GreenMAX®
Programming Manual
Daylight Harvesting and Dimming Module




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GreenMAX Programming Manual

Daylight Harvesting and Dimming Module

V2.14

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GREENMAX DIMMING AND DAYLIGHT HARVESTING MANUAL V2.14D.VSD

Section 1

Behavior Descriptions and Settings

B1 – Dimming with Manual Control and Auto Off

Operation Description

1. Occupancy Sensor will, upon vacancy, turn Off the lights after delay period expires.
2. Manual operation of dimming module. Switch buttons can be configured for ON/Bright/Dim/OFF function.
3. The Bright and Dim buttons provide fade Up/Down control of the light level.

-- B1 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Dim DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Off DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group

**Range 0 to 100%. A complete Off of relay is represented by 0%.*
***This value is set to created a timed switch button. Time will start when the button is pressed. When this time expires, lights will fade to Off.*

Occupancy Sensor

Device Type	Description	Initial Level	Delay	Override	Assign to
Occupancy Sensor	*Enter as required*	*Ignore*	*Set to a value** *Range 0 to 256*	'N/A'	Relay *or* Group

**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. This behavior can be used with any quantity of buttons and is not exclusive to the 4 button Switch.
3. This behavior can utilize either a Digital switch or a Low Voltage switch button.
4. There is no photocell involved with this behavior.
5. Switch buttons can be configured as Timed Switch buttons.
6. The Occupancy Sensor will turn the lights Off only.

B2 – Dimming with Manual Control and Auto ON/Off

Operation Description

1. Occupancy Sensor will, upon occupancy, turn On the lights to the configured Initial Level.
2. Manual operation of dimming module. Switch buttons can be configured for ON/Bright/Dim/OFF function.
3. The Bright and Dim buttons provide fade Up/Down control of the light level.
4. Occupancy Sensor will, upon vacancy, turn Off the lights after delay period expires.

-- B1 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Dim DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Off DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group

**Range 0 to 100%. A complete Off of relay is represented by 0%.*
***This value is set to created a timed switch button. Time will start when the button is pressed. When this time expires, lights will fade to Off.*

Occupancy Sensor

Device Type	Description	Initial Level	Delay	Override	Assign to
Occupancy Sensor	*Enter as required*	*Set to a value*** *Range 0 to 100%*	*Set to a value** *Range 0 to 256*	'N/A'	Relay *or* Group

**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself*
***This is percentage of output of the 0-10VDC module*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. This behavior can be used with any quantity of buttons and is not exclusive to the 4 button Switch.
3. This behavior can utilize either a Digital switch or a Low Voltage switch button.
4. There is no photocell involved with this behavior.
5. Switch buttons can be configured as Timed Switch buttons.
6. The Occupancy Sensor will turn the lights both On and Off.
7. The lights will fade from level to level including both On and Off.

B3 – Dimming with Auto ON/OFF

Operation Description

1. Occupancy Sensor will, upon occupancy, turn On the lights to the configured Initial Level.
2. Occupancy Sensor will, upon vacancy, turn Off the lights after delay period expires.

-- B3 – DEVICE SETTINGS --						
	Device Type	**Description**	**Initial Level**	**Delay**	**Override**	**Assign to**
Occupancy Sensor	Occupancy Sensor	*Enter as required*	*Set to a value*** *Range 0 to 100%*	*Set to a value** *Range 0 to 256*	'N/A'	Relay *or* Group
		**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself* ***This is percentage of output of the 0-10VDC module*				

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. There are no photocells or switches involved with this behavior.
3. The Occupancy Sensor will turn the lights both On and Off.
7. The lights will fade between On and Off.

B4 – Dimming with Manual ON/Bright/Dim/OFF

Operation Description

1. Manual operation of dimming module.
2. Switch buttons can be configured for ON/Bright/Dim/OFF function.
3. The Bright and Dim buttons provide fade Up/Down control of the light level.

-- B4 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Dim DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Off DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group

**Range 0 to 100%. A complete Off of relay is represented by 0%.*
***This value is set to created a timed switch button. Time will start when the button is pressed. When this time expires, lights will fade to Off.*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. This behavior can be used with any quantity of buttons and is not exclusive to the 4 button Switch.
3. This behavior can utilize either a Digital switch or a Low Voltage switch button.
4. There is no photocell or occupancy sensor involved with this behavior.
5. Switch buttons can be configured as Timed Switch buttons.

B6 – Dimming ON Command

Operation Description

1. Turn On at a specific time.

-- B6 – DEVICE SETTINGS --
No devices required

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. There are no photocells, occupancy sensors, or switches involved with this behavior.

B7 – Dimming OFF Command

Operation Description

1. Turn Off at a specific time.

-- B7 – DEVICE SETTINGS --
No devices required

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. There are no photocells, occupancy sensors, or switches involved with this behavior.

B8 – Dimming with Auto ON/OFF and Light Hold Off

Operation Description

1. Occupancy Sensor will, upon occupancy, turn On the lights to the configured Initial Level.
2. Occupancy Sensor will, upon vacancy, turn Off the lights after delay period expires.
3. System monitors Photocell input signal and compares it to the Photocell Target Level. Lights will turn Off or will be held Off above the Target Level. Below the Target Level, lights will be permitted to turn On.

-- B8 – DEVICE SETTINGS --

Occupancy Sensor

Device Type	Description	Initial Level	Delay	Override	Assign to
Occupancy Sensor	*Enter as required*	*Set to a value** Range 0 to 100%*	*Set to a value* Range 0 to 256*	'N/A'	Relay *or* Group

**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself*
***This is percentage of output of the 0-10VDC module*

Photocell

Device Type	Description	Daylight Harvesting Speed	Deadband	Artificial Zero	Target Level	Assign to
Closed Loop	*Enter as required*	Ignore	*Set to a value 10% is typical*	'Disabled'	*Set to required**	Relay *or* Group

** Target level is percentage of photocell input range and is the desired measured light level in the space*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. There is no switch involved with this behavior.
3. The Occupancy Sensor will turn the lights both On and Off if the light level is below the Photocell Target Level.
7. The lights will fade between On and Off.

B9 – Dimming with Manual ON/Bright/Dim/OFF, Auto OFF and Light Hold Off

Operation Description

1. Occupancy Sensor will turn OFF lights with vacany detection after delay period expires.
2. Switch buttons can be configured for ON/Bright/Dim/OFF function. The Bright and Dim buttons provide fade Up/Down control of the light level.
3. System monitors Photocell input signal and compares it to the Photocell Target Level. Lights will turn Off or will be held Off above the Target Level. Below the Target Level, lights will be permitted to turn On.

-- B9 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Dim DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Off DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group

**Range 0 to 100%. A complete Off of relay is represented by 0%.*
***This value is set to created a timed switch button. Time will start when the button is pressed. When this time expires, lights will fade to Off.*

Occupancy Sensor

Device Type	Description	Initial Level	Delay	Override	Assign to
Occupancy Sensor	*Enter as required*	*Ignore*	*Set to a value** *Range 0 to 256*	'N/A'	Relay *or* Group

**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself*

Photocell

Device Type	Description	Daylight Harvesting Speed	Deadband	Artificial Zero	Target Level	Assign to
Closed Loop	*Enter as required*	Ignore	*Set to a value 10% is typical*	'Disabled'	*Set to required**	Relay *or* Group

** Target level is percentage of photocell input range and is the desired measured light level in the space*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. This behavior can be used with any quantity of buttons and is not exclusive to the 4 button Switch.
3. This behavior can utilize either a Digital switch or a Low Voltage switch button.
3. The Occupancy Sensor will turn the lights Off.
7. The lights will fade between On and Off.

B10 – Daylight Harvesting with Photocell, Manual ON/Bright/Dim/OFF, Auto ON/OFF

Operation Description

1. Occupancy Sensor will turn On lights with detection of Area occupancy. Vacancy will turn Off the lights after delay period expires.
2. Switch buttons can be configured for ON/Bright/Dim/OFF function. The Bright and Dim buttons provide a temporary manual override of the light level. The duration of the manual override is configurable.
3. The Photocell Target Level drives the daylight harvesting by continuously measuring the light level and adjusting the output of the Dimming Module accordingly.

-- B10 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Ignore*	'N/A'	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Ignore*	'N/A'	*Set to a value* Range 0 to 256*	Relay *or* Group
Dim DS Button	*Enter as required*	*Ignore*	'N/A'	*Set to a value* Range 0 to 256*	Relay *or* Group
Off DS Button	*Enter as required*	*Ignore*	'N/A'	'N/A'	Relay *or* Group

**The Override time represents the length of time the temporary manual override of the photocell Target Level will be in effect. Pressing these buttons will initialize the override by increasing or decreasing the light level.*

Occupancy Sensor

Device Type	Description	Initial Level	Delay	Override	Assign to
Occupancy Sensor	*Enter as required*	*Ignore*	*Set to a value* Range 0 to 256*	'N/A'	Relay *or* Group

**This Delay setting is the typical occupancy sensor delay before lights will turn off. It is in addition to the value set in the device itself*

Photocell

Device Type	Description	Daylight Harvesting Speed	Deadband	Artificial Zero	Target Level	Assign to
Closed Loop	*Enter as required*	'Fast'	*Set to a value 10% is typical*	'Disabled'	*Set to required**	Relay *or* Group

** Target level is percentage of photocell input range and is the desired measured light level in the space*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. The Closed Loop photocell is the best suited for this application.
3. The Target Level of the photocell drives the Daylight Harvesting.
4. The system monitors the input value from the photocell and compares it to the photocell Target Level. If the input value is below the Target Level the DS relay module will increase output. If the input level is above the target Level, the DS relay module will decrease output.
5. The Daylight Harvesting Speed setting will determine the speed of response from the system for changes in light levels. There are three settings; Fast, Slow, test.
6. When the occupancy sensor turns on the relay in response to someone entering the Area, the lights will fade up to the Photocell Target Level or the last known level if a manual override is still in effect.
7. All of the devices listed above must be configured for this Behavior to operate properly.

B11 – Dimming with Manual ON/OFF and Light Hold Off

Operation Description

1. Switch buttons can be configured for ON/Bright/Dim/OFF function. The Bright and Dim buttons provide fade Up/Down control of the light level.
3. System monitors Photocell input signal and compares it to the Photocell Target Level. Lights will turn Off or will be held Off above the Target Level. Below the Target Level, lights will be permitted to turn On.

-- B11 – DEVICE SETTINGS --

Switch Button Settings

Button Type	Description	Initial Level	Delay	Override	Assign to
On DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Bright DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Dim DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group
Off DS Button	*Enter as required*	*Set to a value**	*Set to a value***	'N/A'	Relay *or* Group

**Range 0 to 100%. A complete Off of relay is represented by 0%.*
***This value is set to created a timed switch button. Time will start when the button is pressed. When this time expires, lights will fade to Off.*

Photocell

Device Type	Description	Daylight Harvesting Speed	Deadband	Artificial Zero	Target Level	Assign to
Closed Loop	*Enter as required*	Ignore	*Set to a value 10% is typical*	'Disabled'	*Set to required**	Relay *or* Group

** Target level is percentage of photocell input range and is the desired measured light level in the space*

NOTES

1. This Dimming Behavior applies only to the Dimming and Sensing relays.
2. This behavior can be used with any quantity of buttons and is not exclusive to the 4 button Switch.
3. This behavior can utilize either a Digital switch or a Low Voltage switch button.
3. There is no Occupancy Sensor involved with this behavior.
7. The lights will fade between On and Off.

Section 2

Programming Details

B4 Dimming with Manual Control - Programming Overview

This section will present the typical steps required to program a GreenMAX system to provide Dimming functionality.

