User Guide

Sector™
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1. Introduction

Welcome to Sector: According to United States Department of Energy (USDOE), lighting typically constitutes 30% to 35% of a building’s total energy load. Leviton’s Sector family of products offers immediate energy savings by managing your lighting needs and reducing energy consumption in the most efficient and cost-effective way possible.

Sector combines several energy saving technologies – occupancy sensing, daylight harvesting and dimming – into one conveniently integrated system. This topology free system uses the same wiring type for all Sector components and accessories making it one of the easiest fluorescent lighting control systems to install. To further simplify installation, all components are located on a bus, with accessories connected to the network, not the ballast.

The Sector family of products provides a scalable solution that offers maximum flexibility and maximum coverage in any application – from a single room to a campus of buildings. And Sector's automatic and manual lighting control of specific areas and zones provides increased workplace productivity through improved ergonomic lighting qualities.

Reduce Energy Costs: Using the Leviton Sector Lighting Management system can reduce your energy costs from an estimated 34% to 60%.
1.1. Sector Components

**SectorNET Client Application Software**

- 1. Quick configuration and programming of a Sector network from any Windows XP based PC (x86, non 64 bit OS).
- 2. Intuitive, easy-to-use interface.
- 3. Network view for selection and setup of all Sector system devices.
- 4. Graphical view of project, building and floor components offers smart programming capabilities.

**Sector Intelligent Dimming Fluorescent Ballasts**

- 5. Continuous dimming offers higher energy savings and increased flexibility than traditional switching.
- 6. Dimming fluorescent ballasts allow 100% to 1% dimming capabilities in 1% increments.
- 7. Ballasts have a patent pending addressable labeling system for easy programming and personal lighting control.

**Sector Network Bus Controller**

- 8. Contains the brain and the power supply for the Sector system in one component.
- 9. Controls a maximum of 64 devices (including PC) on a loop with the ability to expand a system to include a maximum of 253 loops.

**Sector Network Occupancy Sensors**

- 10. Turns lights ON/OFF based on vacancy or occupancy.
- 11. Multi-technology and infrared models available.
- 12. Self-adjusting settings continuously analyze and adjust sensitivity, timer operation and long-term performance - reducing user complaints.

**Sector Network Photocell / IR**

- 13. Measures the amount of ambient light available in a space and lowers electric bills by reducing lighting usage when ambient light is sufficient.
- 14. Offers constant lighting at desired level for greater visual comfort.

**Sector Network Switch**

- 16. Manually overrides programming at the push of a button to meet the user’s needs.
- 17. 5-button (On, Max, Bright, Dim, Off) and 2-button (On, Off) models.

**Sector Handheld Remote**

- 19. Manually overrides programming at the push of a button to meet the user’s needs (On, Max, Bright, Dim, Off). Used with Photocell and wall switches.

**SectorNET USB to CAN Adapter**

- 20. Offers a secure data connection (Kvaser device) between SectorNET Client Application software and Sector Network Bus Controllers.
Sector Relay
• 21. Used for both switching only loads and dimming loads controllable with a 0-10V control signal.
• 22. 0-10V control signal.

Sector Low Voltage Interface
• 23. Allows integration of the Sector system with any switch or contact closure within an assigned area.
• 24. 5 inputs can be switches or commands.

Sector Occupancy and Photocell Interface
• 25. Allows integration of Sector system with non-Sector occupancy sensors and photocells.
2. Getting Help & Warnings

2.1. Online User Guide

A User Guide is provided via the Help Menu of the Client Application, see section 3.2.1.3.

2.2. Contacting Technical Support

If you cannot find answers in the User Guide, please contact Technical Support at www.leviton.com/les and we will be glad to answer your questions. You may also call us during regular business hours at 1-800-959-6004. Please have the model number available when you call.

Contact Information

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Customer Service: (800) 736-6682
Technical Support: (800) 959-6004
Fax: (503) 404-5601
Internet: www.leviton.com/les

2.3. Warnings

- To avoid fire, shock, or death; turn off power at circuit breaker or fuse and test that power is off before wiring Sector devices.

- Disconnect power when servicing fixture or changing lamps.

- Sector devices must be installed in accordance with appropriate local and national electrical codes and regulations.

- Sector devices to be installed by a qualified Electrician.

- Do not connect line voltage wires to low voltage terminals.

- Fluorescent lighting fixture and ballast must be grounded.

- Bus controller and all other devices which operate on line voltage must be grounded.

- If unsure about any part of these instructions, consult a qualified electrician.
3. SectorNET Client Application Software

SectorNET Client Application software is used by system installers and building managers for configuration and programming of a Sector system.

The software provides a Network View for system configuration and a customizable Graphical View of project, building and floor components for complete system layout and programming.

3.1. Installation

3.1.1. Computer Requirements

The SectorNET Client Application is designed to run on Microsoft Windows XP based computers (X86).

3.1.2. Setup Utility

The SectorNET Setup Utility is available via web download at www.leviton.com/sector. Only certified installers may have access to the SectorNET software. Please have your user code and password ready.

TIP: Remember to check regularly for software updates at the above website!

NOTE: During the SectorNET application installation, the following components must be installed during the installation process (if not previously installed):

• 1. Microsoft SQL Server Express
• 2. Microsoft .NET Framework (version 3.5 or higher)
• 3. Kvaser CAN device driver (for USB to CAN adapter)

1. Once the SectorNET Setup Utility is downloaded, locate and run setup.exe (located in the folder you downloaded the software to).
2. Select I Agree to accept license agreement.

3. Select Next.

4. Select Next to begin Setup Wizard:

5. Select destination folder location where SectorNET will be installed. (default is C:\Program Files\Leviton Mfg. Co\SectorNET). Select if you would like other users on the computer to have access to the program. Select Next:
6. Select **Next** to begin installation:

![Image of installation prompt](image)

7. Once complete, select **Close** to end installation.

### 3.1.3. Personal Dimming Option Software Installation

SectorNET Personal Dimming software will be installed on individual PC’s by a SectorNET administrator. Once installed, the user may configure the software to their personal requirements. See section 3.7.
3.2. SectorNET Configuration and Programming

This section explains SectorNET configuration and programming. For advanced SectorNET configuration, see section 3.6.

3.2.1. Menus

3.2.1.1. File Menu Options

Start a New Project
Press New to create a new project. See Initial Start Up, section 3.2.4 below.

Open a Saved Project
Press Open to open a saved project from within the Client Application database. See Initial Start Up, section 3.2.4 below.

Open From
Press Open From to open a saved project from a specific location (.scn file). See Initial Start Up, section 3.2.4 below.

Save As
Press Save As to save project to a specific location as a .scn file.

Exit
Press Exit to close program.

3.2.1.2. Tool Menu Options

Tool Menu

Network
Selecting Tool/Options/Network will display the following dialog box for setting the Subnet and PC Address of the computer running SectorNET:

For device addressing, please see section 3.2.5.9.
Valid Subnet values are from 0 - 253. Valid PC Address values are from 249 - 253 (maximum of five PCs for green friendliness).

**Debug Mode**

Selecting **Tool/ Options/ Debug Mode** will create a log of all selections and results to assist in diagnosing software bugs.

**KWH Setup**

Selecting **Tool/ Options/ KWH Setup** will export the system KWH data to a specified location.

**Version Warnings**

Selecting **Tool/ Options/ Version Warnings** enables/disables the version warning message. Selecting Version warning enabled, enables the version warning messages when the program version is not up to date. Selecting disabled, disables the warning message.

### 3.2.1.3. Help Menu Options

**User Guide**

Select to view online PDF version of User Guide.

**About**

Select to view software version number and copyright information.

### 3.2.2. Transferring SectorNET Data to Remote Computers

To transfer a SectorNET file to a remote computer, save the data as a `.scn` file on the source computer. See **Save As**.

Next, send the file to a specific location on the target computer (via network, USB drive, etc.).

Use the **Open From** command to open the `.scn` file from saved location on remote computer (SectorNET software must be installed on remote computer). See **Open From**.

### 3.2.3. Connecting Bus Controller to Computer

Before starting a new project connect the Bus Controller via the LumaCAN USB Adaptor to the computer. The software must detect the Bus Controller(s) in Live mode for successful system commissioning.
3.2.4. Initial Start Up

After starting a **New Project**, a dialog box will appear stating that a system interface has been detected.

Press **Yes** to connect to online Sector devices or if **No** is pressed the program will remain offline.

After opening a **Saved Project**, a dialog box will appear asking if you would like to detect a LumaCAN network.

Press **Yes** to connect to online Sector devices, or if **No** is pressed the program will remain offline.

**NOTE**  For more information about online (live) and offline modes, see section 3.5.

If **Yes** is pressed in the above instances, the software will display a list of connected live devices and their short address IDs (Device Discovery).

Press **Ok** to accept or **Cancel** to abort.

No IDs will appear if communication with devices fail, please see section 6.1 for more information on communication errors.

After the Device Discovery is complete, a dialog box will appear asking if a "**Pull all Data from the Network**" procedure should be performed. (This procedure will automatically transfer all data parameters of all live devices to the SectorNET software. Procedure may require a few minutes to transfer parameters.)

**NOTE**  A status bar, located at the bottom of the screen, indicates device communication progress and if the software is on or offline:

**TIP**  In order for an online ballast to appear live, it must be assigned a short address in the Ballast Setup screen, see section 3.6.2.2.
3.2.5. Network View

The Network View is where you select and configure Sector devices for your project.

For example, you can add bus controllers and assign lamp ballasts, photocells, occupancy sensors and switches to each bus controller on the network.

Device parameters can be quickly transferred between same-type devices by dragging the source device to the target device within the network tree view.

NOTE Offline devices are shown with a red slash . See section 3.5 for more information on Offline and Live modes.

3.2.5.1. Adding a Bus Controller

To add bus controller to a project, select (left-click) the project name at top of network tree, then press the icon.

Enter device name, then press Save.

Selecting Refresh (right-click) will update data of all live devices on the bus controller.

