

**nexus**

Emergency Lighting Management System











## ARE YOU PREPARED FOR AN EMERGENCY?



In the interest of public safety, Building & Life Safety Codes outline the obligations of building owners/managers, in relation to Exit signs and Emergency Lighting, to ensure the safe evacuation of occupants in an emergency. It is the responsibility of a building owner/manager to:

- Conduct a discharge test every month
- Conducting functional tests annually
- Keep a log book of maintenance information

Complying with these requirements can be very expensive and labor intensive, especially in larger buildings where testing requires many labor hours spent manually inspecting every emergency light. In addition, the disruption of the power supply during inspection can put public safety at risk.

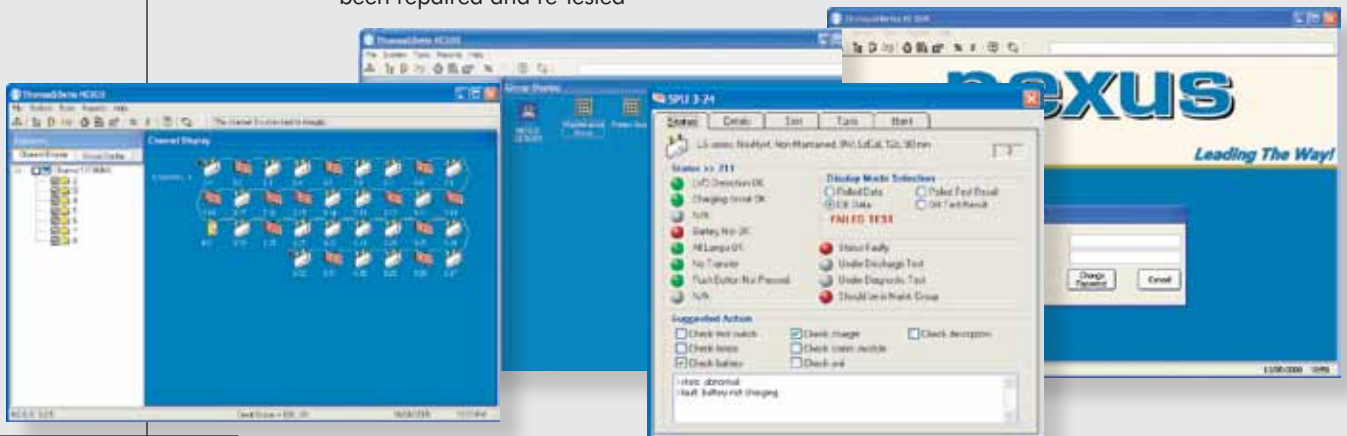
COMPONENT		ICON COLOUR	MEANING
SPU		NO CHANGE	STATUS OK
		RED BACKGROUND	FAULTY UNIT
		GREEN DOT	UNIT UNDER TEST
		GREYED OUT	UNIT NOT COMMUNICATING
		LAMP GREYED OUT	MAINS POWER LAMP OUT
		GENERIC DECOMMISSION SYMBOL	SPU DECOMMISSIONED
ROUTER / REPEATER		NO CHANGE	STATUS OK
		GENERIC DECOMMISSION SYMBOL	ROUTER DECOMMISSIONED
GROUP		NO CHANGE	STATUS OK
		RED 'TEST'	GROUP, OR UNIT IN GROUP, UNDER TEST

## WHAT NEXUS CAN DO FOR YOU

Nexus, is a real-time emergency lighting monitoring system which offers building owners manage over their public safety obligations, and helps manage installation and the maintenance of an emergency lighting system.

A Nexus network enables the user to:

- Manage the installation and removal of components
- Cost effectively test and monitor the system
- Assign units to groups. Units are collected in groups so that they can be tested together in a logical manner e.g. – groups could represent different floors or departments
- Manage maintenance activities. Any unit that fails a test or exhibits a fault will be automatically added to the Maintenance Group ensuring easy identification of the units requiring maintenance. The units are automatically removed from the Maintenance Group once they have been repaired and re-tested



- Ensure tests are performed properly
- Prepare reports. Testing and maintenance functions can be documented using the Nexus reporting functions. You can record all maintenance operations to satisfy requirements of Building & Life Safety Codes and plan future maintenance budgets through the use of an online log book
- Log test results and print them as required.

Nexus has been designed to enable maintenance personnel to easily maintain the emergency lighting system without having to walk through the building or disrupt the power supply. Nexus can test and report on the status of all emergency lights either individually, in groups or all together.

## WHY CHOOSE NEXUS?

There are many advantages of the Nexus system which can result in saving valuable time, money and resources.