The fundamental components required for Dimming control are:

- GreenMAX Dimming and Switching Relay Modules – RELAY-1DS
- 4 Button Switch - either Low Voltage or Digital

Office Dimming Schedule

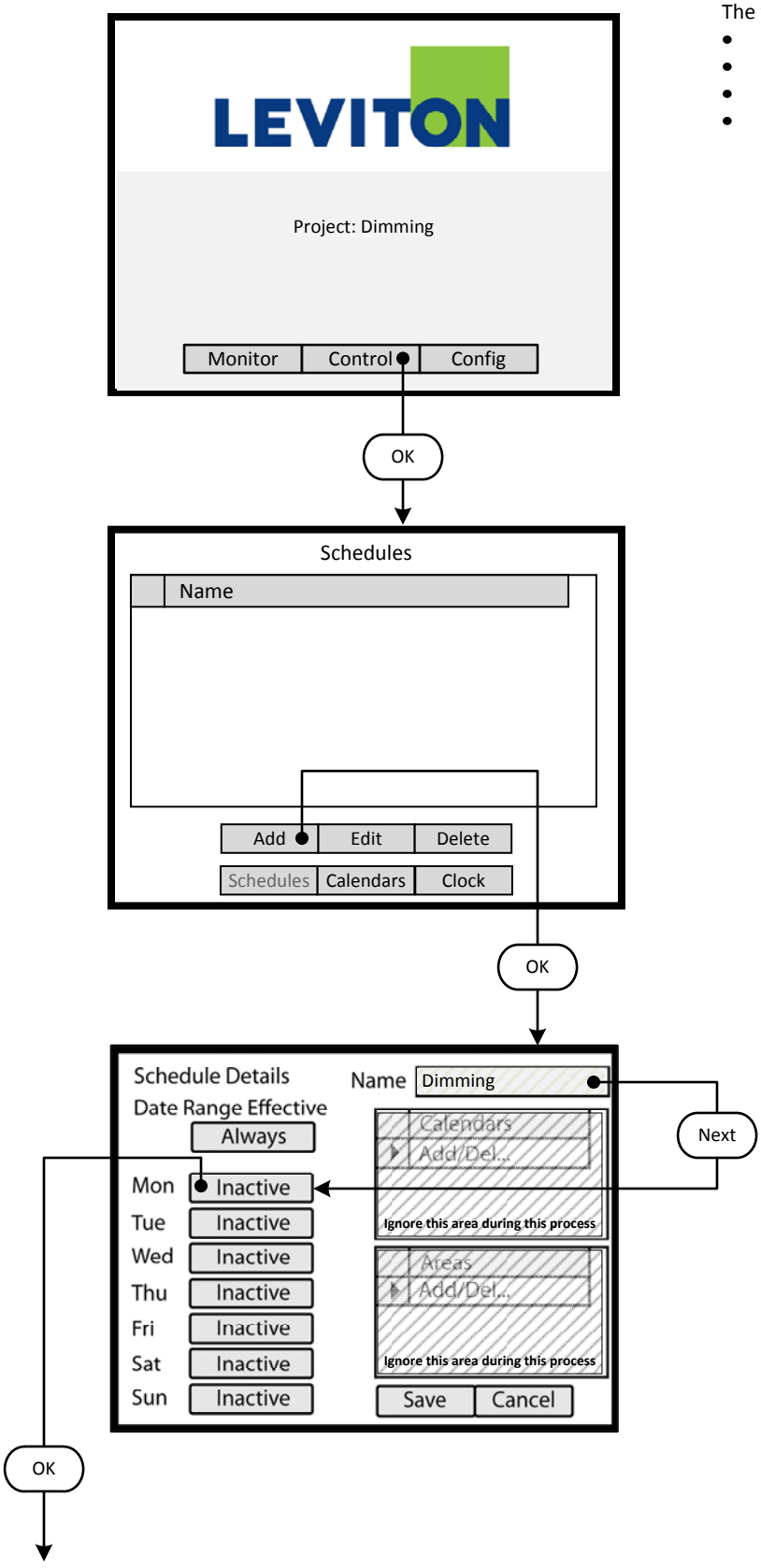
Monday to Sunday

8:00am	Office Dimming	B4 Lights will be controlled by: Switch Buttons (4): On Button – turn ON at 80% Bright Button Dim Button Off Button
5:00pm	OFF sweep	B7 Lights will be turned OFF

Programming Checklist

- ❑ Create a schedule.
- ❑ Configure switch buttons. (On/Bright/Dim/Off)
- ❑ Create an Area.
- ❑ Assign a schedule to an Area.
- ❑ Add relays to Area.
- ❑ Add switch buttons to area.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1: Create a Schedule

Programming operation of the GreenMAX is based on running Schedules. A Schedule can be considered a default seven (7) day pattern of operation.

The following rules apply:

- An Area requires a Schedule to operate.
- Only one Schedule can be assigned to an Area.
- A Schedule can be assigned to multiple Areas.
- Schedules reside in the GreenMAX system and can be accessed through the Handheld Display Unit (HDU).

Step 1.1

To create a Schedule, enter the <**Control**> section of the Handheld Display Unit (HDU) software.

Understanding the Screen
There are three sections of the HDU software. The sections under the buttons are:
<**Monitor**> - *Used to check the system time/date, relay status*
<**Control**> - *Access Scheduling*
<**Config**> - *Configuration of system including set-up of Areas*

Step 1.2

The first <**Control**> HDU screen lists the existing Schedules available in your GreenMAX System. The screen shown indicates that there are no Schedules available or created.

By navigating to <**Add**> and pressing OK, this will initiate the creation of a Schedule.

Other Options
To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <**Edit**> *and press OK, to initiate the modification of the selected Schedule.*

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <**Delete**> *and press OK, to erase the selected Schedule.*

Step 1.3

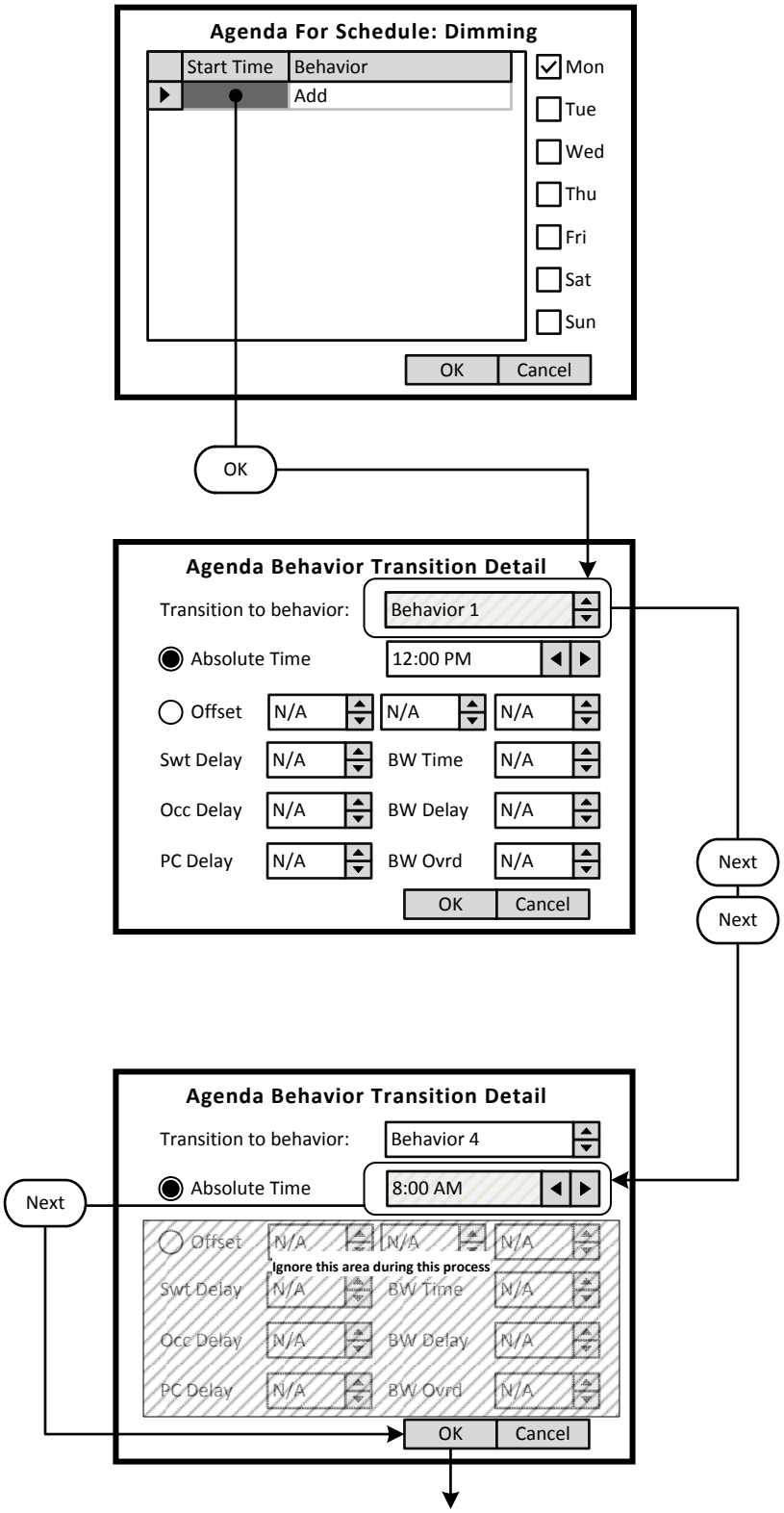
The screen is entered with the -**Name**- field highlighted. Enter the desired name of your Schedule using the alpha numeric keypad of the HDU. When complete, press the NEXT button on the navigation keypad. The cursor will advance to the <**Monday**> button.

Understanding the Screen
The label value of "Inactive" shown on the <**Monday**> *button indicates that there is currently no Behavior transitions programmed for this day. The same is true for all days, Monday through Sunday, of this schedule.*

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.4

The screen is entered at the first line of the Agenda. There are a total of 24 Behavior Transition times available per day. Clicking OK will advance to the Behavior Transition Detail screen.

Understanding the Screen
This Agenda only applies to Monday, as shown here.
*<**OK**> - Will save the settings or changes*
*<**Cancel**> - Will discard the changes*

Step 1.5

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consulate the Behavior chart in the Manual for descriptions. For this example change to Behavior 4.

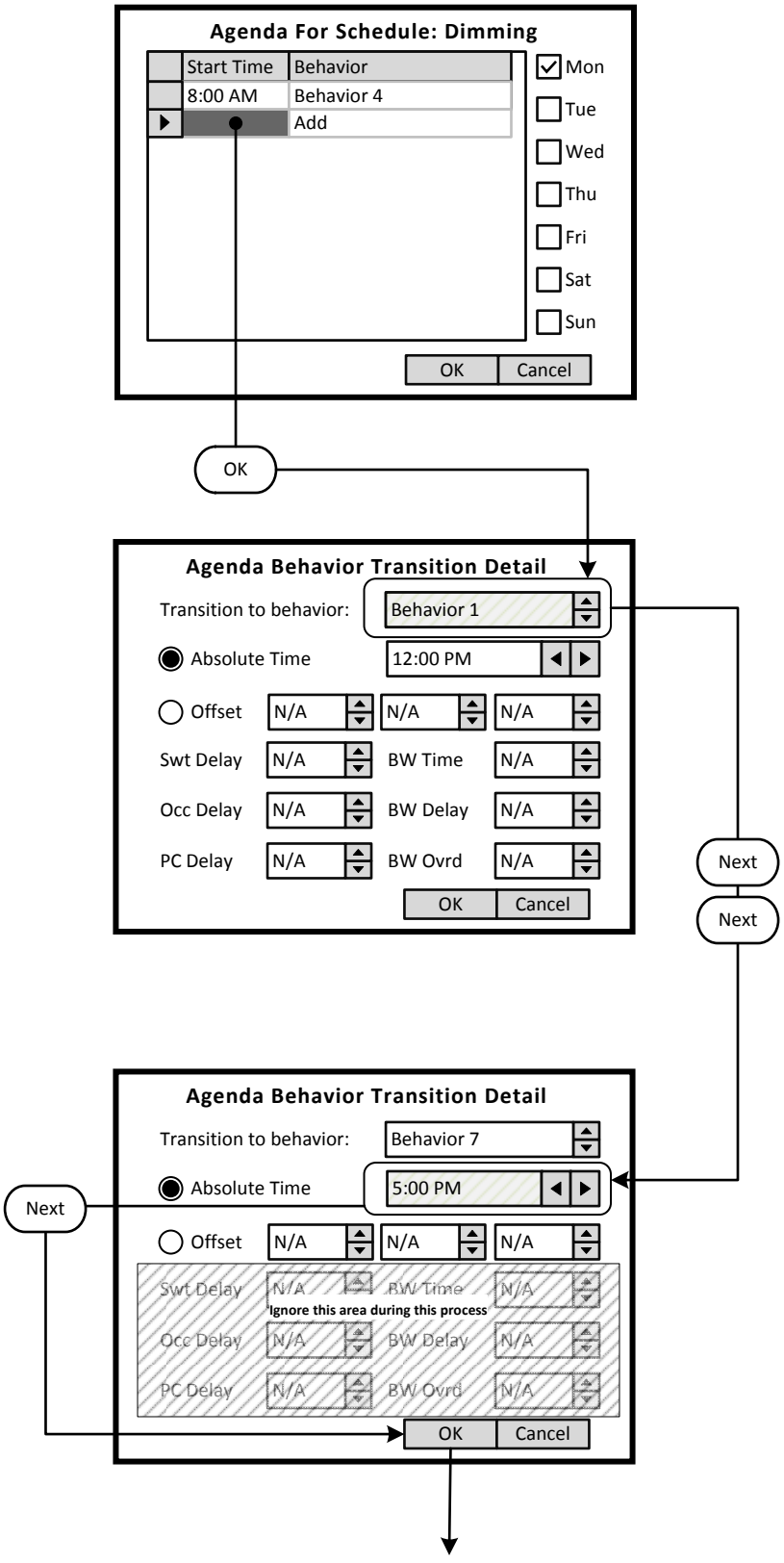
Understanding the Screen
<**Offset**> *provides access to Sunrise and Sunset settings for Astronomical clock times.*
-**BW Time**-, -**BW Delay**-, -**BW Ovrd**- - *These are the Blinkwarn settings that apply to this Behavior Transition only. They will override the Global Blinkwarn Settings set in the System Settings section.*

Step 1.6

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 8:00 AM.

Understanding the Screen
*-**Swt Delay**- is used if the switch in the associated Area is to function as a Timed Off switch. This is the amount of time the lights will stay On after a button press, and before they will turn Off.*
*-**Occ Delay**- This is the amount of time the lights will stay On after the occupancy sensor does not detect occupancy and before they will turn Off.*
*-**PC Delay**- This is the amount of time the lights will stay On after the photocell trigger point is exceeded and before they will turn Off.*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.7

Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen
This Agenda only applies to Monday, as shown here.
A transition to Behavior 4 will occur Monday at 8:00 AM.