See section 3.6.2 for advanced bus controller configuration.

3.2.5.2. Adding a Ballast

To add a ballast to a bus controller, select (left-click) bus controller, then press the icon.

Enter device name, then press Save.

See section 3.6.3 for advanced ballast configuration.

3.2.5.3. Adding an Occupancy Sensor

To add an occupancy sensor to a bus controller, select (left-click) bus controller, then press the icon.

Enter device name, then press Save.

See section 3.6.4 for advanced occupancy sensor configuration.

3.2.5.4. Adding a Photocell/IR Sensor

To add a Photocell/IR Sensor to a bus controller, select (left-click) bus controller, then press the icon.

Enter device name, then press Save.

See section 3.6.5 for advanced Photocell/IR Sensor configuration.
3.2.5.5. Adding a Switch

To add a switch to a bus controller, select (left-click) bus controller, then press the icon.
Enter device name, then press Save.
See section 3.6.6 for advanced switch configuration.

3.2.5.6. Adding a Sector Relay

To add a sector relay to a bus controller, select (left-click) bus controller, then press the icon.
Enter device name, then press Save.
See section 3.6.3 for advanced ballast configuration.

3.2.5.7. Adding a Low Voltage Interface

To add a low voltage interface to a bus controller, select (left-click) bus controller, then press the icon.
Enter device name, then press Save.
See section 3.6.6 for advanced switch configuration.

3.2.5.8. Adding an Occupancy Sensor/Photocell Interface

To add an occupancy sensor/photocell interface to a bus controller, select (left-click) bus controller, then press the icon.
Enter device name, then press Save.
See section 3.6.4 for advanced occupancy sensor configuration and section 3.6.5 for advanced photocell/IR sensor configuration.

3.2.5.9. Setting Device Addresses

LumaCAN Address

Each bus controller must be assigned a LumaCAN Address in order to be identified on the network. Please see sections 3.6.2.1 and 4.2 for addressing methods.

SectorNET Short Address

Devices (occupancy sensors, switches, photocells, smart ballasts) must be assigned what is known as a SectorNET "Short Address" in order to be identified on the network. Please see sections 3.6.2 - 3.6.9 and 4.3 - 4.10 for addressing methods.

**NOTE** Each smart ballast also has a unique factory-programmed SectorNET "Long Address" assigned to it (located on a label affixed to the ballast housing). In order for an online ballast to appear live, it must be assigned a short address in the Ballast Setup screen, see section 3.6.2.2.
3.2.6. Graphical View

The Graphical View is where area, zone and device light levels and states may be programmed within imported graphical (JPEG) representations of building floorplans. Icons of areas, zones and devices can be placed on each floorplan for quick visual layout of, and access to, the SectorNET network. The areas, zones and devices can then be individually programmed by double-clicking on their respective icons. For example, by left-clicking on a ballast icon, a dialog box will appear in which you can adjust the ballast level.

There are two tree views within the Graphical View: The lower tree shows the current network tree and its devices. To add a device icon to the floorplan, simply drag the device from the lower tree to the floorplan. The upper tree represents components that have been added to the floorplan.

3.2.6.1. Adding a Building

To add a building to a project, press the icon. Enter building name in space provided, then press Save.

3.2.6.2. Adding a Floor and Floor Images

To add a floor to a building, select (left-click) the building in the upper tree view, then press the icon. To delete a floor, right-click on its image.

Enter the floor name in space provided and browse for desired background image (JPEG) to be imported as a floorplan representation. Press Save to confirm.

To delete a floor, right-click on its image then press Delete.

In the example below, various Sector areas, zones and device icons have been added to the floorplan. See Adding Icons to Floors, section 3.2.6.3 below.

**NOTE** An area, zone or device can be individually programmed by double-clicking its icon, see Programming Levels and States, section 3.3.
3.2.6.3. Adding Icons to Floor Images

To add icons of devices to their desired locations on the floorplan, drag them from the lower graphical tree view.

*NOTE* Area and zone icons are not dragged from lower tree view. To add an area or zone icon to the floorplan, drag a bus controller which has previously assigned areas or zones to the floorplan. The area or zone icons will appear on top of the bus controller icon and can be repositioned accordingly.

**Deleting Icons**

To delete an icon, right-click on it then press *Delete*.

**Icon Locking**

Once device icons are placed in position on the floorplan they may be locked in place by pressing the *Lock* icon.

To unlock devices icons for further placement, press *Lock* again.

**Icon Label**

Right-clicking on an icon will open a dialog box in which its *Label (Text, Font, Position)* may be edited.

Press *Ok* after editing or *Cancel* to abort.

Press *Delete* to remove icon from floorplan.
3.2.6.4. Adding a HotSpot to Floor Images

Hot Spots are highlighted areas that may be drawn within the imported floorplan image for further isolation of the floorplan.

To draw a hot spot within a floor image, select (left-click) the floor in the upper tree view, then press the icon. Next, drag the hot spot to desired size.

**Hot Spot Properties**

Right-clicking on a hot spot will bring up a dialog box in which the following hot spot properties can be edited: Edit Label, Link to Floor and Hot Spot color.

The hot spot can be locked in place within the floorplan image by pressing the dialog box Lock button.
3.3. Programming Levels and States

Programming of area, zone and device levels and states is performed in the graphical view.

To set levels and states, double-click on a device icon in the graphical view.

Assigning of area, zone and device levels and states to load shed selection is also performed in the graphical view.

3.3.0.1. Ballasts

Left-clicking on a Ballast icon on the graphical view floorplan will open a dialog box in which its individual light level can be adjusted:

3.3.0.2. Load Shed

Pre-configured Load Shed levels can be selected in the graphical view.

Select the area, zone or ballast desired, then press the Load Shed 1, Load Shed 2 or Load Shed 3 icon).

Press the Off icon to disable load shed of selected area, zone or ballast.

NOTE To configure load shed levels, see Ballast Configuration, section 3.6.3.
3.4. KWH Reporting

When KWH reporting is started the system will log KWH data which can be exported in csv format for importing into excel for analysis.

3.4.0.1. Data Reporting

Press the Green icon to start KWH reporting. Press the Red icon to stop KWH Reporting. Press the X icon to remove all stored KWH data. Press the ! icon to export KWH data.

3.4.0.2. KWH Chart Utility

Open the Chartkwh.exe application.

The report can be filtered by Project, by Bus Controller or by Area.

After selecting the filter type, select the project to report KWH data for and the dates to start and end reporting.

Press create chart to generate the chart.
3.5. Live and Offline Modes

Configuration and programming tasks can be performed in **Live** (online) mode only. Programming or updates performed in **Offline** mode will not be executed.

**NOTE** Offline devices are shown with a red slash in the network and graphical tree views. A status bar is located at the bottom of the application which indicates device communication progress and if the software is on or offline:

3.5.1. Live Configuration

Area, zone and device parameters may be configured in live (online) mode only.

In the example below, an occupancy sensor’s **PC Parameters** are being configured in Live mode in order to be transferred to an actual live online sensor (**Local Parameters**).

**NOTE** For individual device configuration, *see section 3.6.*

- Press  to transfer **PC Parameters** to **Local Parameters**.
- Press  to transfer **Local Parameters** to **PC Parameters**.
- Press  to save **PC Parameters** as default values.
- Press  to set **PC Parameters** to saved default values.
- Press  after device name change.

**TIP** Select **Push all Configuration Data to Network** (right-click on project name in network tree) to send all PC-based device parameters to live devices.
3.5.2. Live Programming

Area, zone and device levels and states can be programmed live (online) only. When live, all level and state adjustments occur instantaneously. To set levels and states, double-click on an icon in graphical view. In the example below, a ballast’s lighting level is being adjusted.

NOTE For more information on programming levels and states, see section 3.3.
3.6. Advanced SectorNET Configuration

3.6.1. New Project Setup

Select File/New or press the New icon to begin a new project. The following screen will appear where relevant project data can be entered:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Product Line(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commissioned Date</td>
<td>EMail</td>
</tr>
<tr>
<td>Acceptance Date</td>
<td>Notes</td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
</tr>
</tbody>
</table>

Press the Save button after data completion:

Once devices are assigned to your project, select Push all Configuration Data to Network (right-click on project name in network tree) to send all PC-based device parameters to live devices (individual device parameters can also be transferred via each device's configuration screen as explained in section 3.5.1).
3.6.2. Bus Controller Configuration

To add a bus controller, select the project name in the network tree view, then press the 
icon. You may also right-click the project name, then select **Add/ Bus Controller**.

Enter device name, then press **Save**.

The new bus controller will appear in the network tree as shown below.

![Network Tree](image)

Parameters can be transferred between bus controllers by dragging the source bus controller to the target bus controller within the network tree.

**TIP**

Selecting **Update Device Software** (right-click on bus controller) will update the controller's software code, please make sure you have the latest code before initializing the update.

Double-clicking a bus controller in the network tree will open up four tabs as shown below; **General Parameters**, **Ballast Setup**, **Area Assignments** and **Area Setup**:

3.6.2.1. General Parameters Screen

- **1.** Displays general parameters of selected bus controller.

![General Parameters](image)

**NOTE**

Press **Update** after making any changes.

**Device Type**

Displays the device type that is currently selected.

**Status**

If the Client Application is connected to a live SectorNET network, **Live** will be displayed in this area, otherwise the Client Application will be in **Offline** mode. See section 3.5 for information about Live and Offline modes.

**SubNetID**

Displays SectorNET SubNet number: Each bus controller belongs to a SubNet which is related to its LumaCAN address (see LumaCAN address below).

**Device Name**

Used to give the bus controller a specific name, for example, Reception Area. Enter the name in the space provided.
LumaCAN Address
Displays current LumaCAN address of the bus controller. The LumaCAN address is set via three rotary switches located on the bus controller.

Version Number
Displays current version number of the device.

Product Line
Displays name of product line.

3.6.2.2. Ballast Setup Screen
• Displays list of ballasts which are assigned to selected bus controller. Lamp Hour life (elapsed) of each lamp is also displayed.