### Labor Saving

To ensure compliance with Building & Life Safety Codes, testing of a building requires many hours of labor for qualified staff to manually inspect and test every emergency light unit and record the results in a log book. Manual testing is therefore very difficult and expensive to do on a large scale.

Nexus enables the user to remotely activate light units and retrieve status information. The units will automatically send their status to the server in real-time ensuring the server always has an accurate record of the units status. This information is then automatically stored in an electronic log book. Maintenance personnel need only attend to units that require maintenance.

### Maximize System Availability

Nexus can test and report on the status of an entire emergency lighting system within a building either individually, in groups or all together. By selectively alternating the grouping of the emergency light unit, the installation can be tested in stages so that not all of the emergency lighting of the building is in 'recovery mode' after a discharge test.

### Self Monitoring

Nexus is self-monitoring and in the event of cable damage, can indicate the location of the fault down to the particular branch, which could potentially save hours of manual fault finding. Faults are detected in real-time and reported instantly so there is no need for users to initiate a search for potential faults.





## Independent System

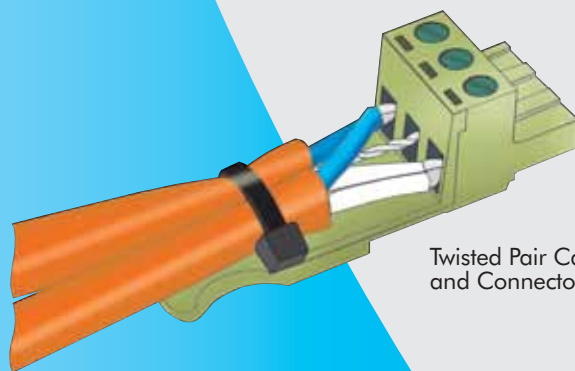
The operation of emergency lighting is not impeded by, nor dependent upon Nexus, which is simply used to monitor and remotely test the light units without the need to visually and individually sight them for testing. A Nexus light unit can be removed from or added anywhere within the Nexus network without interruption to the operation of the system.

## Data Integrity

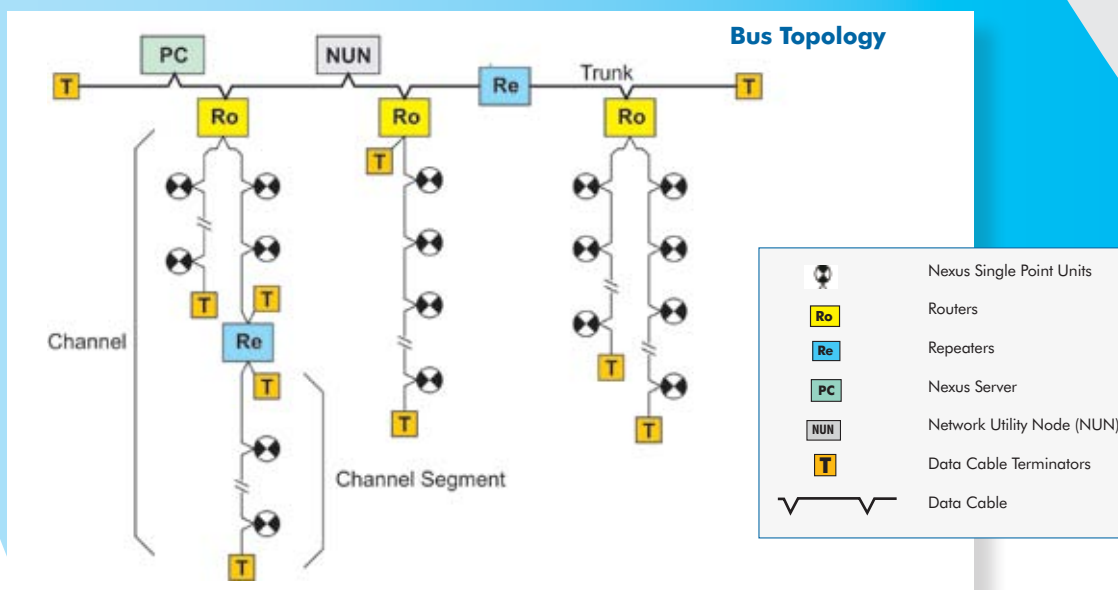
Data Integrity refers to the validity of data, which can be compromised by human error. Nexus can minimize these errors by automating processes and logging maintenance data. Nexus also enables easy, fast access to reliable data.

## Bus Topology

Nexus units are connected by a twisted pair data cable in a doubly terminated multi-drop bus topology. The signal is absorbed by terminators to prevent the reflection of signals back and forth on the bus which can distort the signal. The data conductors are not polarized, thereby making connection easy and reliable.