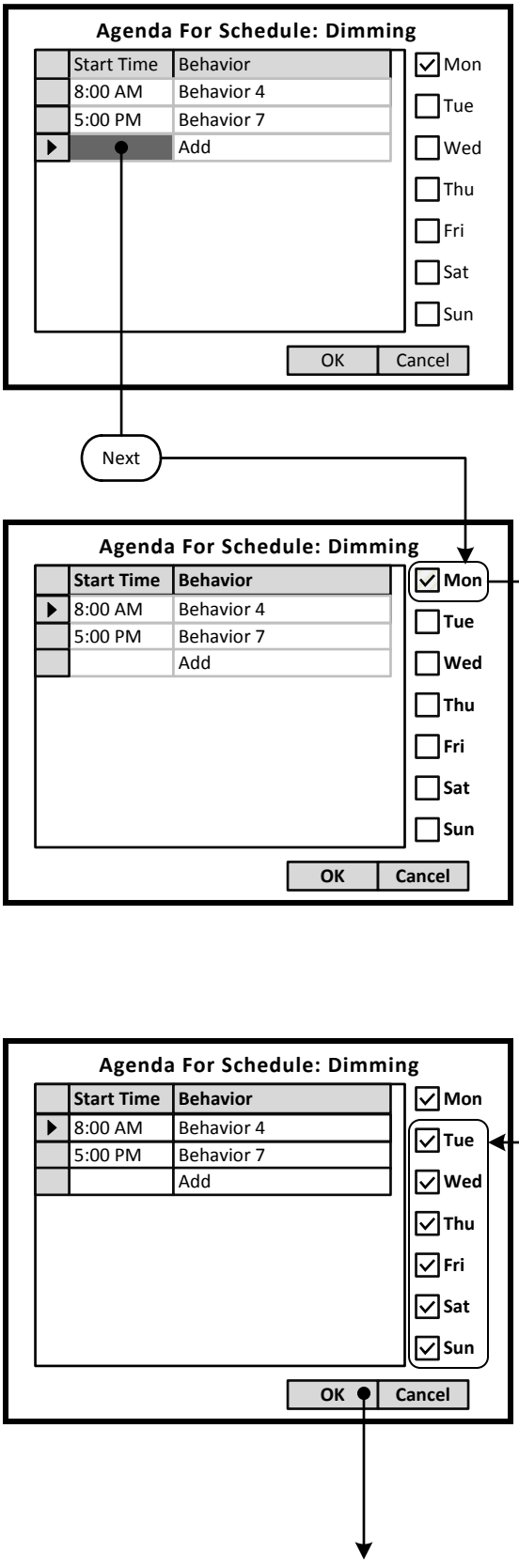
Step 1.8

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consulate the Behavior chart in the Manual for descriptions. For this example change to Behavior 7 (OFF).

Step 1.9

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 5:00 PM. When complete, use the NEXT button to navigate to the <**OK>** on screen button.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.10
To apply this Agenda or pattern of Behavior to each day of the week press Next to advance to the Day column.

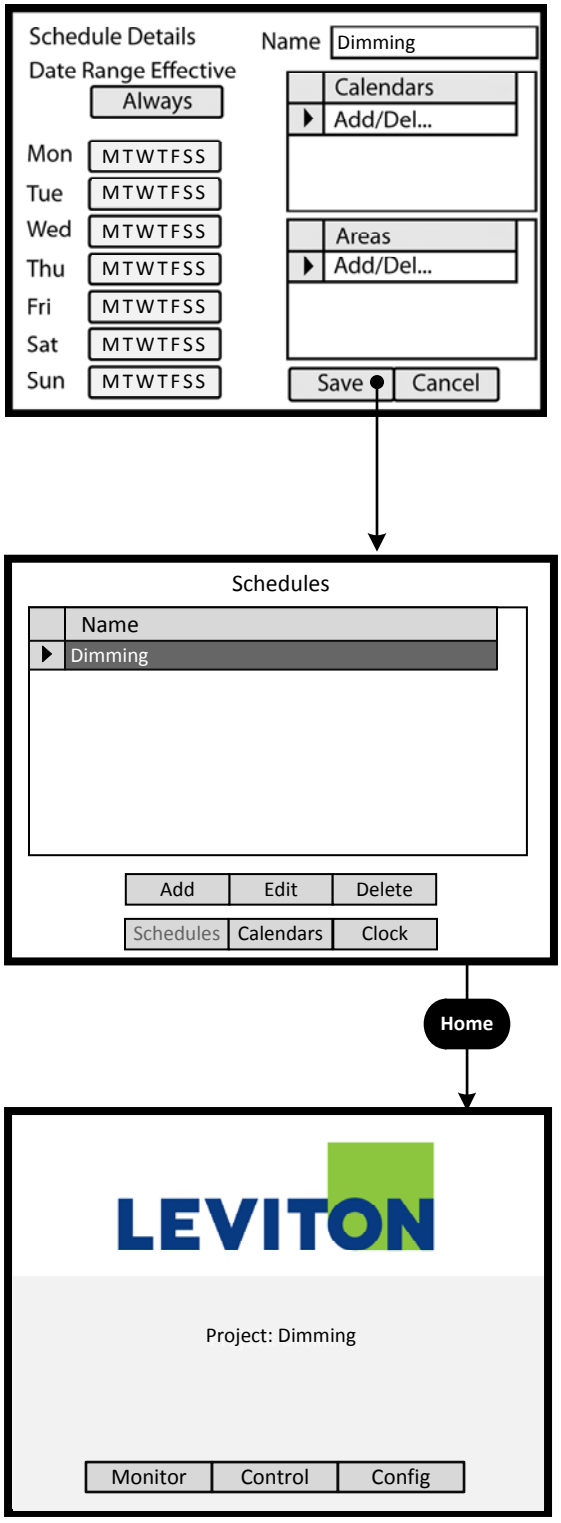
Understanding the Screen
This Agenda only applies to Monday, as shown here.
A transition to Behavior 4 will occur Monday at 8:00 AM.
A transition to Behavior 7 will occur Monday at 5:00 PM.

Step 1.11
Press Next to the -**Tuesday**- check box.
Press -**OK**- to check the box, this will add Tuesday to the active list.

Step 1.12
Use a combination of the NEXT and OK to fill in the Tuesday through Sunday check boxes.

Understanding the Screen
This Agenda only applies to Monday through Sunday.
A transition to Behavior 4 will occur each day at 8:00 AM.
A transition to Behavior 7 will occur each day at 5:00 PM.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.13

To save the Schedule, press the NEXT button on the navigation keypad to advance to the <**Save**> button.

Understanding the Screen
The label value of "MTWTFSS -" on the <**Monday>** *through* <**Sunday**> *indicates that the same Agenda applies to each of these days.*

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

Step 1.14

There is only one Schedule available in the system for the dimming pattern of behavior.

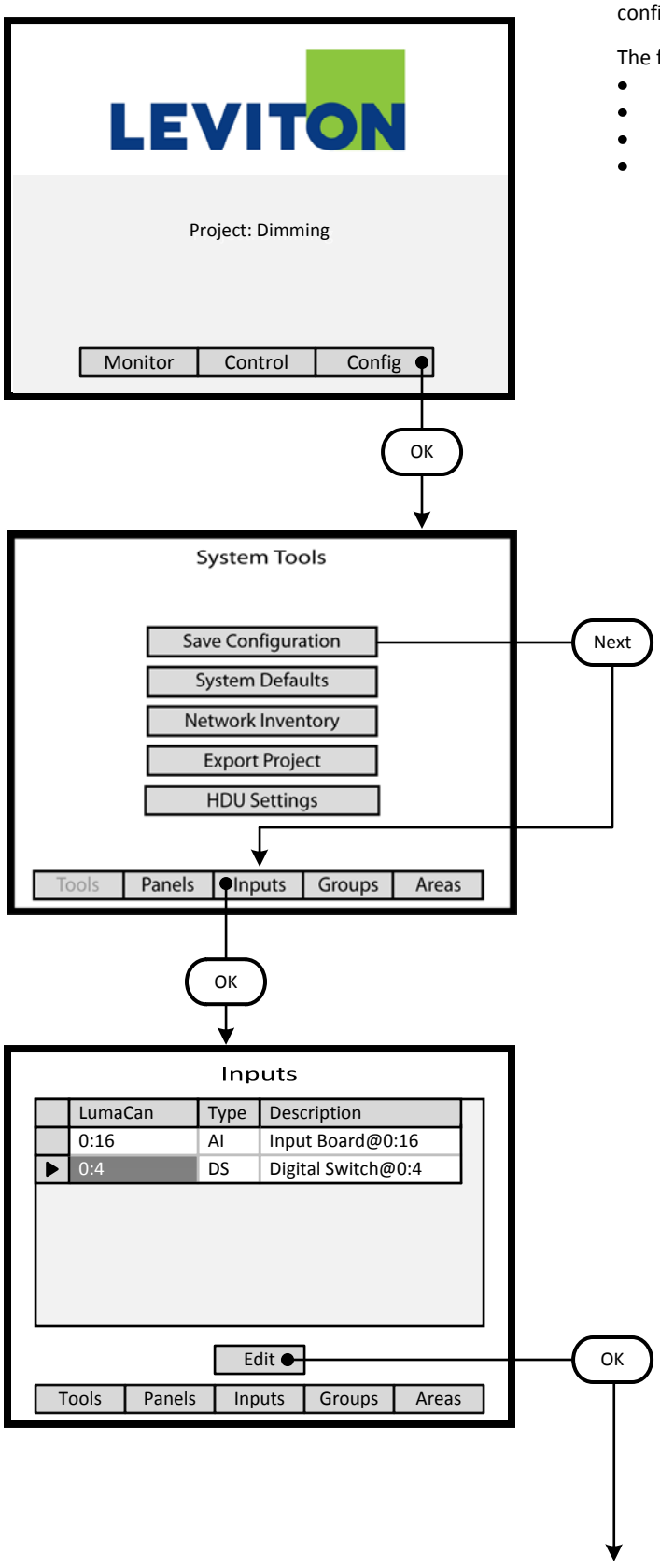
To navigate to the Home screen press the HOME button.

Other Options
To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <***Edit***> *and press OK, to initiate the modification of the selected Schedule.*

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <***Delete***> *and press OK, to erase the selected Schedule.*

To adjust the system clock, navigate to <***Clock***> *and press OK.*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2: Configure Devices

The GreenMAX can be configured to handle a wide variety of input devices. These devices operate at +24vdc and are wired to an input terminal on the Low Voltage (AI) board. Each terminal port must be configured to match the device and its expected functionality.

The following Low Voltage input devices can be connected to the system:

- Occupancy sensors.
- Photocells.
- Switches.
- Contact closures.

Step 2.1

The configuration steps of the Low Voltage Input Card is performed in the <**Config>** section of the HDU software.

Understanding the Screen

There are three sections of the HDU software. The other two sections under the buttons are:
*<**Monitor**> - Used to check the system time, relay status*
*<**Control**> - Access Scheduling*

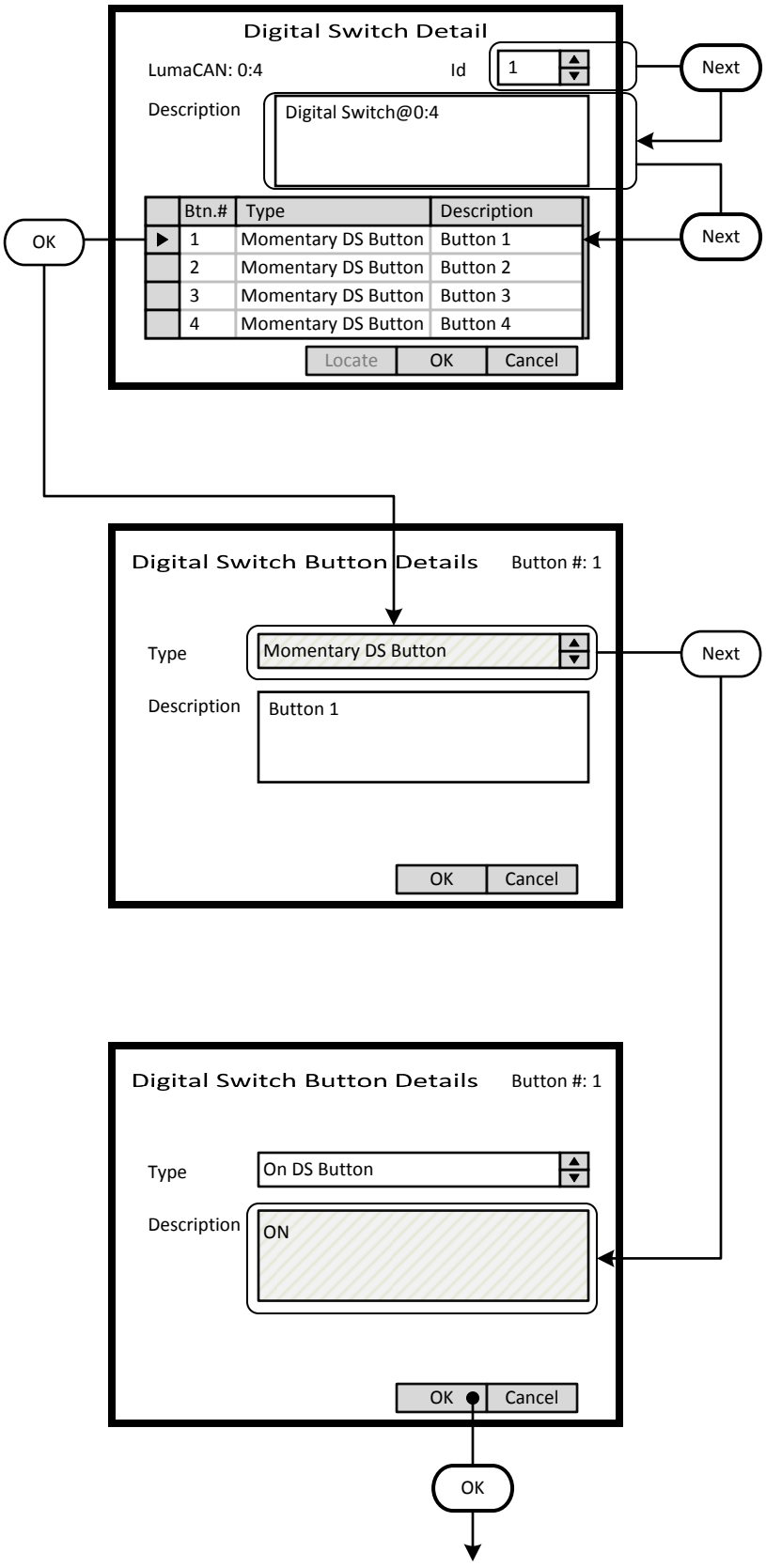
Step 2.2

Use a combination of the UP and DOWN arrows as well as the NEXT button to navigate to the <**Inputs**> onscreen button. Press OK to select.

