (fault) condition with an object
0xFF	AL_NUL	

Valid priority_level_t enumerations are as below:

Enum #	Alarm_type Field	Notes*
7	PR_4	Trouble (fault) condition with an object
0xFF	PR_NUL	

When Transmitted

It is transmitted when an alarm condition occurs and also upon receiving an RQ_UPDATE_ALARM request via the nviRequest network variable.

Valid Range

The valid range for the value field is any value within the defined limits of the SNVT_alarm output.

Default Service Type

The default service type is acknowledged.

Fire Indicator Object

The Fire Audible Indicator Object provides basic ON, OFF capability via SNVT_switch for use by Audible Indicators.

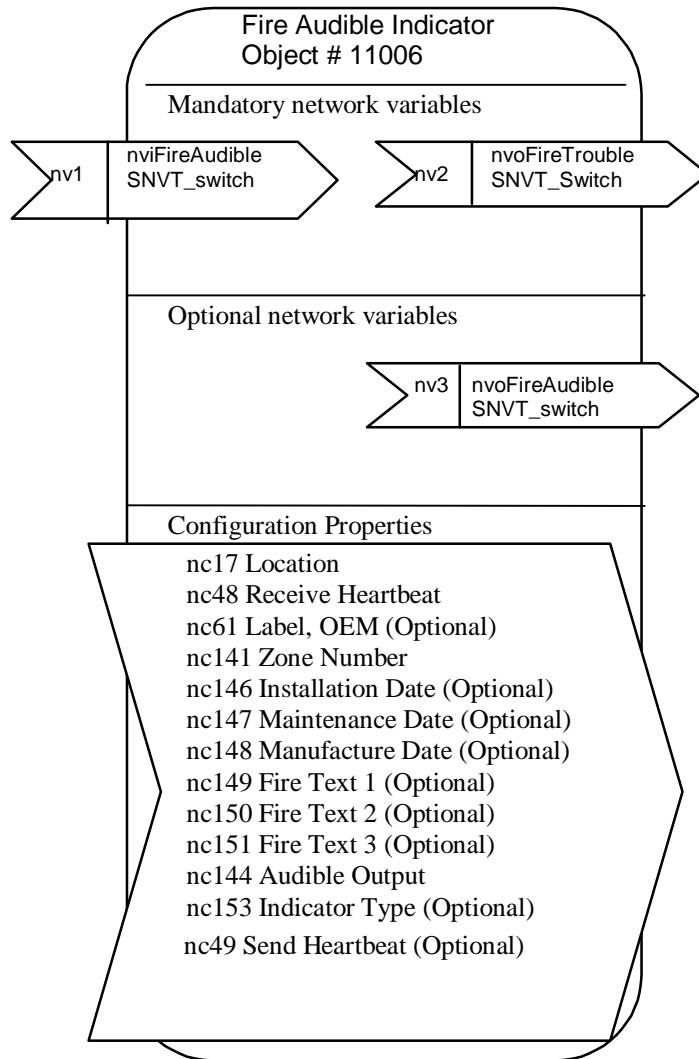


Figure 2 Audible Fire Indicator Object Details

Mandatory Network Variables

nviFireAudible

network output SNVT_switch nvoFireAudible;

This input network variable receives the status (ON or OFF) request (command) for an audible indicating device. It can be bound to the nvoAlarm network variable(s) of initiating device(s)

When Transmitted

nviFireAudible is not transmitted.

Valid Range

The valid range for the value field is any value within the defined limits of the SNVT_switch.

The following table describes the encoding of SNVT_switch for fire alarm conditions:

state	val %	general purpose
0	0	No audible (OFF)
1	1-100	Audible (ON)

The typical indication object will make use of the state value contained in the SNVT_state above to turn its output ON or OFF as requested.

Default Service Type

The default service type is acknowledged.

nvoFireTrouble

network output SNVT_switch nvoFireTrouble;

This output network variable transmits initiator trouble information for use by simple Indicators.

When Transmitted

nvoFireTrouble is transmitted when an indicator failure condition occurs. A trouble condition can include any fault/trouble that can be detected by the device.

Valid Range

The valid range for the value field is any value within the defined limits of the SNVT_switch output.

The following table describes the encoding of SNVT_switch for Trouble condition reporting:

state	val %	general purpose
-------	-------	-----------------

0	0	No trouble
1	1-100	Trouble

Depending on the Indicator receiving the information it can make use of only the state field of SNVT_switch or also the value field of SNVT_switch.

Default Service Type

The default service type is acknowledged.

Optional Network Variables

nvoFireAudible

network output SNVT_switch nvoFireAudible;

This output network variable transmits the feedback status (ON or OFF) of indicating device.

When Transmitted

nvoFireAudible is not automatically transmitted.

Valid Range

The valid range for the value field is any value within the defined limits of the SNVT_switch output.

The following table describes the encoding of SNVT_switch for various fire alarm conditions:

state	val %	general purpose
0	0	No audible (OFF)
1	1-100	Audible (ON)

A device such as an operator interface device can make use of the value field for its display, logging etc.