Press the All On or All Off buttons to turn on or off all lamps which have ballasts assigned to the bus controller.

Press Burn In All to burn-in (season) all lamps which have ballasts assigned to the bus controller.

Press Burn In None to deactivate burn-in.

Double clicking on a ballast (highlighted in cyan as shown above) will open up the following screen in which additional ballast parameters and features may be accessed:

The ballast's lamp Burn-In functions may be selected.

The ballast’s Short Address and Device Name may be modified.

TIP
Make sure to give the ballast a short address in order for an online ballast to appear live in the network and graphical tree views!

Lamp Locate Functions
• Used for individual lamp location purposes.
Press the **Flash** button to blink lamp on and off.

Press the **Solo** button to only light selected lamp while turning off all other lamps assigned to the bus controller.

**NOTE**  
See Test Mode, section 4.2.3 for other lamp and device location methods.

### 3.6.2.3. Area Assignments Screen

- Displays list of available area devices assigned to selected bus controller and to which areas devices are assigned.

**NOTE**  
Ballasts are not assigned in the Area Assignments screen. They must first be assigned to a group, see Ballast Configuration, section 3.6.3. The ballast group is then assigned to a zone in the Area Setup screen, see section 3.6.2.4.

To assign a device (except ballast, see note above) to an area, select the device from the **Area Devices** section then drag it to desired Area (1-8).

To remove a device from an area, select the device then drag it back to the **Area Devices** section.

**NOTE**  
For more information on areas, see section 3.6.2.4 and section 5.1.

In the example below, OSC-11, Photocell-12 and Switch-10 have been assigned to Area 8:

 Offline devices are shown with a red slash.

**TIP**
Always assign devices to areas before assigning zones and groups to areas (zones and groups are assigned in the Area Setup Screen, see next page).
3.6.2.4. Area Setup Screen

5. Displays area, zone and group setup options. Press the **Advanced** button to view and configure additional features. Press the **Basic** to return to the regular view.

Note that certain features will only be visible in this screen depending if they have already been assigned to areas in the Area Assignments screen (for example, photocells and occupancy sensors), or if they are enabled (for example, Blink Warn).

Areas, Zones and Groups Assigning

6. A Bus Controller is divided into separate partitions known as **Areas**, with each Bus Controller supporting eight Areas.

7. Each Area is further divided into six **Zones**.

8. Each Zone may be associated with a **Group**. 32 ballast groups are available for selection.

Assigning Areas to a Bus Controller

Before assigning zones and groups, an area must be assigned to the bus controller: Please select the Area number from area drop-down menu.

Assigning Zones to an Area

To assign a zone to an area, select the desired zone number (to remove, select None). You can then assign a group to a zone as described below.

Assigning Groups to a Zone

To assign a group to a zone, select the ballast group from the zone’s drop-down menu.

**NOTE** Ballasts must be assigned to a ballast group, see **Ballast Configuration, section 3.6.3**.

**NOTE** See example layout in **section 5.1** for more information on areas, groups and zones.
Daylight Compensation
Set level of zone as a percentage (0-100%) of the maximum lighting level as defined for the photocell (see Photocell section below).

**Tip** Zones farther away from an ambient light source (for example, a window) would have a higher compensation level than closer zones.

Daylight Harvesting
Set amount of time (0-240 min.) that Daylight Harvesting will be overridden when Max, Bright or Dim is selected on a switch or via switch IR. See section 4.6 for more information on switches.

Photocell
The below photocell parameters can be viewed and adjusted only after the photocell has been assigned to an area in the Area Assignments Screen, see section 3.6.2.3.

- **Target (fc%)**
Enter the target level (in fc%) to be maintained by daylight harvesting.

**Note** The level of each zone within an area can be individually adjusted as percentage of this value, see Daylight Compensation section above.

- **Dead Band (fc)**
Set range in which the Target (fc) will operate. For example, if the Target (fc) value is 50, a Dead Band (fc) value of 5 will allow the Target (fc) to operate between 45-55 footcandles.

- **Response Time**
Select photocell’s response time.

**Response Time Options**
- 10. Fast: 30 seconds.
- 11. Slow: 30 minutes.

**Note** Response time may also be set via the photocell’s onboard DIP switches, see section 4.5.3.1.

Loop
The photocell will operate in a Open Loop or Closed Loop daylight harvesting mode:

- 12. In open loop mode, the photocell will sense the amount of light coming in through the skylight or windows.
- In closed loop mode, the photocell will sense the amount of artificial light in the room.
**Blink Warn Enable/Disable**

Select whether the zone will send a Blink Warn message to indicate upcoming area lighting shutdown. See Blink Warn Parameters section below to change parameters.

*NOTE* Blink Warn parameters can be viewed and adjusted only when Blink Warn is enabled.

**Blink Warn Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Override Time</td>
<td>Set amount of time specified to override Blink to Off Time (below).</td>
</tr>
<tr>
<td>Blink to Off Time</td>
<td>Set amount of time the area lighting will Blink To Warn of upcoming area lighting shutdown.</td>
</tr>
</tbody>
</table>

**Occupancy Sensor Mode**

Select type of On mode (Auto or Manual) for the occupancy sensor.

*NOTE* The occupancy sensor’s mode parameters can be viewed and adjusted only after it has been assigned to an area in the Area Assignments Screen, *see section 3.6.2.3.*

**LumaCAN Channel**

A LumaCAN channel is a single dimmer control channel on a LumaCAN network. Enter channel number in space provided (0-255).

**LumaCAN Control Groups**

A LumaCAN Control Group is a collection of dimmer channels that can be controlled as a whole with a single LumaCAN message. Enter data in space provided.

**LumaCAN Room**

If needed, enter the associated LumaCAN Room number on the LumaCAN network.

**Switching Mode**

In switching mode 6 threshold levels may be set to balance lighting levels with available daylight. When switching mode is selected the Learn button will appear. The learn function will automatically set the threshold levels based on existing system configuration data.
3.6.3. Ballast Configuration

To add a ballast to a bus controller, select the bus controller in the network tree view, then press the icon. You may also right-click the bus controller then select Add/Ballast.

Enter device name, then press Save.

The new ballast will appear in the network tree as shown below.

**NOTE** Parameters can be transferred between ballasts by dragging the source ballast to the target ballast within the network tree.

Double-clicking the ballast in the network tree will open the ballast configuration screen. Press Save after making any changes.

**NOTE** In Standard mode, only the group number will be transferred from PC to Local Parameters.
3.6.3.1. Device Type

Displays the device type that is currently selected.

3.6.3.2. Status

If the Client Application is connected to a live SectorNET network, **Live** will be displayed in this area, otherwise the Client Application will be in **Offline** mode. See section 3.5 for information about Live and Offline modes.

3.6.3.3. Long Address

Displays the unique long address of the ballast, which is factory programmed in the ballast and cannot be altered.

**NOTE** The long address is also marked on a three part label located on the ballast.

3.6.3.4. Device Name

Used to give the ballast a specific name, for example, Corner Office. Enter the name in the space provided.

3.6.3.5. Short Address

Displays the current short address of the ballast. The ballast’s short address can be set in the Ballast Setup screen, see section 3.6.2.2.

3.6.3.6. Version Number

Displays current version number of the device.
3.6.3.7. Product Line
Displays name of product line.

3.6.3.8. Parameters

Group
Used to assign the ballast to a particular ballast group (1-32).

Last Known Level
Select this option if ballast is to be returned to programmed values immediately when system is turned on.

Panic Level
Set lighting level at which light will operate under urgent conditions.

Fade Curve
Select fade curve type (voltage output in relation to light level).

Max
Set maximum level at which light will operate (59-100%).

Min
Set minimum level at which light will operate (1-39%).

Load Shed
Used to enable or disable load shedding of ballast. Three load shed levels may be pre-configured (Load Shed Limit 1, Load Shed Limit 2, or Load Shed Limit 3).

NOTE See section 3.3.0.2 for more information on load shedding.

Load Shed Limit 1
Used to set level of Load Shed Limit 1 (0-100%).

Load Shed Limit 2
Used to set level of Load Shed Limit 2 (0-100%).

Load Shed Limit 3
Used to set level of Load Shed Limit 3 (0-100%).

Blink Warn
Used to enable or disable ballast to respond to Blink Warn option as defined in the Area Setup Screen, see section 3.6.2.4.

Blink Time
Used to set amount of time light will blink before shutdown if Blink Warn above is enabled.

Personal Dimmer Override Time
Used to set amount of time that a Personal Dimmer will be allowed to override pre-programmed levels and times defined for the ballast.

NOTE For more information on personal dimming, see section 3.7.
**Bus Failure**

If enabled, ballast will operate if bus failure communication occurs.

**Bus Failure Level**

Used to set level at which ballast will operate if bus failure occurs (**Bus Failure** option must be enabled, see above).

**Analog Input**

Used to enable ballast’s 0-10V input control signal.

**Power On Level**

Used to set level at which ballast will operate when powered up after a loss of power.

*NOTE*  
See section 4.3 for more information on ballasts.

### 3.6.4. Occupancy Sensor Configuration

To add an occupancy sensor to a bus controller, select the bus controller in the network tree view, then press the icon.

Enter device name, then press **Save**.

The new occupancy sensor will appear in the network tree as shown below.

*NOTE*  
Parameters can be transferred between occupancy sensors by dragging the source occupancy sensor to the target occupancy sensor within the network tree.

Double-clicking the occupancy sensor in the network tree will open the sensor configuration screen. Press **Save** after making any changes.
3.6.4.1. Device Type
Displays the device type that is currently selected.

3.6.4.2. Status
If the Client Application is connected to a live SectorNET network, **Live** will be displayed in this area, otherwise the Client Application will be in **Offline** mode. *See section 3.5 for information about Live and Offline modes.*

3.6.4.3. Device Name
Used to give the occupancy sensor a specific name, for example, Hallway. Enter the name in the area provided. The default name is the short address of the device.