Step 2.3

The **Inputs** listing shows a Digital Switch at LumaCan ID 4. This is a 4 button Digital Switch to be used for Dimming control. Highlight the device and move the indicator to the appropriate device line. Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <**Edit**> button.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2.4

The **Digital Switch Detail** screen provides an ID setting for informational purposes. This can match the switch number on the building floor plan. For this exercise this will be set to 12.

A switch -**Description**- field is provided that can be filled with a maximum of 25 characters of information.

Button function must be configured. Highlight the Button number and press OK to enter the editing screen.
These fields fill the list on the previous screen.

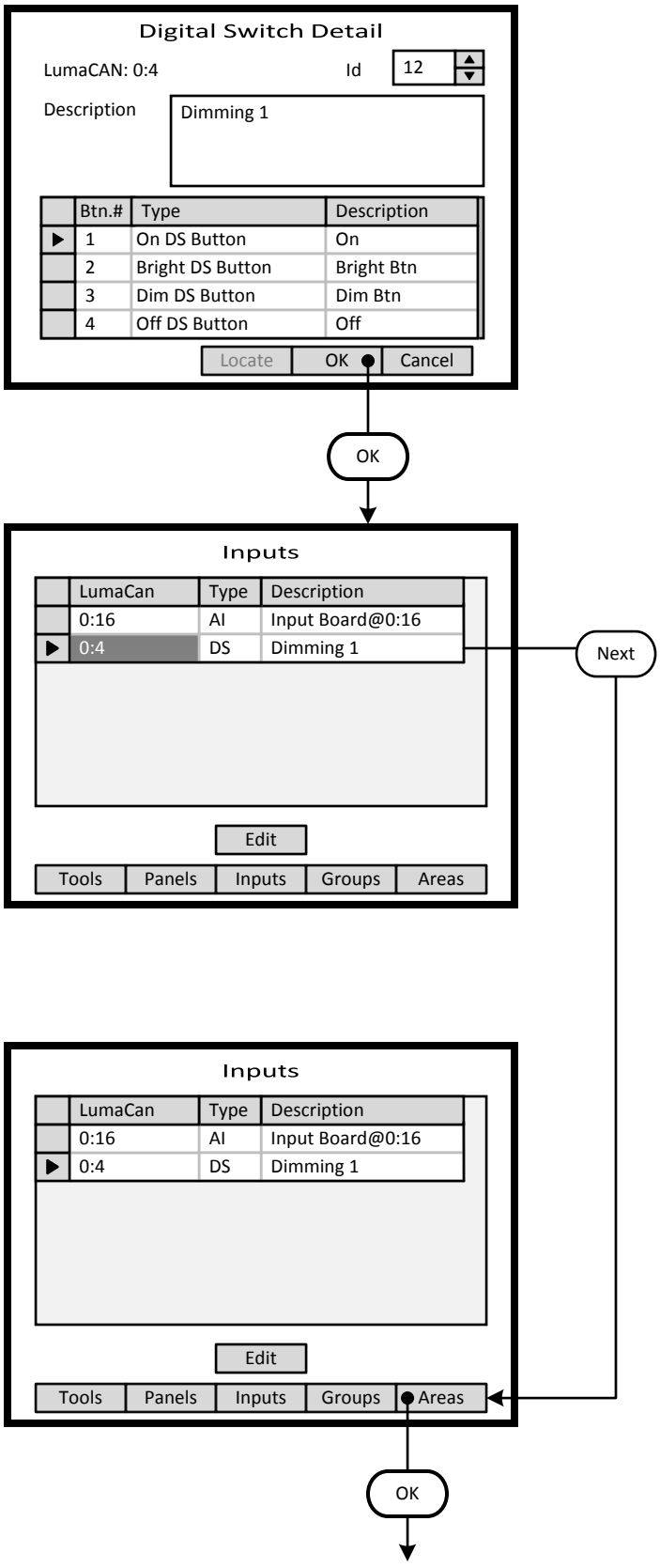
Use the UP or DOWN arrows on the keypad to navigate up or down the list.

Step 2.5

The Digital Switch Button Details screen is used to configure the individual button function and to name the button. Use the UP and DOWN arrows on the keypad to display the desired button function.
The Description field should be used to document the function of the individual buttons. This field is for user reference only.

Understanding the Screen
The type options are:
- *Momentary DS Button*
- *On DS Button*
- *Bright DS Button*
- *Dim DS Button*
- *Off DS Button*

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2.6
This illustration shows the recommended configuration for a Digital Switch used for dimming control application. The button Type fields should match those shown. Each field should be adjusted individually. Button descriptions are entered on the Button Detail Screen shown previous.

Use the UP or DOWN arrows on the keypad to navigate up or down the list.

Use NEXT and BACK to navigate between sections on the screen.

Understanding the Screen
The ID number are for information purposes and can be used to match assigned project switch numbers.

Step 2.7
The Inputs list has a Digital Switch at ID 4 and is described as Dimming 1.

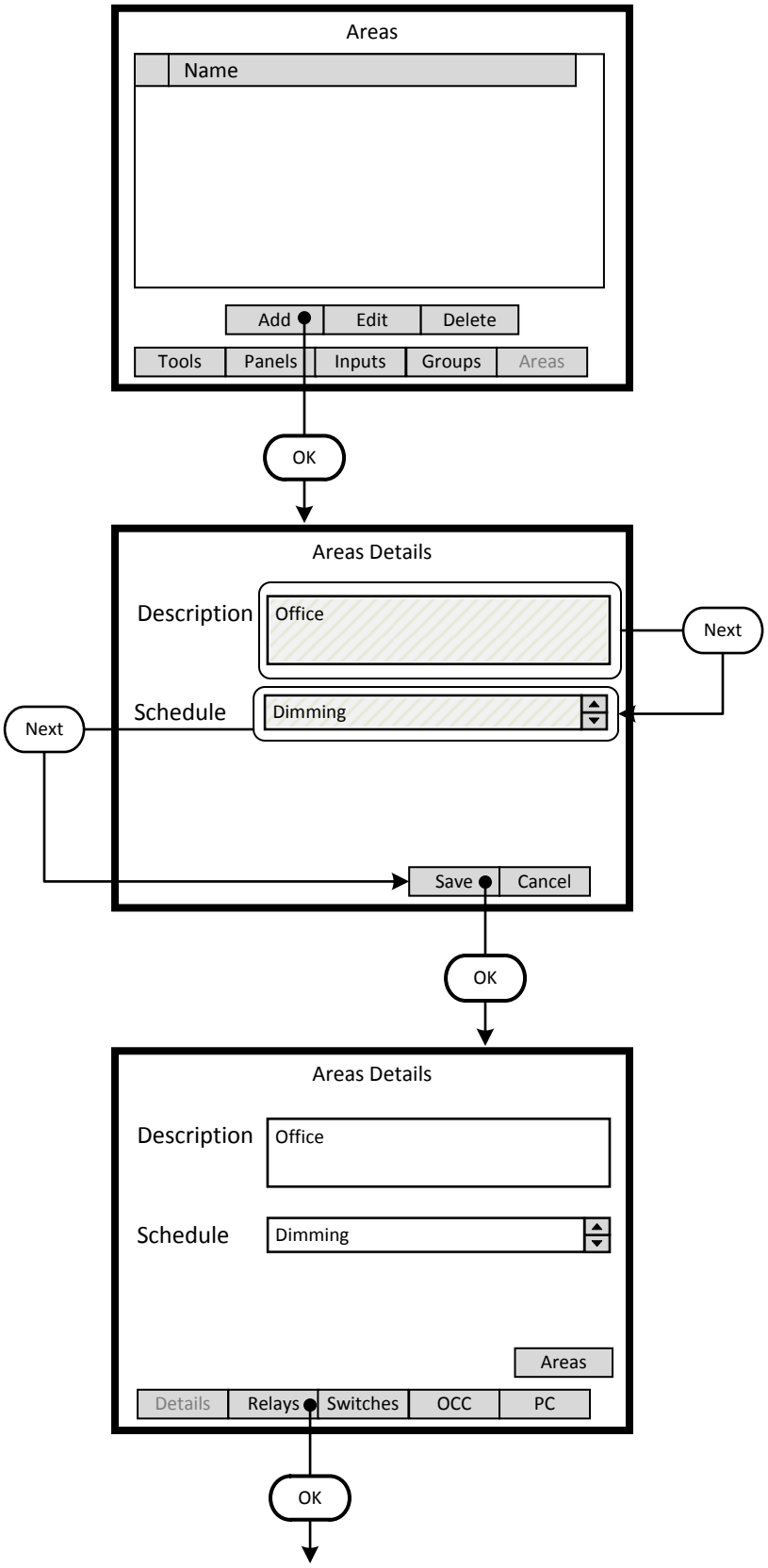
Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <**Areas**> button.

Step 2.8
The Inputs list has an Low Voltage Input Board (AI) at LumaCan ID 16 and a Digital Switch (DS) at LumaCan ID 4 that is described as Dimming 1.

Use NEXT to navigate to the <**Areas**> button. Press OK to advance to the Areas maintenance screen.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name

Step 3: Create an Area



Step 3.1

The **Areas** screen lists all the current Areas available in the system. At this step there are no existing Areas. To create a new Area navigate to the <**Add**> onscreen button and press OK.

Understanding the Screen
There are no Areas in this system.
Description of the onscreen buttons:
<***Edit***> *selecting this onscreen button will allow editing of the highlighted Area in the list.*
<***Delete***> *selecting this onscreen button will permanently remove the highlighted Area from the list.*
<***Tools***> *use to navigate to the System Tools screen.*
<***Panels***> *use to navigate to the Relay Panel Detail Screen*
<***Groups***> *use to navigate to the Group building screen*
<***Areas***> *use to navigate to the Areas configuration screen*

Step 3.2

Enter the desired Area name and detail in the **-Description-** field. Enter as much information as practical.
The Area must be assigned to a Schedule. An area can only be assigned to one schedule at a time. All of the available system Schedules will appear in the **-Schedule-** list box.

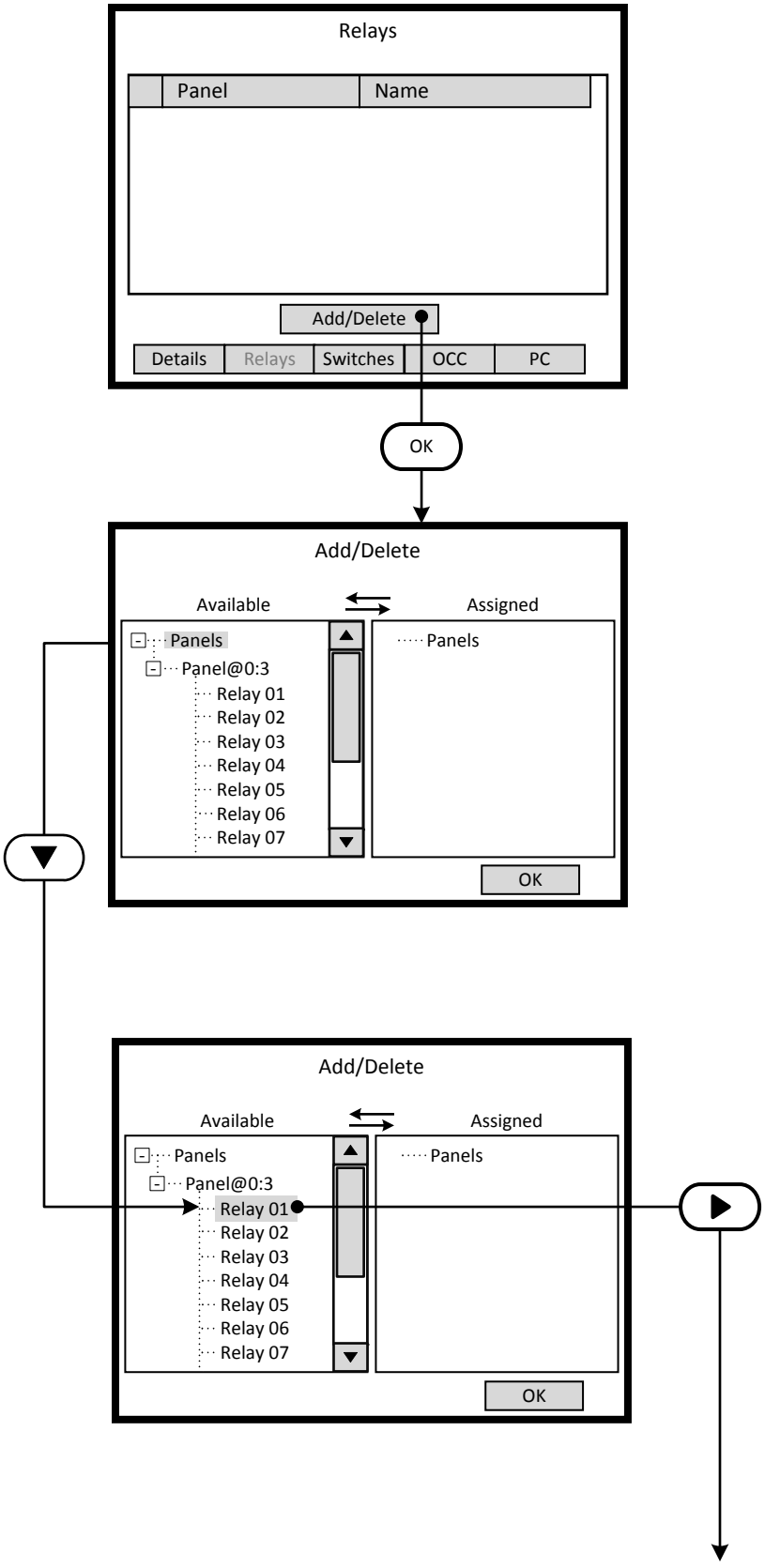
Understanding the Screen
*To appear in the **-Schedule-** list box, Schedules must be created prior to entering this screen. See the "Create a Schedule" section.*
Description of the onscreen buttons:
<***Save***> *selecting this onscreen button will create the Area, save it, and add advance to the next screen*
<***Cancel***> *used to discard entries*

Step 3.3

The newly created Area will contain relays and associated control devices. Additional navigation buttons are available to navigate to screens that populate or edit the contents of the Area. To add relays to the Area, navigate to the <**Relay**> onscreen button and press OK.