Default Service Type

The default service type is acknowledged.

Configuration Properties

Node Location Label

network input config SNVT_str_asc nciNodeLocation;

This configuration property contains the location of the object, and is entered into the device at installation and/or configuration time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_str_asc network variable type.

Default Value

No text strings specified.

SCPT Reference

SCPTlocation (17)

Receive Heartbeat

network input config SNVT_time_sec nciMaxReceiveT;

This configuration property, defines the maximum period of time that should expire, before the indicator device is deactivated.

Valid Range

Defined by SNVT_time_sec.

Default Value

Disabled.

SCPT Reference

SCPTmaxSendTime(48)

Send Hearbeat

network input config SNVT_time_sec nciMaxSendTime;

This configuration property contains the maximum amount of time that may elapse between successive indications from nvoFireAlm to its bound network variables.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_time_sec network variable type.

Default Value

No value specified.

SCPT Reference

SCPTmaxSendTime (49)

OEM Label

network input config SNVT_str_asc nciOEMLabel;

This configuration property contains the manufacturer specific information, is factory set, and is read only.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_str_asc network variable type.

Default Value

No text strings specified.

SCPT Reference

SCPToemType(61)

Zone Number

network input config SNVT_zone_num nciZoneNum;

This configuration property contains the zone number for the indicator.

Valid Range

0..65,535

Default Value

No value specified.

SCPT Reference

SCPTzoneNum (141)

Installation Date

network input config SNVT_time_stamp nciInstallDate;

This configuration property contains the date of installation for the indicator, and is entered into the device at installation and/or configuration time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_time_stamp network variable type.

Default Value

No value specified.

SCPT Reference

SCPTinstallDate (146)

Maintenance Date

```
network input config SNVT_time_stamp nciMaintDate;
```

This configuration property contains the date of last maintenance (cleaning/inspection/test etc) for the indicator, and is entered into the device at test time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_time_stamp network variable type.

Default Value

No value specified.

SCPT Reference

SCPTmaintDate (147)

Manufacture Date

```
network input config SNVT_time_stamp nciManufDate;
```

This configuration property contains the date of manufacture for the indicator, it is factory set, and is read only.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_time_stamp network variable type.

Default Value

No value specified.

SCPT Reference

SCPTmanfDate (148)

Fire Text 1

```
network output config SNVT_str_asc nciFireText1;
```

This configuration property allows text information relevant to fire conditions to be read from the device. This text is

defined at installation and/or configuration time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_str_asc network variable type (30 char max). A ">" char at the end of the text string indicates presence of nciFireText2.

Default Value

No text strings specified.

SCPT Reference

SCPTfireTxt1 (149)

Fire Text 2

```
network output config SNVT_str_asc nciFireText2;
```

This configuration property allows text information relevant to fire conditions to be read from the device. This text is defined at installation and/or configuration time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_str_asc network variable type (30 char max). A ">" char at the end of the text string indicates presence of nciFireText3.

Default Value

No text strings specified.

SCPT Reference

SCPTfireTxt2 (150)

Fire Text 3

```
network output config SNVT_str_asc nciFireText3;
```

This configuration property allows text information relevant to fire conditions to be read from the device. This text is defined at installation and/or configuration time.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_str_asc network variable type (30 char max).

Default Value

No text strings specified.

SCPT Reference

SCPTfireTxt3 (151)

Audible Output

```
network output config SNVT_sound_db nciAudibleOut;
```

This configuration property allows sound output specification in dBA to be read from the device. This information is defined at manufacture time, and is read only type.

Valid Range

The valid range for this configuration property is any value within the defined limits of the SNVT_sound_db network variable type. Specific to a market, and code jurisdiction, more restricted ranges may be applied to this parameter.

Default Value

None specified.

SCPT Reference

SCPTaudOutput (144)

Indicator Type

```
network input config SNVT_fire_indcte nciIndicatorType;
```

This configuration property contains the indicator type identifier, and is entered into the device at installation and/or configuration time.

Valid Range

The valid range for this configuration property is one of the values within the defined limits of the SNVT_fire_indcte network variable type as shown in the table below:

Name	Enum Definition	Notes
SNVT_fire_indcte	Indicator types for fire notification	typedef file: SNVT_FN.H typedef name: fire_indicator_t
	0 Undefined 3 Horn- Unsynch	Valid

Name	Enum Definition	Notes
	4 Chime 5 Bell - Unsynch 6 Sounder 7 Speaker 9 Horn - Synchronized 10 Bell - Synchronized 0xFF	Valid Valid Valid Valid Valid Valid Null Value

Default Value

Manufacturer defined

SCPT Reference

SCPTfireIndcte (153)

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Data Transfer

No data file transfer is associated with the Fire Audible Indicator Object.

Power-up State

None specified.

Boundary and Error Conditions

None specified.

Additional Considerations

None specified.

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