3.6.4.4. Short Address
Displays the current short address of the occupancy sensor. The short address is physically set on the device itself via two rotary address switches.

3.6.4.5. Version Number
Displays current version number of the device.

3.6.4.6. Product Line
Displays name of product line.

3.6.4.7. Parameters

**Tech Mode**
Used to select type of occupancy sensor being utilized:
- **Multi** for dual-purpose sensors which combine passive infrared (**PIR**) motion detection and ultrasonic (**US**) capabilities.
- **Single** for individual passive infrared or ultrasonic sensors.

**Sensor Mode**
Used to select type of sensor if Single is selected in Tech Mode (see above).

**Auto Adapting**
If **Enabled**, the occupancy sensor will automatically return to programmed operation when false-on or false-off conditions occur or if sensor is left in test mode.

**Walk-Through**
If **Enabled**, occupancy sensor will automatically turn on lamp when a person enters a space and turn off when a person exits.

**Time Out**
Used to set time lamp will remain on after a person exits a space when **Walk-Through** is **Enabled**.

**Ultrasonic (US) Sensitivity**
Used to set level of sensor’s ultrasonic sensitivity. Valid range is from 1-100%.

**Passive Infrared (PIR) Sensitivity**
Used to set level of sensor’s PIR sensitivity. Valid range is from 1-100%.
**Hold Off Light Level**
Light will only operate above threshold. Valid range is from 1-100%.

**Test Mode**
Selecting **Enable** will allow sensor to respond to Bus Controller Test Mode commands.

*NOTE*  
See section 4.2.3 for information about Test Mode.

**LED**
If **Disabled**, ultrasound and PIR LED's on device will not illuminate.

*NOTE*  
See section 4.4.4 for more information on occupancy sensor LED’s.

*NOTE*  
See section 4.4 for more information on occupancy sensors.

*NOTE*  
Advanced features are for future use and are not active at this time.

### 3.6.5. Photocell / IR Configuration

To add a Photocell / IR to a bus controller, select the bus controller in the network tree view, then press the **icon**.

Enter device name, then press **Save**.

The new Photocell / IR will appear in the network tree as shown below.

*NOTE*  
Parameters can be transferred between Photocell / IR devices by dragging the source Photocell / IR device to the target Photocell / IR device within the network tree.

Double-clicking the Photocell / IR in the network tree will open the Photocell / IR configuration screen. Press **Save** after making any changes.
3.6.5.1. **Device Type**

Displays the device type that is currently selected.

3.6.5.2. **Status**

If the Client Application is connected to a live SectorNET network, **Live** will be displayed in this area, otherwise the Client Application will be in **Offline** mode. See section 3.5 for information about Live and Offline modes.

3.6.5.3. **Device Name**

Used to give the Photocell / IR a specific name, for example, East Window. Enter the name in the area provided. The default name is the short address of the device.

3.6.5.4. **Short Address**

Displays the current short address of the Photocell / IR. The short address is physically set on the device itself via two rotary address switches.

3.6.5.5. **Version Number**

Displays current version number of the device.

3.6.5.6. **Product Line**

Displays name of product line.

3.6.5.7. **Parameters**

**Sensor Type**

Used to select single (photocell only) or dual sensor (photocell and IR receiver) operation.

**Sensor Location**

Used to select side or center photocell sensor location on device.

**Range Control**

Used to select range sensitivity of IR receiver.

**IR Mode**

Used to **Enable** IR receiver on device, if equipped.

**LED**

If **Disabled**, photocell LED on device will not illuminate.

**NOTE**  
See section 4.5.2 for more information about Photocell / IR LED's.

**Weighting**

Used to select degree (in percent) between side or center photocell sensor sensitivity.

**NOTE**  
See section 4.5 for more information on Photocell / IR's.
3.6.6. Switch Configuration

To add a switch to a bus controller, select the bus controller, then press the switch icon.
Enter device name, then press Save.
The new switch will appear in the network tree view as shown below.

Parameters can be transferred between switches by dragging the source switch to the target occupancy switch.

Double-clicking the switch in the network tree will open the switch configuration screen. Press Save after making any changes.

3.6.6.1. Device Type
Displays the device type that is currently selected.

3.6.6.2. Status
If the Client Application is connected to a live SectorNET network, Live will be displayed in this area, otherwise the Client Application will be in Offline mode. See section 3.5. for information about Live and Offline modes.

3.6.6.3. Device Name
A switch can have a specific name, for example, North Wall. Enter the name in the area provided. The default name is the short address of the device.

3.6.6.4. Short Address
Displays the current short address of switch. The short address is physically set on the device itself via two rotary address switches.
3.6.6.5. Version Number
Displays current version number of the device.

3.6.6.6. Product Line
Displays name of product line.

3.6.6.7. Parameters

IR Mode
Used to Enable IR receiver on device, if equipped.

Buttons
Used to configure actions of individual buttons on switch:
- **On** and **Off** for **2-Button** switches,
- **On**, **Off**, **Max**, **Bright** and **Dim** for **5-Button** switches.

**NOTE** See section 4.6 for more information on switches.

3.6.7. Relay Configuration
see section 3.6.3 Ballast Configuration for information on Relay configuration.

3.6.8. Low Voltage Interface Configuration
see section 3.6.6 Switch Configuration for information on Low Voltage Interface configuration.

3.6.9. Occupancy Sensor and Photocell Interface Configuration
see section 3.6.4 Occupancy Sensor Configuration and section 3.6.5 Photocell/IR Configuration for information on Occupancy Sensor and Photocell Interface configuration.
3.7. Personal Dimmer

The **Personal Dimmer** software application offers lighting control for each individual within a workspace. For example, the user can set custom lighting levels and recall pre-programmed lighting scenes. The software application can be installed on any PC connected to the Sector system, see section 3.1.3 for more information.

To create a Personal Dimmer, right-click on a ballast in the network tree view and select **Create Personal Dimmer**:

![Personal Dimmer window](image)

Select PC Name, Control Type (ballast or zone) and Node Name then press **Add**. Next, press **Generate File** to save a .scn file which can then be transferred to desired user's personal computer.
4. Sector System Devices

4.1. Network Specifications

<table>
<thead>
<tr>
<th></th>
<th>SectorNET</th>
<th>LumaCAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max # Devices</td>
<td>64</td>
<td>253</td>
</tr>
<tr>
<td>Network Topology</td>
<td>Any</td>
<td>Daisy-chained</td>
</tr>
<tr>
<td>Wire Type</td>
<td>18AWG or larger</td>
<td>CAT5</td>
</tr>
<tr>
<td>Max # of SectorNET Areas / LumaCAN Rooms</td>
<td>8</td>
<td>250</td>
</tr>
<tr>
<td>Bus Controller input power</td>
<td>120-277VAC, 50/60Hz 0.5A</td>
<td>-</td>
</tr>
<tr>
<td>Run Length CAT5</td>
<td>-</td>
<td>2500’</td>
</tr>
<tr>
<td>Run Length 14 -18 AWG Solid or Stranded</td>
<td>1,000’</td>
<td>-</td>
</tr>
</tbody>
</table>

4.2. Bus Controller

A Bus Controller is capable of controlling 64 individual devices (ballasts, occupancy sensors, photocells, etc.).

The bus controller communicates with each device using SectorNET protocol with a maximum of 64 bus controllers allowed in a SectorNET network.

Each bus controller connects to the SectorNET bus via class 1 wiring. Power to the bus controller is supplied by line voltage.

For SectorNET bus controller configuration, see section 3.6.2. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).

4.2.1. Addressing

Bus Controllers are compatible with the LumaCAN protocol specification and can be assigned an address on a LumaCAN network via three rotary switches located on front of device (valid range between 1 and 254).

4.2.2. Reset

Pressing the Reset Button (located on front of device) will re-initiate boot-up process (process will take 30 sec. to 5 minutes depending on how many devices are on the system).

4.2.3. Test Mode (Locating Devices)

Test Mode is a method for testing and locating devices in order to aid in isolating fault conditions.

1. Momentarily press the Black Test Button located on the right hand side of the bus controller. This will initiate a locate command to all devices on the network.
2. Each device associated with the bus controller will visually identify itself in the manner outlined in the following chart.

<table>
<thead>
<tr>
<th>Device</th>
<th>Method of Identification</th>
<th>Additional Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch</td>
<td>A concealed LED, in the lower right corner of the faceplate, will continuously flash.</td>
<td>None</td>
</tr>
<tr>
<td>Occupancy Sensor</td>
<td>The yellow LED will continuously flash.</td>
<td>None</td>
</tr>
<tr>
<td>Ballast/Fixture</td>
<td>The ballast will slowly dim the light output of the fixture and then fade up at same rate of speed.</td>
<td>Pressing the test button a second time will start feature.</td>
</tr>
<tr>
<td>Photocell</td>
<td>The yellow LED will continuously flash.</td>
<td>None</td>
</tr>
</tbody>
</table>

3. Test mode will broadcast an on and minimum level to all ballasts connected, and send location requests to all other devices for 15 minutes.

4. A second press of test button within 15 minutes will set all ballast levels to on and full and terminate the 15 minute timer.

5. After 15 minutes, all dimmed ballasts will return to previous state

6. To exit test mode, press and hold the test button for 5 seconds. Release the button and the system will restore to normal operation.

4.2.4. Network Termination

The Blue Termination Button (located on right side of device) must be pressed in on the last bus controllers on both ends of a LumaCAN network.

4.2.5. LED Status

Three status LED's are located on the front of the device:

4.2.5.1. Red

The Red LED indicates the following:

7. Steady when power is supplied to the bus controller.

8. Flash slowly when bus is in standby.

9. Flash quickly when the Sector system is in Locate (Test) mode.

10. Off when supply voltage is absent.

4.2.5.2. Yellow

The yellow LED indicates the following:

11. Off indicates the Sector system is in Locate (Test) mode.

12. Flash quickly indicates bus activity without errors.

13. A quick flash every 5 seconds indicates no bus activity.

14. Slow, steady flash indicates bus communications error.

15. Rapid bright flashing every 2 seconds indicates a duplicate address.

4.2.5.3. Green

Indicates device is connected to an active LumaCAN network. Flashes as per LumaCAN protocol specifications.
4.3. Ballasts

4.3.1. Smart Ballasts

A **Smart Ballast** is a dimmable electronic ballast that provides two-way communication using Leviton SectorNET protocol.