Understanding the Screen
Description of the onscreen buttons:
<***Areas***> *use to navigate to the Areas list screen*
<***Relays***> *selecting this onscreen button will allow the addition/editing of assigned relays*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***OCC***> *selecting this onscreen button to add/edit assigned Occupancy Sensors*
<***PC***> *selecting this onscreen button to add/edit assigned Photocells*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 3.4

The **Relays** screen lists all the current relays assigned to the Area. To add a new relay to the Area navigate to the <**Add/Delete**> onscreen button and press OK.

Understanding the Screen
There are currently no relays assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the **Area Details** screen*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***OCC***> *selecting this onscreen button to add/edit assigned Occupancy Sensors*
<***PC***> *selecting this onscreen button to add/edit assigned Photocells*

Step 3.5

The left side of the screen under the heading -**Available**- lists all of the relays that have not been assigned to an Area. If the desired relay is not on this list it has been assigned to another Area. Relays are displayed according to the panel they are installed in. All unassigned relays in the system can be seen on this list.

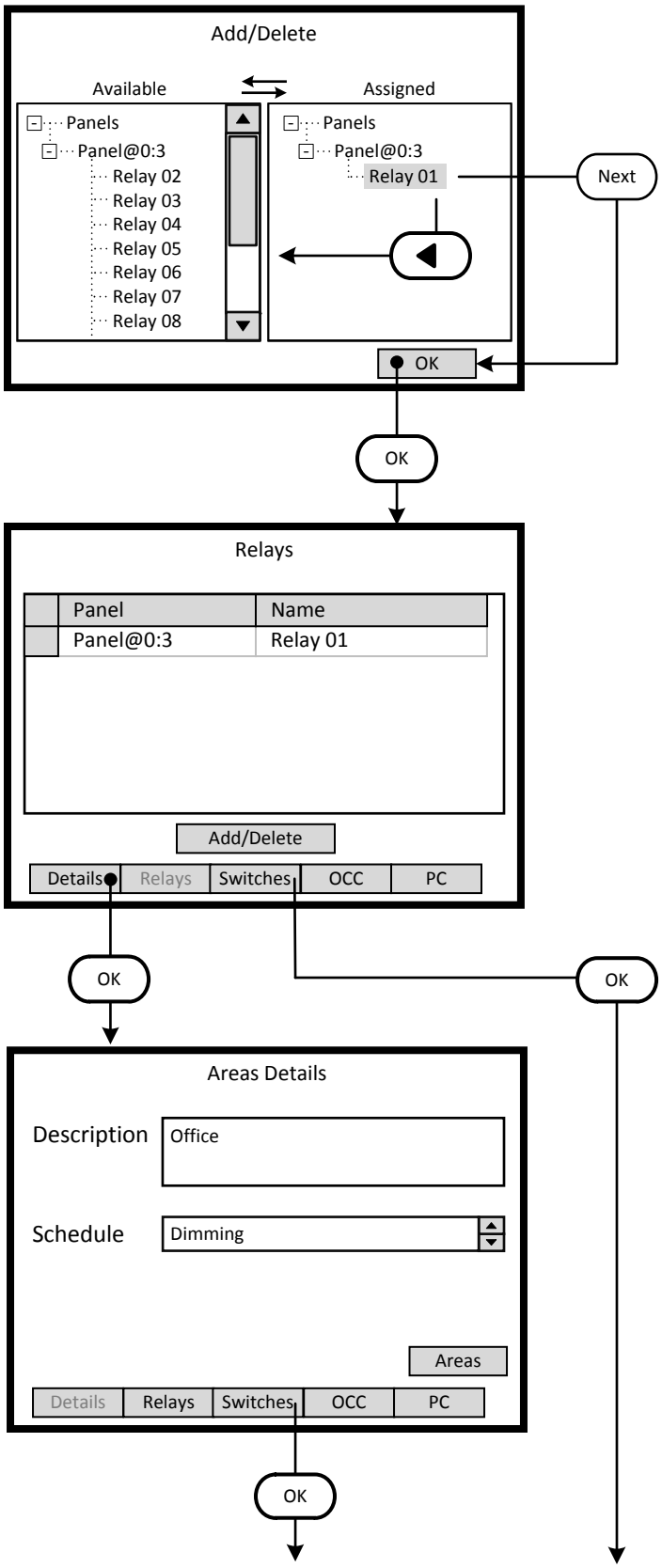
Understanding the Screen
Complete panels may be collapsed by highlighting name on the list pressing OK.
Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the **Relays** list screen.*

Step 3.6

Relays are added to the Area by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this Area.
Relays 01 through 07 are available for assignment.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the Area.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 3.7

Relays are deleted from the Area by moving them from the -**Assigned**- list to the -**Available**- list. This is accomplished by highlighting the desired relay on the right side of the screen and using the left arrow to move it to the right side of the screen. To accept the assignment, navigate to the -**OK**- onscreen button and press OK or Enter.

Understanding the Screen
Currently Relay 01 of Panel 3 has been assignment to the Area.
Relays 02 through 07 are available for assignment.

Step 3.8

The -Relays- screen lists the relays assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next common step is to add switch buttons to the Area.

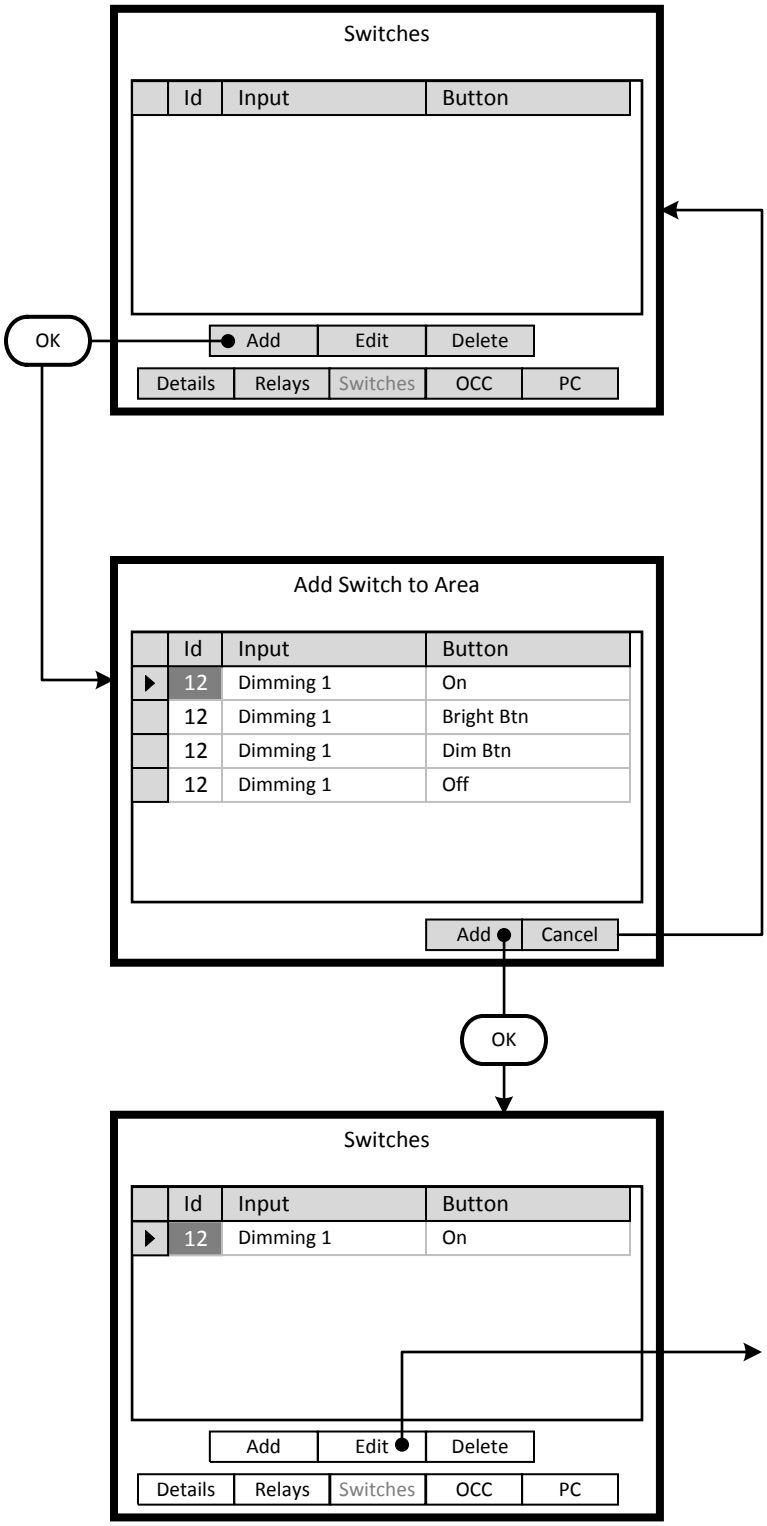
Understanding the Screen
Currently only Relay 01 of Panel 3 has been assignment to the Area.
*There are two navigating paths to the next screen. Using the <**Switches**> onscreen button skips a screen and goes directly to the -**Switches**- screen.*

Description of the onscreen buttons:

*<**Details**>*	*use to navigate to the -**Area Details**- screen*
*<**Switches**>*	*use to navigate to the -**Switches**- screen*
*<**OCC**>*	*use to navigate to the -**Occupancy Sensors**- screen*
*<**PC**>*	*use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name

Step 4: Switch Buttons



Step 4.1

The -**Switches**- screen lists the switch buttons assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next common step is to add switch buttons to the Area.

Understanding the Screen
Currently there are no switch buttons assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.2

The -**Add Switch to Area**- screen lists the available and unassigned switch buttons for the system. As a switch button is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted button, button 1 of the switch at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
<***Cancel***> *use to navigate to the -**Area Details**- screen*

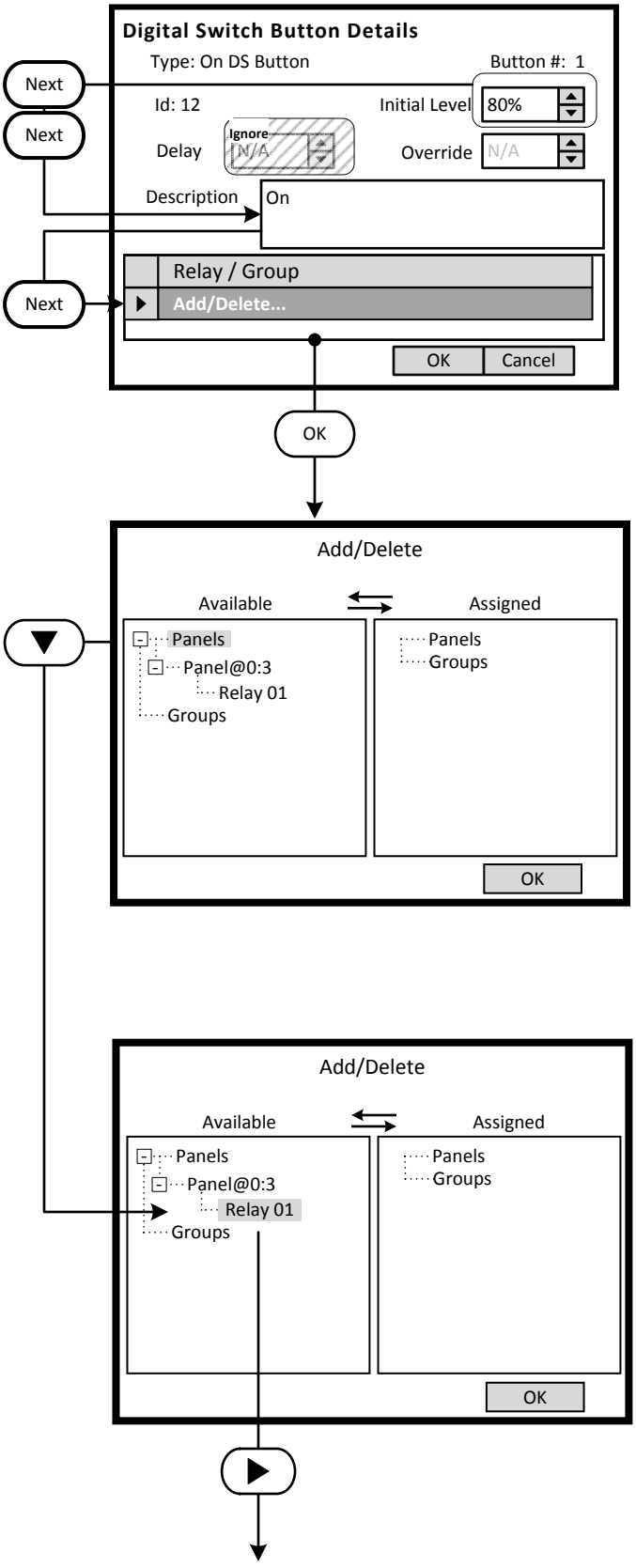
Step 4.3

The -**Switches**- screen lists the switch buttons assigned to the Area. This list will be displayed each time this section of the Area information is entered.