Twisted Pair Cable and Connector

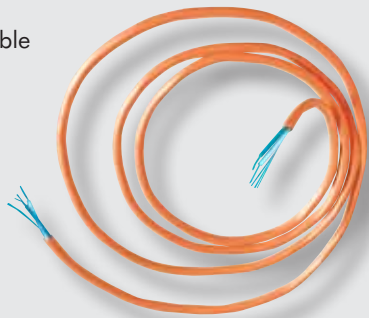


# WHY CHOOSE NEXUS?

## Single Twisted Pair Cable

The Nexus system requires a certain type of data cable to suit the data transmission characteristics of the network. Nexus uses a single shielded twisted pair cable as the network medium. The advantages of the data cable are:

- High communication speed (78kbps) enabling fast system updates
- Highly resistant to external interference
- Very reliable



## Easy to use Graphic User Interface

The Nexus software contains an easy to use Graphic User Interface which guides the user through a series of functions such as:

- Viewing unit status
- Scheduling tests
- Viewing & printing test results
- Maintaining an electronic log
- Accessing diagnostic tools



# HOW DOES NEXUS WORK?

Computerized emergency lighting systems are a combination of a communication network and emergency lights distributed throughout a building. Nexus communicates between the emergency light units and a centrally located server, usually a computer. The network can pass messages both to and from the emergency units to either:

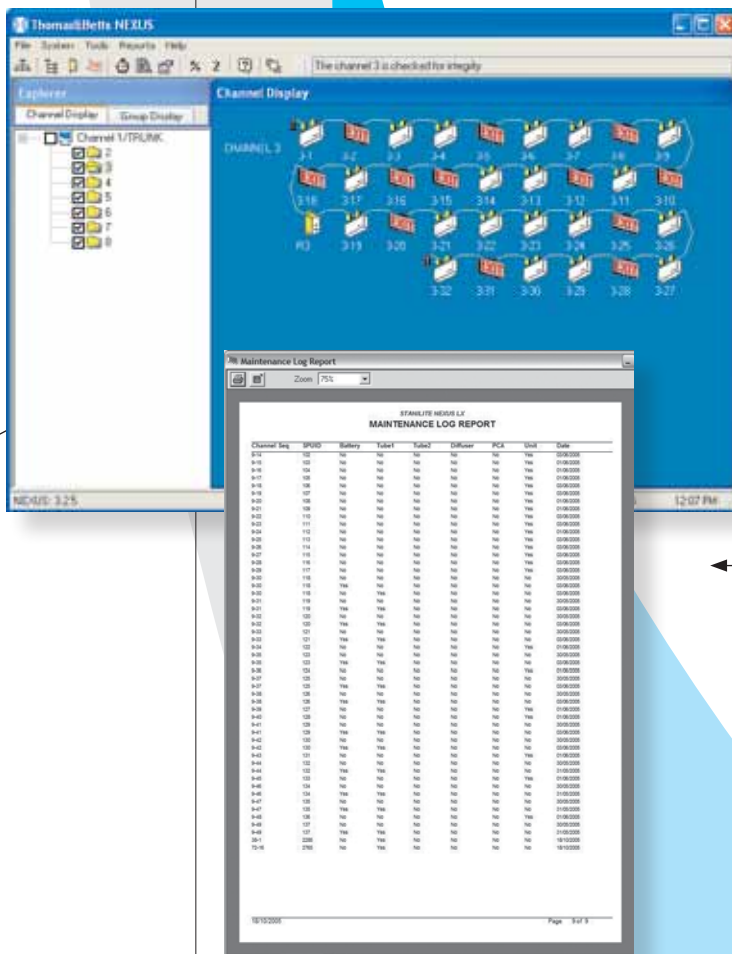
- instruct the units to perform a task - for example, turn on or off their emergency lamps, or
- report back to the server giving the unit's status – for example, whether the lamp is working or not

Computerized emergency lighting systems use a variety of means to communicate. The most common reliable method uses a dedicated communications cable wired between every emergency light unit and the server. The method of communication within the network, called the protocol, determines the way the communication cabling must be installed, connected and used.

## A Nexus Network consists of the following components:

1. Emergency light units connected together by a network of data cable and routers.
2. The Nexus server which performs network management and control functions and enables the user to perform the following tasks:

- **Schedule Tests** - making it easier to comply with the monthly inspection requirement
- **Reporting** -
  - Test Schedule – what is due to be tested and when
  - Test Results – discharge test results and most recent one-minute test
  - Characteristics – list of all installed SPU's (Single Point Units)
  - Work Instruction – every unit that failed the last test and main poll status
  - Router Locations
- **Maintain an electronic log book** - providing a means of recording service history and can be used as a tool to plan maintenance requirements such as re-lamping or battery replacement.
- **Access diagnostic tools** -
  - Poll Status Test – a scan of all units on the network allowing you to interpret which SPU's require attention
  - Channel Communication Test – to test the integrity of the Nexus network either by individual channel or by all routers.