Each Smart Ballast connects to the SectorNET bus via class 1 wiring. Power to the Smart Ballast is supplied by line voltage.

The ballast also offers communication via DALI open protocol and can operate as a 0-10V ballast where needed.

**NOTE** For SectorNET ballast configuration, see section 3.6.3. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).

4.3.2. Addressing

Each smart ballast has a unique factory-programmed SectorNET **Long Address** located on a label affixed to the ballast housing.

The ballast’s **Short Address** can be set in the **Ballast Setup Screen**, see section 3.6.2.2.

4.3.3. 0-10V Ballasts

**Standard 0-10V Ballasts** may be used in a Sector installation. Each 0-10V ballast is controlled via a **Sector Relay**, see section 4.10
4.4. Occupancy Sensors

Leviton's wall and ceiling-mounted occupancy sensors use passive infrared and/or ultrasonic sensing technology to signal SectorNET when a space is in use. Each occupancy sensor connects to the SectorNET bus via class 1 wiring. Power to the occupancy sensor is supplied by the SectorNET bus.

NOTE
For SectorNET occupancy sensor configuration, see section 3.6.4. See Sector Device Installation sheet (Leviton part # PK-93649-10-02-0A for installation instructions.

4.4.1. Passive Infrared (PIR)

Upon room entry, the infrared sensor detects motion and turns lights on. The sensor is sensitive to the heat emitted by the human body. To trigger the sensor, the source of heat must move from one zone of sensing to another. Non-moving heat emitting objects will not cause the lights to turn on.

4.4.2. Multi Technology (Ultrasonic / PIR)

Dual technology occupancy sensors combine passive infrared (PIR) motion detection and ultrasonic motion detection for maximum sensitivity. Upon room entry, the infrared sensor detects motion and turns lights on. The ultrasonic sensor keeps lights on even with very minor motion.

4.4.3. Addressing

The occupancy sensor’s SectorNET Short Address is physically set on the device via two rotary address switches located under cover (valid range between 1 and 64).

4.4.4. LED Status

4.4.4.1. Red

Flashes to indicate PIR activity.

4.4.4.2. Yellow

The yellow LED indicates the following:

• 16. Rapid flashing indicates the device is in Locate mode.
• 17. A quick flash every 5 seconds indicates no bus activity.
• 18. LED Off indicates bus activity without errors.
• 19. Slow, steady flash indicates bus communications error.
• 20. Rapid bright flashing every 2 seconds indicates a duplicate address.

4.4.4.3. Green

Flashes to indicate ultrasonic activity.
4.4.5. Controls

The functional parameters and behavior of the occupancy sensor and photocell can be adjusted locally at the sensor or in the Client Application and uploaded to the device.

4.4.5.1. Knob Settings

NOTE The knob controls (located under cover) on the device will relinquish control and become inactive upon on network commands from the Client Application and on power-up/reset.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green: Ultrasonic Sensitivity</strong></td>
<td>Sets ultrasonic range</td>
<td>Sensor analyzes room and sets sensitivity to optimal setting</td>
<td>Air currents False-on occurrence False-off</td>
<td>Linear range setting Full CCW = min (off) Full CW = max</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Red: PIR Sensitivity</strong></td>
<td>Sets passive infrared range</td>
<td>Same as above</td>
<td>Room (surface) temp Lens dirt Signal to noise ratio</td>
<td>Same as above</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Black: Timer</strong></td>
<td>Sets the length of time lights will remain on after last motion is sensed</td>
<td>Timer setting generally increased during learning period, then decreases to minimize <em>on</em> time</td>
<td>False-off occurrences Error free operation decreases the timer setting</td>
<td>Linear range setting Full CCW = min. Full CW = max (30 min)</td>
<td>100% for Auto-Adaptive mode</td>
</tr>
<tr>
<td><strong>Blue: Photocell</strong></td>
<td>Sets level of daylight needed to prevent lights from turning on</td>
<td>No automatic operation</td>
<td>N/A</td>
<td>Linear range setting Full CCW = min daylight Full CW = max (off)</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.4.5.2. Dip Switch Settings

NOTE The dip switches (located under cover) on the occupancy sensor will relinquish control and become inactive upon on network commands from the Client Application and on power-up/reset.

<table>
<thead>
<tr>
<th>DIP Switch Number</th>
<th>Function Name</th>
<th>ON Position</th>
<th>OFF Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Override</td>
<td>Force the B2 State</td>
<td>Auto Mode</td>
</tr>
<tr>
<td>B2</td>
<td>Forced State</td>
<td>Lights Forced OFF</td>
<td>Lights Forced ON</td>
</tr>
<tr>
<td>B3</td>
<td>Test Mode</td>
<td>Test Mode ON</td>
<td>Test Mode OFF</td>
</tr>
<tr>
<td>B4</td>
<td>LED</td>
<td>LED’s Disabled</td>
<td>LED’s Enabled</td>
</tr>
</tbody>
</table>
4.5. Photocell / IR

Leviton's photocell daylight sensor is used for daylight harvesting, thus allowing SectorNET to automatically lower the lighting when the available daylight level is high, and raise the lighting when the available daylight level is low (light levels are adjusted to take into account the amount of ambient daylight).

When daylight harvesting is active, the lights may appear dim when directly looked at. However, you will find that the working light level in your area will remain at a user-defined level throughout the day.

A Photocell / IR (Infrared) sensor provides reception of IR transmitting devices (such as an IR Handheld Remote Control) in addition to daylight sensing capabilities.

Each Photocell / IR sensor connects to the SectorNET bus via class 1 wiring. Power to the Photocell / IR sensor is supplied by the SectorNET bus.

For SectorNET Photocell / IR configuration, see section 3.6.5. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).

4.5.1. Addressing

The Photocell / IR sensor’s SectorNET Short Address is physically set on the device via two rotary address switches located under cover (valid range between 1 and 64).

4.5.2. LED Status

4.5.2.1. Red

Flashes to indicate active IR communication.

4.5.2.2. Yellow

The yellow LED indicates the following:

• 21. Rapid flashing indicates the device is in Locate mode.
• 22. A quick flash every 5 seconds indicates no bus activity.
• 23. LED Off indicates bus activity without errors.
• 24. Slow, steady flash indicates bus communications error.
• 25. Rapid bright flashing every 2 seconds indicates a duplicate address.

4.5.3. Controls

The functional parameters and behavior of the Photocell / IR sensor can be adjusted locally at the sensor or in the Client Application and uploaded to the sensor.
4.5.3.1. Dip Switch Settings

The dip switches (located under cover) on the Photocell / IR sensor will relinquish control and become inactive upon network commands from Client Application and on power-up/reset.

<table>
<thead>
<tr>
<th>Dip Switch Number</th>
<th>Function Name</th>
<th>ON Position</th>
<th>OFF Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Override</td>
<td>Force the B2 State</td>
<td>Normal Mode</td>
</tr>
<tr>
<td>B2</td>
<td>Forced State</td>
<td>Lights Forced OFF</td>
<td>Lights Forced ON</td>
</tr>
<tr>
<td>B3</td>
<td>Test Mode</td>
<td>Test Mode ON</td>
<td>Test Mode OFF</td>
</tr>
<tr>
<td>B4</td>
<td>Range</td>
<td>Low (0-25 fc)</td>
<td>High (0-100 fc)</td>
</tr>
</tbody>
</table>

4.6. Switches

Sector **Digital Switches** are available in **2-Button** and **5-Button** models.

An IR (Infrared) Sensor, located on the switch, provides reception of IR transmitting devices in addition to switching capabilities.

Each switch connects to the SectorNET bus via class 1 wiring. Power to the switch is supplied by the SectorNET bus.

For SectorNET switch configuration, see section 3.6.6. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).

**2-Button Switches** provide two states of operation, **On** and **Off**.

**5-button Switches** provide five states of programmable operation, **On**, **Max**, **Bright**, **Dim**, and **Off**.

Tapping the On, Max and Off buttons once will fade level to desired state. Pressing and holding the Bright and Dim buttons will rapidly bring level to desired state.

<table>
<thead>
<tr>
<th>Button Name</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Turn on daylight harvesting mode.</td>
</tr>
<tr>
<td>Max</td>
<td>Full level (100%).</td>
</tr>
<tr>
<td>Bright</td>
<td>User defined level (typically less than Max).</td>
</tr>
<tr>
<td>Dim</td>
<td>User defined level (typically a low to mid level).</td>
</tr>
<tr>
<td>Off</td>
<td>Zero level (0%).</td>
</tr>
</tbody>
</table>

The functional parameters and behavior of the switch can be adjusted in the Client Application and uploaded to the switch.

4.6.1. Addressing

The switch's SectorNET **Short Address** is physically set on the device via two rotary address switches located under switch (valid range between 1 and 64).
4.6.2. LED Status

4.6.2.1. Yellow

The yellow LED (concealed) indicates the following:

• 26. Rapid flashing indicates the device is in Locate mode.
• 27. A quick flash every 5 seconds indicates no bus activity.
• 28. LED Off indicates bus activity without errors.
• 29. Slow, steady flash indicates bus communications error.
• 30. Rapid bright flashing every 2 seconds indicates a duplicate address

4.7. Handheld Remote

The **Handheld Remote Control** allows lighting control within 25 feet (100º angle) of compatible Leviton IR-receiving devices. Manually overrides programming at the push of a button to meet the user's needs (On, Max, Bright, Dim, Off).

4.8. Low Voltage Interface

The **Low Voltage Interface** allows integration of the Sector system with any non-Sector switch or contact closure within an assigned area. The LV Interface has the ability to assign commands and has 5 switch inputs that can be switches or commands.