Understanding the Screen
Currently button 1 of the switch at LumaCan address 4 is assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.4

This screen configures the characteristics of the switch button. Enter the value for On in the -**Initial Level**- field, this exercise requires 80%. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*The -**Description**- field can be edited on this screen.*
*Information from the **Digital Switch Detail** screen will be displayed here.*
*Ignore the settings of -**Delay**- and -**Override**-.*

Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

Step 4.5

The left side of the screen under the heading -**Available**- lists all of the relays that have been assigned to an Area. If the desired relay is not on this list it has not been assigned to this Area. Relays are displayed according to the panel they are installed in. Use the navigation keypad to highlight the desired relay.

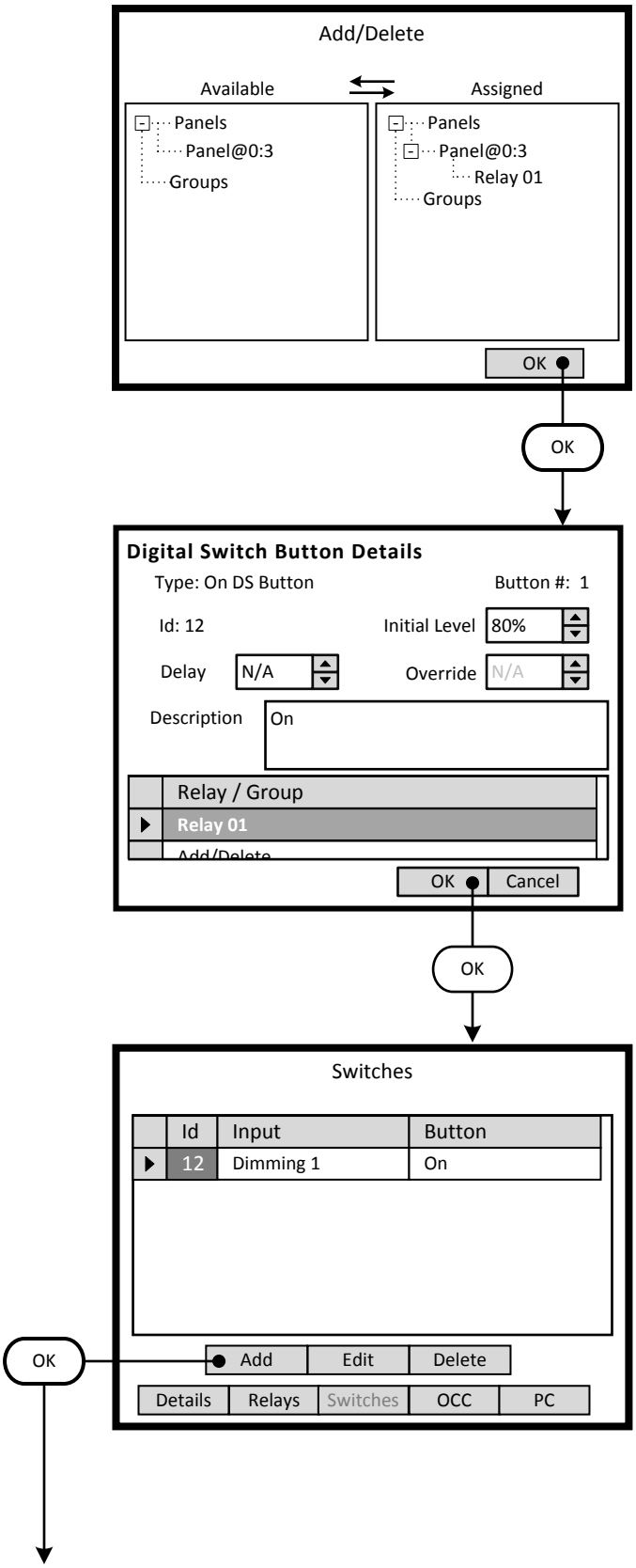
Understanding the Screen
Complete panels may be collapsed by highlighting name on the list pressing OK.
Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the **Relays** list screen.*

Step 4.6

Relays are assigned to the Switch button by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this Switch Button.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the Switch Button.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.7

Relay 01 is assigned to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned-** list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -**Digital Switch Button Details**- screen*

Step 4.8

Relay 01 is assigned to the control of the Switch Button 1.
To remove it, highlight the relay in the -**Assigned-** list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
Relay 01 of Panel 3 will start daylight harvesting when button 1 of switch ID: 12 is pressed.
*The settings of -**Initial Level**-, -**Delay**- and -**Override**- do not apply.*

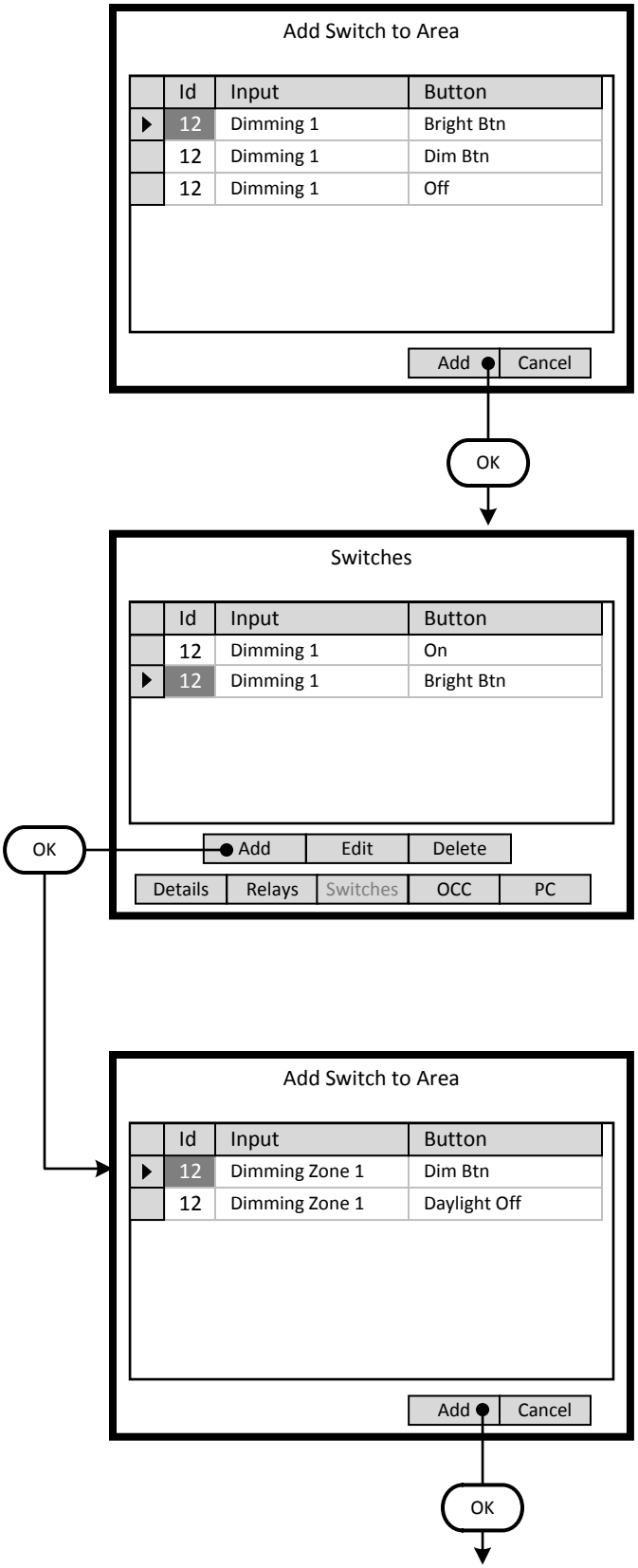
Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -**Switches**- screen*
<***Cancel***> *use to abandon entries and navigate to the -**Switches**- screen*

Step 4.9

All four of the Buttons for the Switch must be assigned to the Area. This summary list will be displayed each time this section of the Area information is entered. Navigate to the <**Add**> button and press **OK** button on the keypad.

Understanding the Screen
Currently there is one switch button assigned to the Area.
Description of the onscreen buttons:
<***Edit***> *use to navigate to the -**Digital Switch Button Details**- screen to make modifications to settings of the highlighted button*
<***Delete***> *use to delete the highlighted button from the Area*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.10

The -**Add Switch to Area**- screen lists the available and unassigned switch buttons for the system. As a switch button is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted button, Bright Btn button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
*<**Cancel**> use to navigate to the -**Area Details**- screen*

Step 4.11

The -**Switches**- screen lists the switch buttons assigned to the Area. This summary list will be increase as each button is added.

Understanding the Screen
Currently 2 buttons are assigned; On, Bright Btn of switch ID 12 at LumaCan address 4.

Description of the onscreen buttons:
*<**Add**> use to navigate to the -**Add Switch to Area**- screen*
*<**Delete**> use to delete the highlighted button*
*<**Details**> use to navigate to the -**Area Details**- screen*
*<**Relays**> use to navigate to the -**Relays**- screen*
*<**OCC**> use to navigate to the -**Occupancy Sensors**- screen*
*<**PC**> use to navigate to the -**Photocells**- screen*

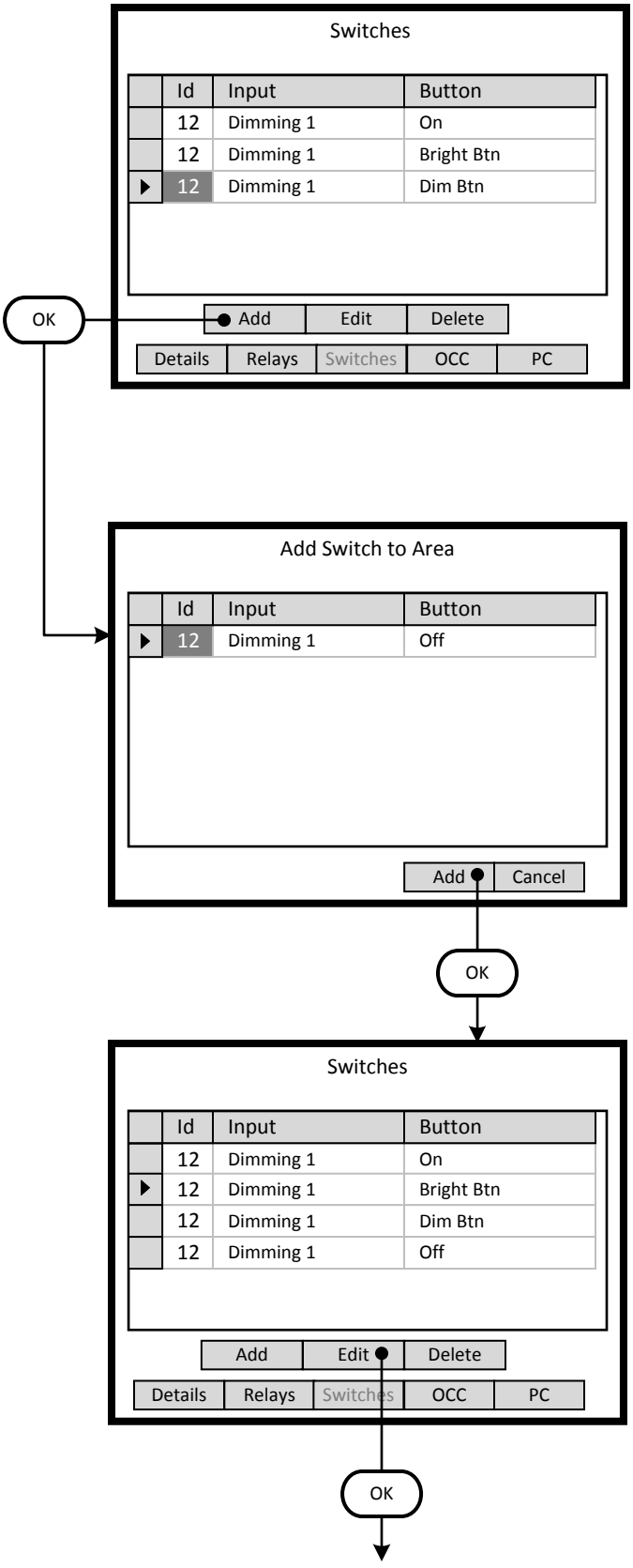
Step 4.12

Continue to add all of the relevant buttons to the Area.

Understanding the Screen
*The highlighted button, Dim Btn button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
*<**Cancel**> use to navigate to the -**Area Details**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.13

The -**Switches**- screen lists the switch buttons assigned to the Area. This summary list will be increase as each button is added.

Understanding the Screen
Currently 3 buttons are assigned; On, Bright Btn, Dim Btn of switch ID 12 at LumaCan address 4.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.14

Continue to add all of the relevant buttons to the Area.