A basic Nexus network is comprised of a trunk with one or more channels with UL rated level 4 shielded twisted pair data cable used as the transmission medium. Each channel is connected to the trunk by a router. The Nexus server and the network utility node are connected directly to the trunk. Repeaters can be used to extend both the trunk and channels as shown below.

Where a channel has been extended using a repeater, the channel is hereby broken up into channel segments. Each channel segment consists of a length of data cable terminated at either end of the cable.

A Nexus trunk can also be integrated into existing trunk networks such as Ethernet and Fiber Optics. This can also provide an easy method of connecting to remote sites with an existing LAN or WAN network.

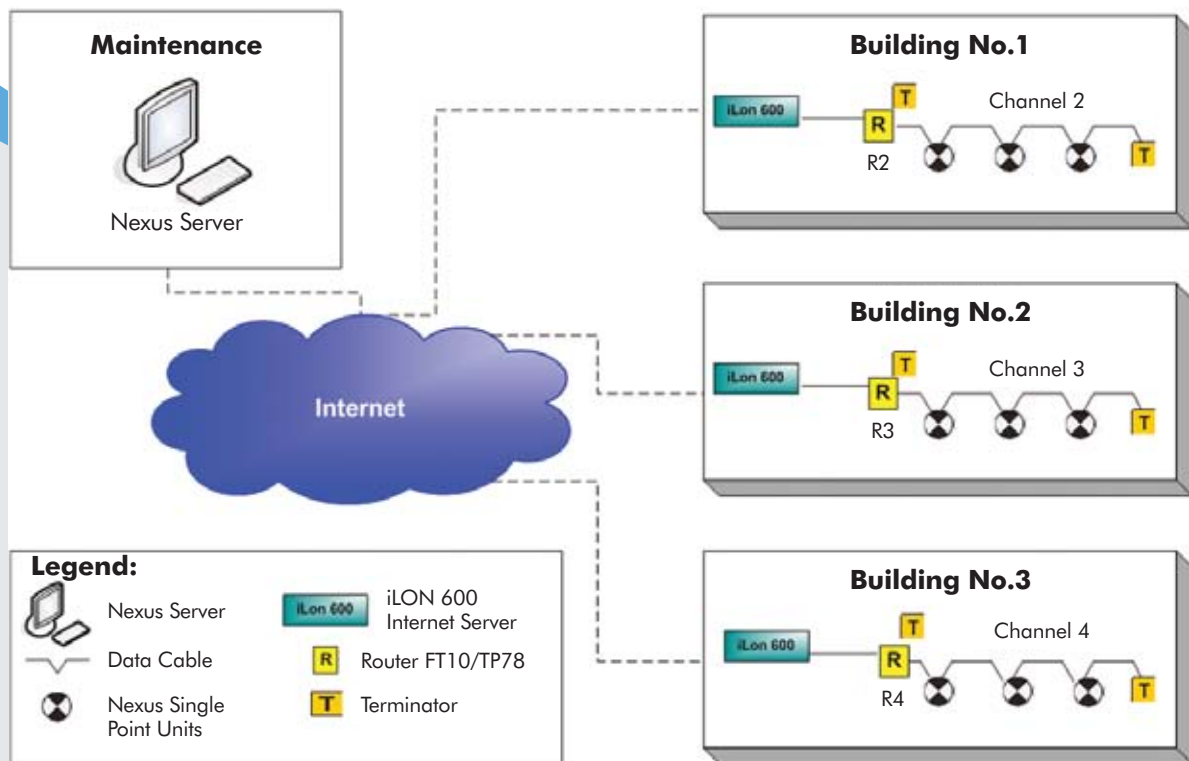
## Easy to Install

Licensed electricians will find Nexus easy to install. Generally an installation requires:

- Floor plan drawings
- Project specifications

Nexus specialists can be contacted at Thomas & Betts to assist with any installation queries.

## Connections with different buildings with iLon 600





## NEXUS PRODUCT RANGE

## OTHER NEXUS COMPONENTS

Other components available to complete the Nexus system include:

- Router – a device that connects a channel to the main trunk
- Repeater – a device that connects two segments of a channel together to extend the channel length or increase the number of nodes connected to the channel
- ilon 600 – a device that allows use of the internet network to extend a channel or to build the main network line (trunk) through a RJ-45 cable
- Server Pack & Software - complete PC pre-loaded with Nexus
- Network Utility Node – a device that is used in conjunction with the Network Utility Program to test the data communications of a Nexus network
- Data Cable and Data Cable Terminators.



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