**NOTE** For SectorNET switch configuration, *see section 3.6.6*. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).

4.9. Occupancy Sensor and Photocell Interface

The **Occupancy Sensor and Photocell Interface** allows integration of the Sector system with any non-Sector occupancy sensor and photocells.

**NOTE** For SectorNET occupancy sensor configuration, *see section 3.6.4*. For SectorNET photocell configuration, *see section 3.6.5*. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).
4.10. Sector Relay

The Sector Relay enables switching control of any device or 0-10VDC control of any 0-10VDC controllable device as part of the SectorNet system. Used for individual fixture or entire zone control, the Sector Relay provides additional system design options, allowing control of Ballast, Incandescent LED< code cathode, or other sources that may accept a 0-10VDC control input. The Sector Relay provides switching control of lighting and motor loads.

NOTE For SectorNET ballast configuration, see section 3.6.3. For installation instructions, see Sector Device Installation Sheet (Leviton part # PK-93649-10-02-0A).
5. Sector System Examples

5.1. Areas, Zones and Groups

See example layout on next page.

5.1.1. Areas

A bus controller is divided into separate partitions known as Areas, with each bus controller supporting eight Areas.

Devices are assigned to Areas via the Bus Controller Area Assignments screen, see section 3.6.2.3.

NOTE Ballast devices are not assigned to an area in the Bus Controller Area Assignments screen. They must first be assigned to a group in the Ballast Configuration screen, see section 3.6.3.

The group is then assigned to a zone which is then assigned to an area in the Bus Controller Area Setup screen, see section 3.6.2.4.

5.1.2. Zones

Each Area is divided into six Zones. Zones are assigned to Areas in the Bus Controller Area Setup screen, see section 3.6.2.4.

5.1.3. Groups

Each Zone may be associated with a Ballast Group. 32 Groups are available for selection.

Groups are assigned to Zones via the Bus Controller Area Setup screen, see section 3.6.2.4.

NOTE A Zone in an Area may only have one Group.
5.1.4. Typical Areas, Zones and Groups Layout

- **Area 1 (Conference Room)**
  - Group 1
    - Zone 1
  - Group 2
    - Zone 3
    - Group 2
  - Group 1
    - Zone 2
    - Group 1
  - Group 3
    - Zone 4
    - Group 3
  - Group 4
    - Zone 5
    - Group 4
  - Group 4
    - Zone 6
    - Group 4

- **Area 2 (Office)**
  - Group 5
    - Zone 6
    - Group 5
  - Group 7
    - Zone 1
    - Group 7
  - Group 8
    - Zone 2
    - Group 8

- **Area 4 (Hall)**
  - Group 32
    - Zone 1
  - Group 32
    - Zone 1
  - Group 32
    - Zone 1
  - Group 32
    - Zone 1
5.2. Typical Office Layout
5.3. Typical School Layout
5.4. Typical Network Components
6. Troubleshooting

6.1. Possible Device Discovery Error States

The following error states may occur during initial device discovery (section 3.2.4).

6.1.1. Kvaser Not Found

- Please check that the latest Kvaser device driver is installed and connections between PC and bus controller are secure.

6.1.2. Unable to Locate Devices

- If live devices in network do not appear in device discovery screen, verify that devices are addressed correctly, see section 3.2.5.9.

6.1.3. Duplicate Device Addresses Detected

- Assign conflicting devices to different short addresses.

**NOTE** If moving ballasts between bus controllers, do not take a ballast from one bus controller and move it to a different bus controller which is using the same short address as a duplicate short address will occur. Instead, delete the ballast and add a new ballast, then assign it a new short address.

6.1.4. LumaCAN Failure

- Verify that bus controllers are receiving correct AC power.
- Check LumaCAN addresses on all bus controllers.
- Check all physical connections on LumaCAN network.
6.2. Trouble Shooting Guide

In the event of an unexpected error there are 5 areas to investigate to find the root cause; the PC, Bus Controllers, LumaCAN, SectorNet Network, and SectorNET Devices, the chart below will assist in finding solutions for encountered errors.

<table>
<thead>
<tr>
<th>Troubleshooting PC Issues</th>
<th>PDO doesn't control lights</th>
<th>PDO file creation failure</th>
<th>PDO server failure</th>
<th>Project not found</th>
<th>Unable to open a project</th>
<th>Project nonresponsive</th>
<th>Sluggish or frozen interface</th>
<th>Erratic &quot;Warning Icon&quot;, erratic offline icons of single device</th>
<th>Cannot locate device</th>
<th>Noise on line, or errant device. Cycle power of device</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PDO file creation failure</td>
<td>Check server is functioning properly</td>
<td>Validate the file was created with the correct PC name and correct ballasts</td>
<td>PDO server failure</td>
<td>Reset service by restarting PC or restarting service</td>
<td>An SQL interaction failure may have occurred, wait a few seconds and try again</td>
<td>Restart the application</td>
<td>Restart the application</td>
<td>Noise on line, or errant device. Cycle power of device</td>
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<td></td>
<td>PDO server failure</td>
<td>PDO server failure</td>
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<td>&quot;Warning Icon&quot; over Bus Controller</td>
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<td>&quot;Warning Icon&quot; over Bus Controller</td>
<td>&quot;Warning Icon&quot; over Bus Controller</td>
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<td></td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
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<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
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<td></td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
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<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
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<tr>
<td></td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
<td>Validate Bus Controller(s) have the latest version of released software</td>
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<tr>
<td></td>
<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
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<td>Validate LumaCAN connection and terminations</td>
<td>Validate LumaCAN connection and terminations</td>
<td></td>
</tr>
<tr>
<td>Unable to operate system</td>
<td>Wire length greater than 900ft</td>
<td>Validate wire length is not greater than 900 ft.</td>
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</tr>
<tr>
<td></td>
<td>Wire gauge is not 18</td>
<td>Validate wire is 18 gauge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC generating continuous traffic</td>
<td>Validate by looking at Kvaser Can LED. If solid yellow restart the system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SectorNET line has been severed</td>
<td>Validate SectorNet line has not been severed</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiple errors detected</td>
<td>Validate LumaCAN connection and terminations</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>Validate Bus Controller(s) are operational, if failure has occurred replace Bus Controller</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Kvaser not found error</td>
<td>Kvaser device driver failure</td>
<td>Reinstall device driver</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>Kvaser USB connection Issue</td>
<td>Reseat Kvaser USB connection, use a different port for connection</td>
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<tr>
<td></td>
<td>Debugging application interference</td>
<td>Close all debugging applications</td>
<td></td>
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<tr>
<td></td>
<td>Kvaser device failure</td>
<td>Replace Kvaser</td>
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<tr>
<td></td>
<td>Scheduling Service error</td>
<td>Restart scheduling service</td>
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<tr>
<td></td>
<td>Port failure</td>
<td>Restart PC</td>
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<tr>
<td>Unable to Save/ Edit/Delete information</td>
<td>Unable to Save/ Edit/Delete information</td>
<td>An SQL interaction failure may have occurred, wait a few seconds and try again</td>
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<td></td>
<td></td>
<td>Restart the application</td>
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<tr>
<td></td>
<td></td>
<td>Restart Computer</td>
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</tr>
<tr>
<td>User interface freeze</td>
<td>User interface freeze</td>
<td>An SQL interaction failure may have occurred, wait a few seconds and try again</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Restart the application</td>
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<td></td>
<td>Restart computer</td>
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</tr>
<tr>
<td>Unable to communicate on LumaCAN</td>
<td>Port failure</td>
<td>Connect to a different port</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Restart PC</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Diagnose driver issues</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Contact your PC manufacturer</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO failure</td>
<td>Contact your PC manufacturer</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Exception received indicating memory failure</td>
<td>PC has a virus</td>
<td>Validate your PC is virus free</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC resource issue</td>
<td>Validate PC has enough resources to run the SectorNET application</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Troubleshooting LumaCAN Issues

<table>
<thead>
<tr>
<th>Issue Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network fault</td>
<td>Validate LumaCAN connection and terminations</td>
</tr>
<tr>
<td>Communication failure</td>
<td>Validate length is not greater than 2500 ft.</td>
</tr>
<tr>
<td>Ringing</td>
<td>Reduce Bus Controllers</td>
</tr>
<tr>
<td>Duplicate address</td>
<td>Confirm addresses are unique</td>
</tr>
<tr>
<td>PC generating continuous traffic</td>
<td>Validate by looking at Kvaser Can LED. If solid yellow restart the system</td>
</tr>
</tbody>
</table>