Understanding the Screen
*The highlighted button, Off button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

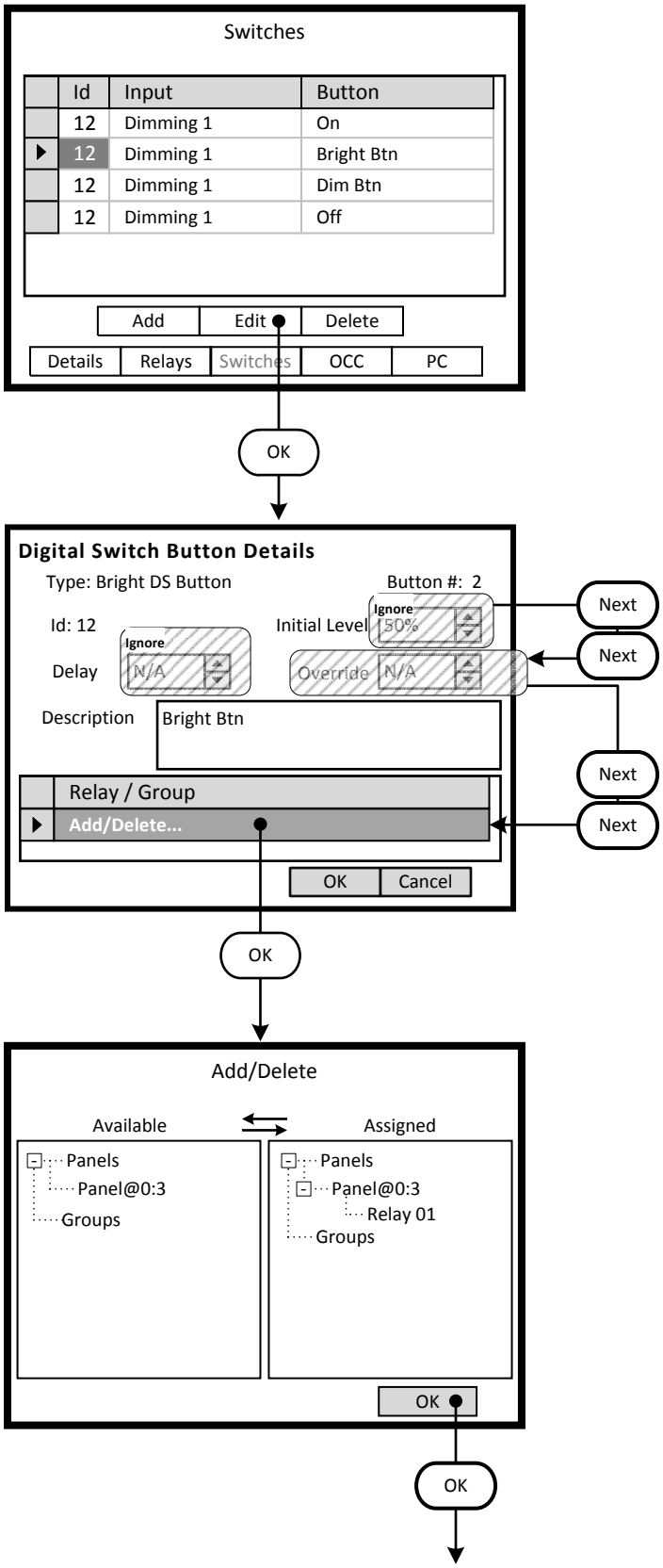
Description of the onscreen buttons:
<***Cancel***> *use to navigate to the -**Area Details**- screen*

Step 4.15

All four of the buttons for the switch have been added to the Area. Each of the buttons must be assigned to the relay to be controlled. The On button was previously configured in Step 4.4. Navigate to the <**Edit**> button and press **OK** button on the keypad to configure each button of the remaining three buttons.

Understanding the Screen
Currently there is one switch button assigned to the Area.
Description of the onscreen buttons:
<***Delete***> *use to delete the highlighted button from the Area*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.16

The three new buttons listed on the -**Switches**- screen require configuration. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.17

The Bright DS button will temporarily increase the light level from the Target Level of the photocell. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Initial Level**-, -**Delay**-, and -**Override**-.*
Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

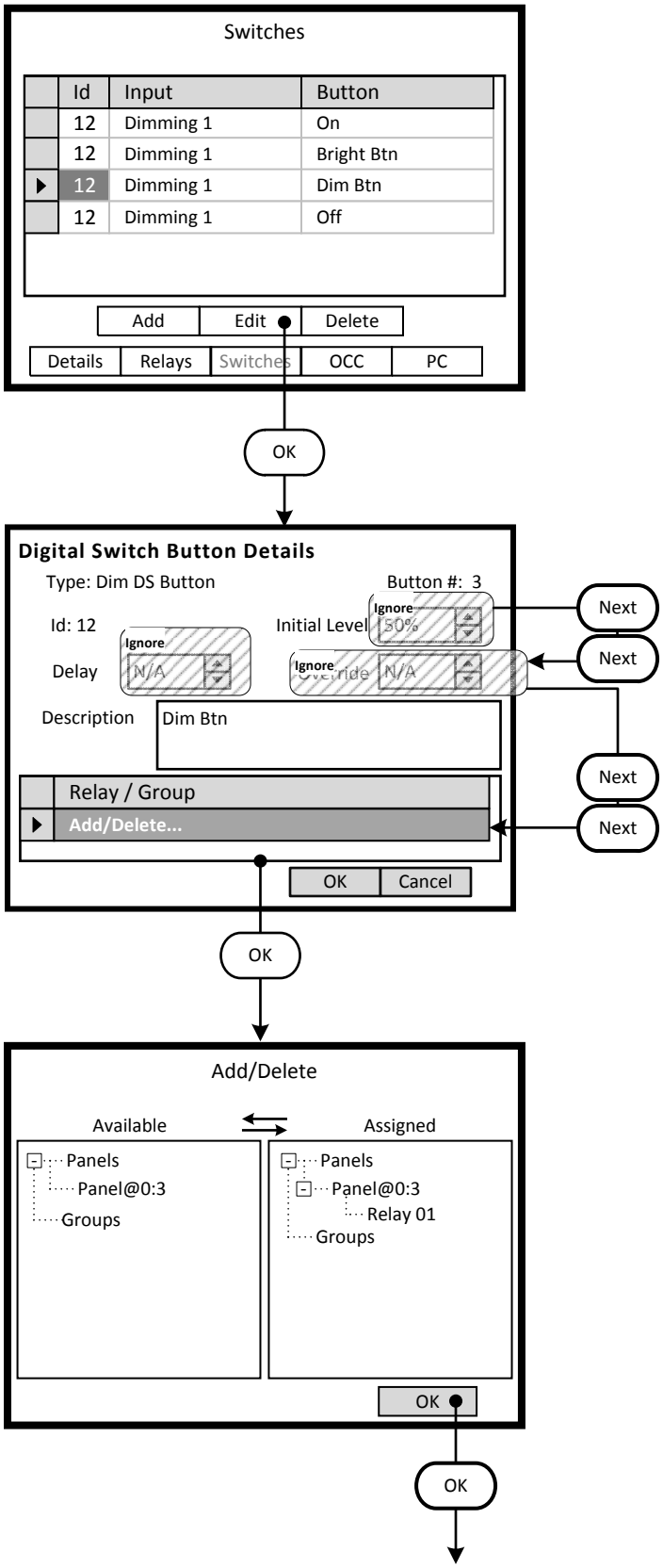
Step 4.18

Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.19

Configure the next button listed on the -**Switches**- screen. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.20

The Bright DS button will temporarily decrease the light level from the Target Level of the photocell. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Initial Level**-, -**Delay**-, and -**Override**-.*
Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

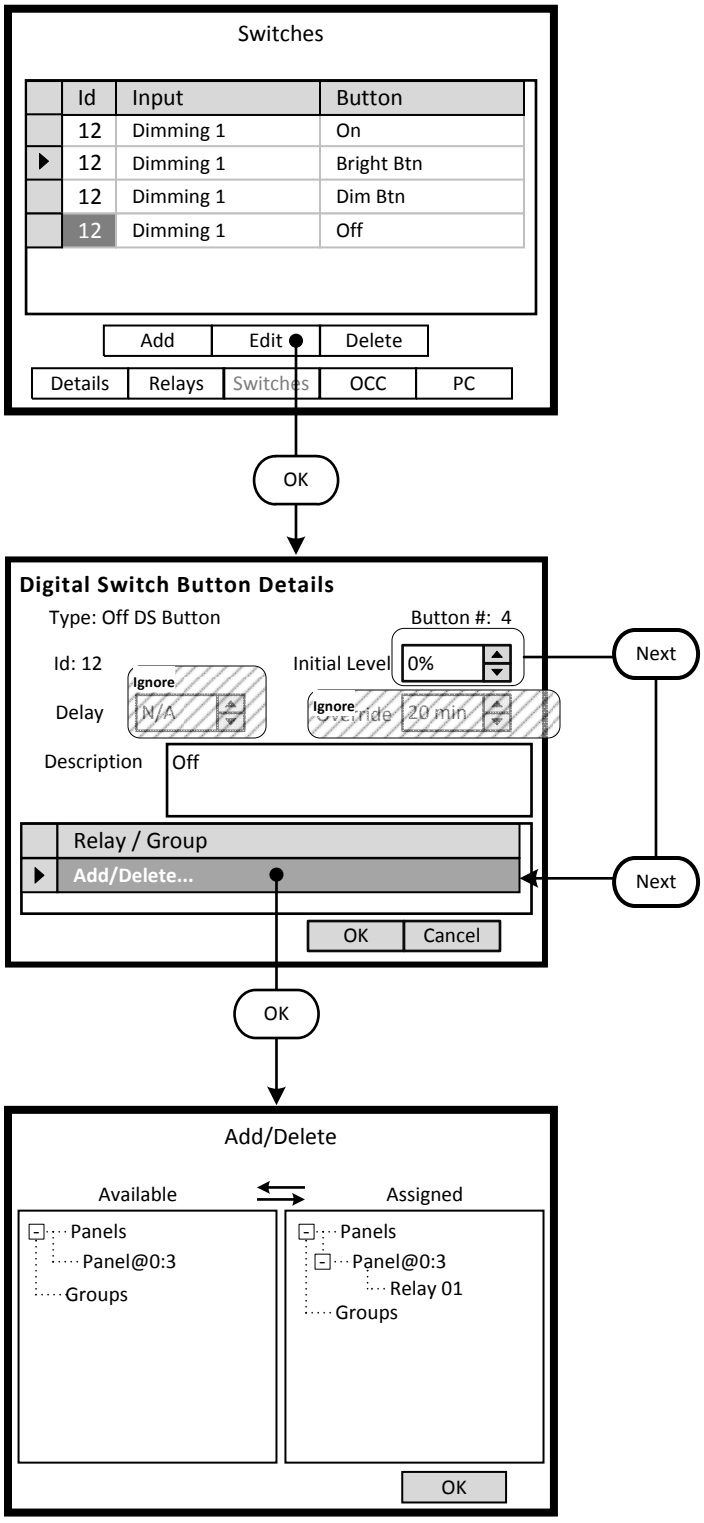
Step 4.21

Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.22

The three new buttons listed on the -**Switches**- screen require configuration. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.23

The Off DS button will turn Off the zone. The light level will dim to zero output and turn off the relay. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Delay**- and -**Override**-.*

Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

Step 4.24

Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

B10 Daylight Harvesting - Programming Overview

This section will present the typical steps required to program a GreenMAX system to provide Dimming functionality.

The fundamental components required for Dimming control are:

- GreenMAX Dimming and Switching Relay Modules – RELAY-1DS
- Low Voltage Photocell – 24VDC with analogue 0 to 10VDC output range - mandatory
- Low Voltage Occupancy Sensor – 24VDC with On/Off signal output – optional
- 4 Button Switch - either Low Voltage or Digital