### Troubleshooting Bus Controller Issues

<table>
<thead>
<tr>
<th>Issue Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Controller not found</td>
<td>Bus Controller is not connected, connect it</td>
</tr>
<tr>
<td>Bus Controller dials are set to a number greater than 254</td>
<td>Set the dials = 0 - 254</td>
</tr>
<tr>
<td>Issue Description</td>
<td>Action Suggested</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Hardware failure #1 EEPROM Error</td>
<td>Replace Bus Controller</td>
</tr>
<tr>
<td>Hardware failure #2 RTC Error</td>
<td></td>
</tr>
<tr>
<td>Hardware failure #3 SRAM Error</td>
<td></td>
</tr>
<tr>
<td>Hardware failure #4 SFLASH Error</td>
<td></td>
</tr>
<tr>
<td>PoolID: &quot;Could not allocate memory in pool&quot;</td>
<td>Too much switch activity, stop pushing the switch</td>
</tr>
<tr>
<td>Task ID: &quot;Could not create or start a task&quot;</td>
<td>Restart SectorNET program</td>
</tr>
<tr>
<td>Timer ID: &quot;Could not create or start a timer&quot;</td>
<td>Catastrophic failure- contact factory for warranty replacement if device is covered under warranty</td>
</tr>
<tr>
<td>Device ID: &quot;Device-Table corruption&quot;</td>
<td>Contact Factory for technical support</td>
</tr>
<tr>
<td>Duplicate Bus Controller address detected</td>
<td>Two Bus Controllers are programmed with the same address, change one of the addresses</td>
</tr>
<tr>
<td>Watchdog ID (from Bitmap): &quot;Watchdog triggered&quot;</td>
<td>Task stopped in Bus Controller, Restart Bus Controller</td>
</tr>
<tr>
<td>Mailbox ID: &quot;Mailbox full&quot;</td>
<td>Task stopped in Bus Controller, Restart Bus Controller</td>
</tr>
<tr>
<td>&quot;Error executing LoadShed&quot;</td>
<td>Not supported</td>
</tr>
<tr>
<td>&quot;Error executing Fire&quot;</td>
<td>Not supported</td>
</tr>
<tr>
<td>No action after switch button is released</td>
<td></td>
</tr>
<tr>
<td>Area#: &quot;Undefined switch event&quot;</td>
<td>Contact factory for technical support</td>
</tr>
<tr>
<td>Area#: &quot;Area received an unknown context switch command&quot;</td>
<td></td>
</tr>
<tr>
<td>UI shows device with red slash</td>
<td>SectorNET device and the device reported a failure</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Device is disconnected</td>
<td>Plug device in</td>
</tr>
<tr>
<td>Erratic &quot;Warning Icon&quot;, erratic offline Icons</td>
<td>&quot;Read Error&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Write Error&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Verify Error&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;DTR does not match&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;DTR1 does not match&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;Could not reset to factory defaults&quot;</td>
</tr>
<tr>
<td>Unable to Operate System</td>
<td>&quot;LC HW Error count changed&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Count%256: &quot;LC Over Error count changed&quot;</td>
</tr>
<tr>
<td></td>
<td>PC generating continuous traffic</td>
</tr>
<tr>
<td>&quot;Illegal outgoing msg type&quot;</td>
<td>Unsupported LumaCAN commands are being sent to the Bus Controller</td>
</tr>
<tr>
<td>&quot;Duplicate short address detected&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Swap dials are set to a number greater than 254</td>
</tr>
<tr>
<td></td>
<td>More than one device has the same address</td>
</tr>
<tr>
<td></td>
<td>Ballast has duplicate address</td>
</tr>
</tbody>
</table>
### Troubleshooting SectorNET Network Issues

<table>
<thead>
<tr>
<th>Issue Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erratic &quot;Warning Icon&quot;, erratic offline icons</td>
<td>Power draw failure</td>
</tr>
<tr>
<td></td>
<td>Noise on line, or errant device. Cycle power of devices.</td>
</tr>
<tr>
<td></td>
<td>Validate Bus Controller(s) are operational, if failure has occurred</td>
</tr>
<tr>
<td></td>
<td>replace Bus Controller</td>
</tr>
<tr>
<td></td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
</tr>
<tr>
<td></td>
<td>Validate SectorNet line has not been severed</td>
</tr>
<tr>
<td></td>
<td>Validate wire is 18 gauge</td>
</tr>
<tr>
<td>Communication failure due to wire length</td>
<td>Validate wire length is not greater than 900 ft.</td>
</tr>
</tbody>
</table>

### Troubleshooting SectorNET Device Issues

<table>
<thead>
<tr>
<th>Issue Description</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erratic &quot;Warning Icon&quot;, erratic offline icons</td>
<td>Power failure</td>
</tr>
<tr>
<td></td>
<td>Noise on line, or errant device. Cycle power of devices.</td>
</tr>
<tr>
<td></td>
<td>Validate that no more than the maximum 64 devices are connected to the Bus controller</td>
</tr>
<tr>
<td></td>
<td>Hardware failure</td>
</tr>
<tr>
<td></td>
<td>Validate Bus Controller(s) are operational, if failure has occurred</td>
</tr>
<tr>
<td></td>
<td>replace Bus Controller</td>
</tr>
<tr>
<td>LED is out</td>
<td>Replace lamp</td>
</tr>
<tr>
<td>Lights are too bright</td>
<td></td>
</tr>
<tr>
<td>Network failure</td>
<td>Network wiring rules not followed</td>
</tr>
<tr>
<td></td>
<td>Validate wire length is not greater than 900 ft.</td>
</tr>
<tr>
<td></td>
<td>Validate wire is 18 gauge</td>
</tr>
<tr>
<td>Network not configured</td>
<td>Use SectorNET program to configure system</td>
</tr>
</tbody>
</table>
## 6.3. Bus Controller Error Codes (LumaCAN message)

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>006</td>
<td>Error Polling Switch</td>
<td>Device is not communicating with bus controller, Validate device address</td>
</tr>
<tr>
<td>007</td>
<td>Error Setting DTR1 for node ID query</td>
<td></td>
</tr>
<tr>
<td>008</td>
<td>Error reading device type for node ID query.</td>
<td></td>
</tr>
<tr>
<td>009</td>
<td>Error reading device sub-type for node ID query.</td>
<td></td>
</tr>
<tr>
<td>013</td>
<td>Error polling Photo cell</td>
<td>Device is not communicating with bus controller, Validate device address</td>
</tr>
<tr>
<td>019</td>
<td>Error polling occupancy sensor</td>
<td>Device is not communicating with bus controller, Validate device address</td>
</tr>
<tr>
<td>019</td>
<td>Occupancy failed to set state change bit</td>
<td></td>
</tr>
<tr>
<td>020</td>
<td>Error reading occupancy output state</td>
<td>Error communicating with Occupancy Sensor, Validate device address</td>
</tr>
<tr>
<td>022</td>
<td>Error reading ballast property 0 (number of cached properties)</td>
<td></td>
</tr>
<tr>
<td>025</td>
<td>Error reading ballast property.</td>
<td></td>
</tr>
<tr>
<td>026</td>
<td>Error sending SET_DTR command (writing ballast property)</td>
<td></td>
</tr>
<tr>
<td>028</td>
<td>Error reading switch property</td>
<td></td>
</tr>
<tr>
<td>029</td>
<td>Error writing switch property</td>
<td></td>
</tr>
<tr>
<td>030</td>
<td>Error reading ballast property 1 (feature byte)</td>
<td></td>
</tr>
<tr>
<td>031</td>
<td>Error reading ballast property 2 (minimum level A)</td>
<td></td>
</tr>
<tr>
<td>032</td>
<td>Error reading ballast property 3 (minimum level B)</td>
<td></td>
</tr>
<tr>
<td>033</td>
<td>Error reading ballast property 4 (maximum level A)</td>
<td></td>
</tr>
<tr>
<td>034</td>
<td>Error reading ballast property 5 (maximum level B)</td>
<td></td>
</tr>
<tr>
<td>035</td>
<td>Error reading ballast property 6 (emergency level AB)</td>
<td></td>
</tr>
<tr>
<td>036</td>
<td>Error reading ballast property 7 (power on level AB)</td>
<td></td>
</tr>
<tr>
<td>037</td>
<td>Error reading ballast property 8 (load shed level-1 AB)</td>
<td></td>
</tr>
<tr>
<td>038</td>
<td>Error reading ballast property 9 (load shed level-2 AB)</td>
<td></td>
</tr>
<tr>
<td>039</td>
<td>Error reading ballast property 10 (load shed level-3 AB)</td>
<td></td>
</tr>
<tr>
<td>040</td>
<td>Error reading ballast property 11 (fire level AB)</td>
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</tr>
<tr>
<td>041</td>
<td>Error reading ballast property 12 (PDO duration time)</td>
<td></td>
</tr>
<tr>
<td>042</td>
<td>Error reading switch property 0 (number of cached properties)</td>
<td></td>
</tr>
<tr>
<td>043</td>
<td>Error reading switch property 1 (feature byte)</td>
<td></td>
</tr>
<tr>
<td>044</td>
<td>Error reading occupancy sensor property 0 (number of cached properties)</td>
<td></td>
</tr>
<tr>
<td>045</td>
<td>Error reading occupancy sensor property 1 (feature byte)</td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>046</td>
<td>Error reading occupancy sensor property 2 (time delay)</td>
<td></td>
</tr>
<tr>
<td>047</td>
<td>Error reading occupancy sensor property 3 (PIR sensitivity)</td>
<td></td>
</tr>
<tr>
<td>048</td>
<td>Error reading occupancy sensor property 4 (US sensitivity)</td>
<td></td>
</tr>
<tr>
<td>049</td>
<td>Error reading occupancy sensor property 5 (light level threshold)</td>
<td></td>
</tr>
<tr>
<td>054</td>
<td>Inconsistent results detected while searching for long addresses</td>
<td></td>
</tr>
<tr>
<td>066</td>
<td>Error setting DTR1 for long address read</td>
<td></td>
</tr>
<tr>
<td>067</td>
<td>Error reading long address (high byte) while searching ballasts with short address</td>
<td></td>
</tr>
<tr>
<td>068</td>
<td>Error reading long address (middle byte) searching ballasts with short address</td>
<td></td>
</tr>
<tr>
<td>069</td>
<td>Error reading long address (low byte) while searching ballasts with short address</td>
<td></td>
</tr>
<tr>
<td>077</td>
<td>Error reading photo cell property</td>
<td></td>
</tr>
<tr>
<td>078</td>
<td>Error writing photo cell property</td>
<td></td>
</tr>
<tr>
<td>079</td>
<td>Error reading occupancy sensor property</td>
<td></td>
</tr>
<tr>
<td>080</td>
<td>Error writing occupancy sensor property</td>
<td></td>
</tr>
<tr>
<td>083</td>
<td>Error reading photo cell property 0 (number of cached properties)</td>
<td></td>
</tr>
<tr>
<td>084</td>
<td>Error reading photo cell property 1 (feature byte)</td>
<td></td>
</tr>
<tr>
<td>088</td>
<td>Error reading device firmware version for node ID query</td>
<td></td>
</tr>
<tr>
<td>082</td>
<td>Error sending load shed command</td>
<td></td>
</tr>
<tr>
<td>085</td>
<td>Error sending fire command</td>
<td></td>
</tr>
<tr>
<td>093</td>
<td>Error sending SET_DTR1 command (writing ballast property)</td>
<td></td>
</tr>
<tr>
<td>094</td>
<td>Error sending STORE_DTR_TO_DTR1 command (writing ballast property)</td>
<td></td>
</tr>
<tr>
<td>095</td>
<td>Error reading occupancy sensor property (undefined property number)</td>
<td></td>
</tr>
<tr>
<td>097</td>
<td>Invalid property number during property write to photocell</td>
<td></td>
</tr>
<tr>
<td>098</td>
<td>Invalid property number during property read to photocell</td>
<td></td>
</tr>
<tr>
<td>099</td>
<td>Target foot candle assignment out of range (MIN_LIGHT - MAX_LIGHT)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Compensation out of range (0-100)</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Error polling switch state</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Error reading 'trash can' from switch</td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>Error polling occupancy sensor</td>
<td></td>
</tr>
</tbody>
</table>

Device is not communicating with bus controller, Validate device address.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>Duplicate Short Address Detected</td>
<td>Duplicate Ballast short address, validate Ballast short addresses</td>
</tr>
<tr>
<td>117</td>
<td>Cannot allocate memory for sending message to download power buffers</td>
<td></td>
</tr>
<tr>
<td>118</td>
<td>Cannot allocate memory for memory block ack message</td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>Timed out waiting for metadata ack (power buffer xfer) message from PC</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>Timed out waiting for data ack (power buffer xfer) message from PC</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Timed out waiting for final data ack (power buffer xfer) message from PC</td>
<td></td>
</tr>
<tr>
<td>122</td>
<td>Error adding device information to table</td>
<td></td>
</tr>
<tr>
<td>123</td>
<td>Error writing group number (out of range)</td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>Error writing response time (out of range)</td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>Attempt to add ballast to a device slot which is already being occupied</td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>Attempt to remove non-ballast device from table</td>
<td></td>
</tr>
<tr>
<td>129</td>
<td>PC attempts to assign short address to an existing device</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>Error writing bus controller property (device address out of range)</td>
<td></td>
</tr>
<tr>
<td>131</td>
<td>Error reading ballast subtype (during short address assignment)</td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>Error reading ballast subtype (during device scan)</td>
<td></td>
</tr>
<tr>
<td>133</td>
<td>Error more than 1 ballast detected on SectorNET while assigning a Long Address</td>
<td></td>
</tr>
<tr>
<td>134</td>
<td>Error reading ballast network status byte (during ballast property updates)</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>Error reading ballast device status byte (during ballast property updates)</td>
<td></td>
</tr>
</tbody>
</table>
## 6.4. Codes posted by Bus Controller using Status Byte.

*(PC must query Bus Controller)*

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Unable to allocate memory for LumaCAN fire event</td>
</tr>
<tr>
<td>002</td>
<td>Unable to allocate memory for LumaCAN node ID query</td>
</tr>
<tr>
<td>003</td>
<td>Unable to allocate memory for LumaCAN property write</td>
</tr>
<tr>
<td>004</td>
<td>Unable to allocate memory for LumaCAN property query</td>
</tr>
<tr>
<td>005</td>
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</tr>
<tr>
<td>010</td>
<td>Unable to transmit LumaCAN property reply message. Too many errors</td>
</tr>
<tr>
<td>011</td>
<td>Unable to transmit LumaCAN node ID replay message. Too many errors</td>
</tr>
<tr>
<td>012</td>
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</tr>
<tr>
<td>014</td>
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<tr>
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<tr>
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<tr>
<td>050</td>
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<td>059</td>
<td>Error starting day-light timer</td>
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<td>060</td>
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<tr>
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<td>Description</td>
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<td>-------------</td>
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<td>061</td>
<td>Attempt to read using invalid property number from bus controller</td>
</tr>
<tr>
<td>062</td>
<td>Attempt to read using invalid property number from bus controller</td>
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<td>063</td>
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<td>064</td>
<td>Attempt to write using invalid property number to area controller</td>
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<tr>
<td>065</td>
<td>Attempt to write using invalid property number to bus controller</td>
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<td>070</td>
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<td>071</td>
<td>Device manager attempts to read property from unknown device</td>
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<td>Device manager attempts to write property to unknown device</td>
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<td>073</td>
<td>Device manager detects invalid command code</td>
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<td>074</td>
<td>Device manager failed clearing address sorting table</td>
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<td>075</td>
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<td>076</td>
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<td>081</td>
<td>Attempt to read using invalid sub-property number from zones</td>
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<tr>
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</table>

Validate that no more than the maximum 64 devices are connected to the Bus controller.
<table>
<thead>
<tr>
<th>Code</th>
<th>Error Description</th>
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<tbody>
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<td>Cannot allocate memory for bus controller property write</td>
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<tr>
<td>110</td>
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<td>111</td>
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<td>125</td>
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<td>126</td>
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<td>127</td>
<td>Error while attempting to add a device of type &quot;ballast&quot;</td>
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<td>128</td>
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<td>129</td>
<td>Error in attempting to write a short address that is already assigned</td>
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<td>130</td>
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<td>131</td>
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<td>132</td>
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<td>133</td>
<td>Error attempting to write long address to a ballast</td>
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<tr>
<td>134</td>
<td>Error attempting to read property 100 from the ballast, &quot;Network Status Byte&quot;</td>
</tr>
<tr>
<td>135</td>
<td>Detected a bit set in ballast property 100 (Network Status Byte)</td>
</tr>
<tr>
<td>135</td>
<td>Detected a bit set in ballast property 101 (Device Status Byte)</td>
</tr>
</tbody>
</table>
7. Glossary

0-10V Signal: A low-voltage signal used for communication between 0-10V controls, ballasts and other 0-10V devices.

Area: A separate partition on a bus controller in which devices are assigned to. Each bus controller supports eight areas.

Auto Adapting: An occupancy sensor's ability to automatically return to programmed operation when false-on or false-off conditions occur or if sensor is left in test mode.

Ballast: An electrical device for starting and regulating fluorescent lamps. Required for all fluorescent lights.

Bus Controller: SectorNET control unit and power supply. Capable of controlling up to 64 individual devices (ballasts, occupancy sensors, photocells, etc.). Communicates with each device using SectorNET protocol with a maximum of 64 bus controllers allowed in a SectorNET network.

Class 1 Wiring: Used for network connection of Sector devices on network bus. May be run in same electrical box, conduit or cable as line-voltage wiring.

Class 2 Wiring: Used for low voltage 0-10V signals. Can also be used for network connection of Sector devices on network bus. May not be run in same electrical box, conduit or cable as line-voltage wiring.

Commissioning: Initial set-up and programming of Sector components and SectorNET network.

DALI (Digital Addressable Lighting Interface): A European digital lighting protocol developed for communication with digital ballasts.

Daylight Harvesting: Used to maintain a desired lighting level within a space, regardless of light source (daylight or dimmable artificial). If the lighting level can be maintained with daylight, no artificial light is necessary. However, if the day lighting is not sufficient, the desired level can be increased automatically by artificial light.

Device: Sector components such as bus controllers, ballasts, occupancy sensors, photocells and switches.

Fade Curve: Voltage output in relation to light level.

Footcandle (fc): A unit of illumination for measurement of light intensity falling on a surface. Defined with reference to a standardized candle burning at a one foot distance from a given surface.

Graphical View: Part of SectorNET Client Application where devices, areas and zones are selected and programmed.

Group: A ballast group (1-32) which is associated to a zone. See zone below.

Hold Off Light Level: Level at which an occupancy sensor will begin operation. Valid range is from 0-100%.

Load Shedding: Load shedding is when a reduction in energy consumption levels is required (mainly used in commercial, industrial and utility operations). Electric usage is reduced when certain electrical loads and times are programmed.

Long Address: The factory-assigned digital address of a Sector device.
**Loop:** A photocell can operate in a **Open Loop** or **Closed Loop** daylight harvesting mode: In closed loop mode, the photocell will sense the amount of ambient or task light in the room. In open loop mode, the photocell will sense the amount of light coming in through the skylight or windows.

**Low Voltage Interface:** A Sector device which allows for connection of Leviton low voltage devices and low voltage devices manufactured by companies other than Leviton.

**LumaCAN:** A control protocol used by Leviton control devices. Each device requires its own unique address on the LumaCAN network to which it is connected. Valid addresses for LumaCAN devices are between 1 & 254.

**Multi Technology Sensor:** Occupancy sensor which combines passive infrared (PIR) motion detection and ultrasonic motion detection for maximum sensitivity.

**Network View:** Part of SectorNET Client Application where devices are selected and configured.

**Occupancy Sensor:** Sensors which automatically turn lights on when a room is occupied and off when a room is vacant.

**Passive Infrared (PIR) Sensor:** A sensor which detects infrared heat emitted by living objects.

**Personal Dimming:** A SectorNET software application that offers lighting control for each individual within a workspace. For example, the user can set custom lighting levels and recall pre-programmed lighting scenes.

**Photocell Sensor:** A sensor which detects lighting level in a space. A photocell daylight sensor is used for daylight harvesting, which allows for automatic lowering of indoor lighting levels when available daylight level is high, and raising of indoor lighting levels when available daylight level is low.

**Polarity-Free:** Electrical connections which are not permanently positive or negative. Sector bus wiring is polarity-free and can be reversed without electrical problems.

**Short Address:** The user-assigned digital address of a Sector device.

**Test Mode:** Test Mode is a method for testing devices in order to aid in locating devices and isolating fault conditions. Pressing the test button on the Bus Controller activates the test mode.

**Topology-Free:** Topology is the configuration of a communications network. SectorNET is a topology-free network, meaning that any network topology may be used (daisy-chain, star and ring methods).

**Walk-Through:** Occupancy sensor feature which will automatically turn on lighting when a person enters a space and turn off lighting when person exits.

**Zone:** Part of an area. Up to six zones may belong to an area. See area above.
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