Office Dimming Schedule

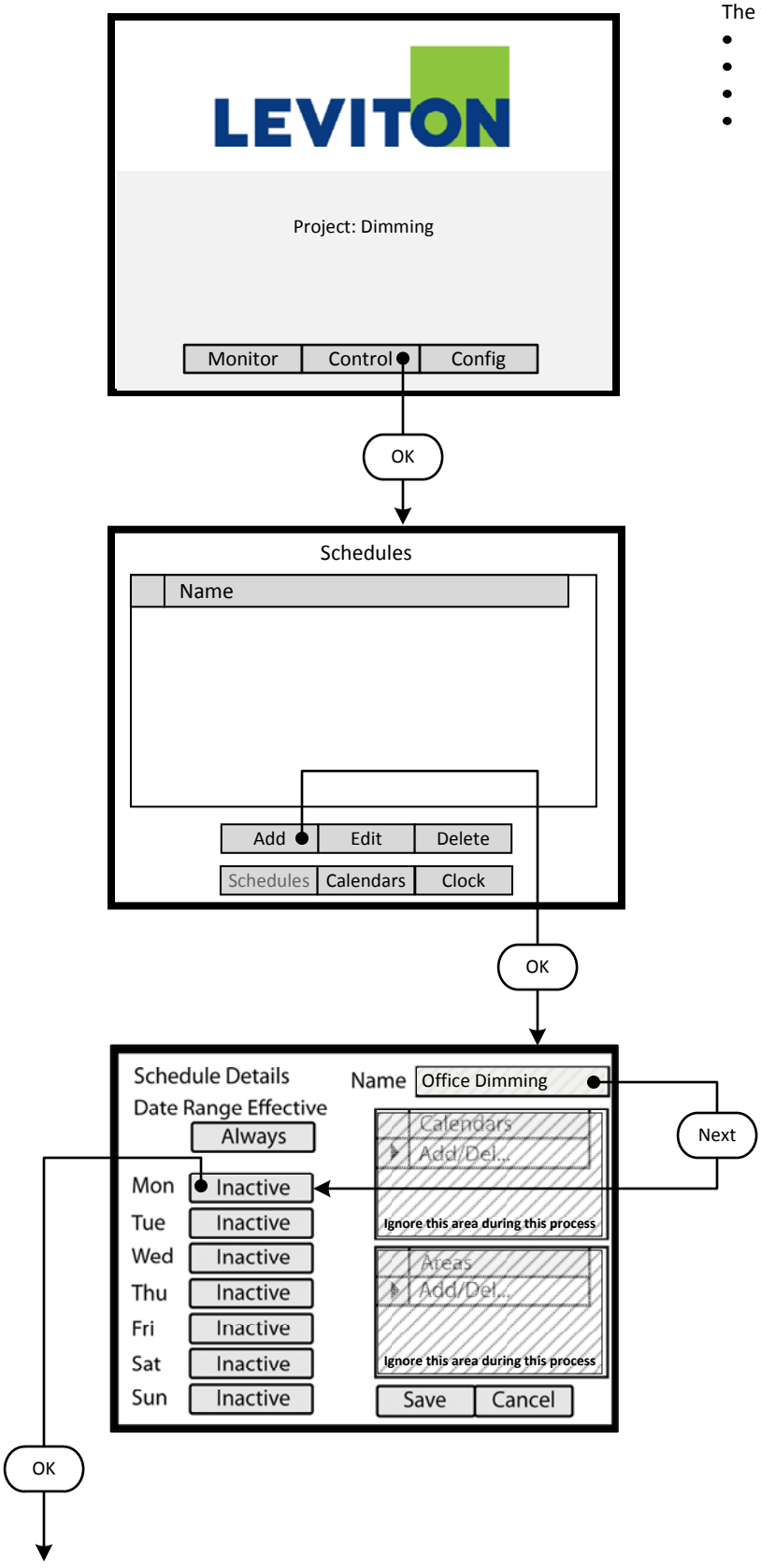
Monday to Sunday

8:00am	Office Dimming	B10 Lights will be controlled by their respective devices: Occupancy Sensors – 10 minute delay Photocells – 35 foot-candle initial target value – 10 minute delay Switch Buttons (4): On Button – starts Daylight Harvesting Bright Button – with Over- ride time Dim Button – with Over-ride time Off Button – fades lights to OFF
5:00pm	OFF sweep	B7 Lights will be turned OFF

Programming Checklist

- ❑ Create a schedule.
- ❑ Configure Low Voltage inputs as required.
  (occupancy sensors, photocells, low voltage switches)
- ❑ Configure switch buttons. (On/Bright/Dim/Off)
- ❑ Create an Area.
- ❑ Assign a schedule to an Area.
- ❑ Add relays to Area.
- ❑ Add switch buttons to area.
- ❑ Assign relays to switch buttons
- ❑ Add occupancy sensor to Area.
- ❑ Assign relays to occupancy sensor.
- ❑ Add photocell to area.
- ❑ Assign relays to the photocell.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1: Create a Schedule

Programming operation of the GreenMAX is based on running Schedules. A Schedule can be considered a default seven (7) day pattern of operation.

The following rules apply:

- An Area requires a Schedule to operate.
- Only one Schedule can be assigned to an Area.
- A Schedule can be assigned to multiple Areas.
- Schedules reside in the GreenMAX system and can be accessed through the Handheld Display Unit (HDU).

Step 1.1

To create a Schedule, enter the <**Control**> section of the Handheld Display Unit (HDU) software.

Understanding the Screen
There are three sections of the HDU software. The sections under the buttons are:
<**Monitor**> - *Used to check the system time/date, relay status*
<**Control**> - *Access Scheduling*
<**Config**> - *Configuration of system including set-up of Areas*

Step 1.2

The first <**Control**> HDU screen lists the existing Schedules available in your GreenMAX System. The screen shown indicates that there are no Schedules available or created.

By navigating to <**Add**> and pressing OK, this will initiate the creation of a Schedule.

Other Options
To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <**Edit**> *and press OK, to initiate the modification of the selected Schedule.*

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <**Delete**> *and press OK, to erase the selected Schedule.*

Step 1.3

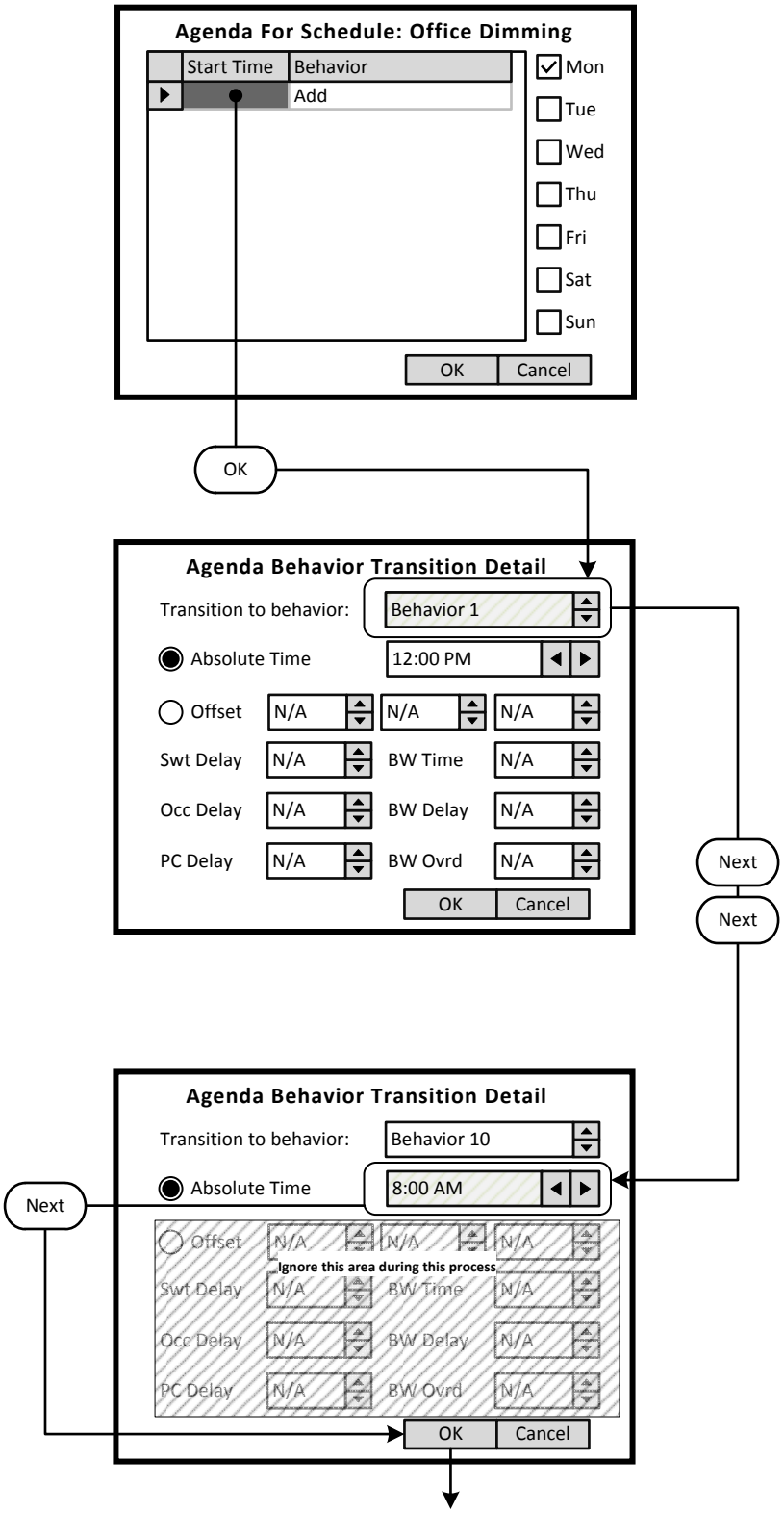
The screen is entered with the -**Name**- field highlighted. Enter the desired name of your Schedule using the alpha numeric keypad of the HDU. When complete, press the NEXT button on the navigation keypad. The cursor will advance to the <**Monday**> button.

Understanding the Screen
The label value of "Inactive" shown on the <**Monday**> *button indicates that there is currently no Behavior transitions programmed for this day. The same is true for all days, Monday through Sunday, of this schedule.*

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.4

The screen is entered at the first line of the Agenda. There are a total of 24 Behavior Transition times available per day. Clicking OK will advance to the Behavior Transition Detail screen.

Understanding the Screen
This Agenda only applies to Monday, as shown here.
*<**OK**> - Will save the settings or changes*
*<**Cancel**> - Will discard the changes*

Step 1.5

The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consulate the Behavior chart in the Manual for descriptions. For this example change to Behavior 10.

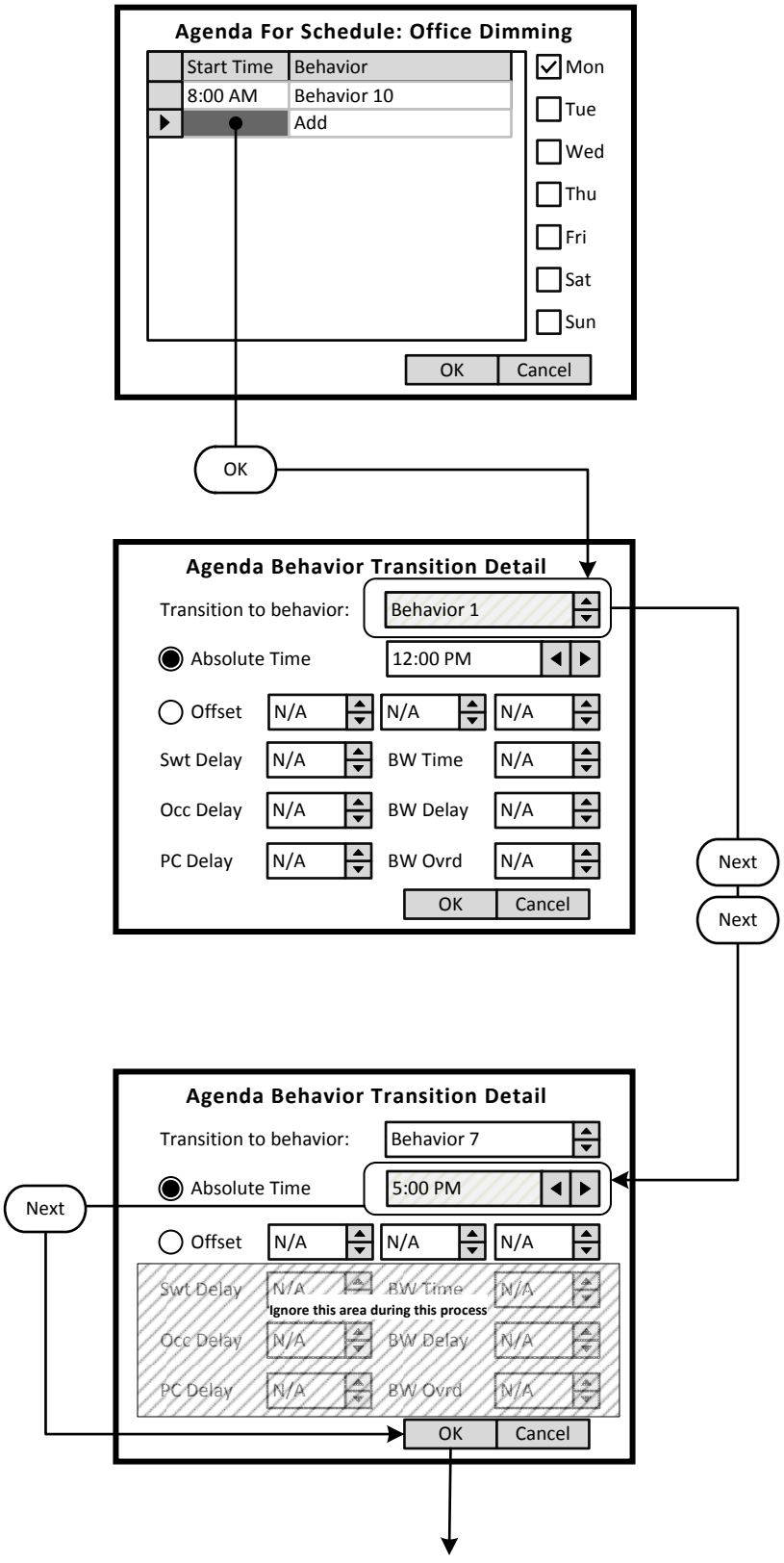
Understanding the Screen
<**Offset**> *provides access to Sunrise and Sunset settings for Astronomical clock times.*
-**BW Time**-, -**BW Delay**-, -**BW Ovrd**- - *These are the Blinkwarn settings that apply to this Behavior Transition only. They will override the Global Blinkwarn Settings set in the System Settings section.*

Step 1.6

Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 8:00 AM.

Understanding the Screen
*-**Swt Delay**- is used if the switch in the associated Area is to function as a Timed Off switch. This is the amount of time the lights will stay On after a button press, and before they will turn Off.*
*-**Occ Delay**- This is the amount of time the lights will stay On after the occupancy sensor does not detect occupancy and before they will turn Off.*
*-**PC Delay**- This is the amount of time the lights will stay On after the photocell trigger point is exceeded and before they will turn Off.*

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



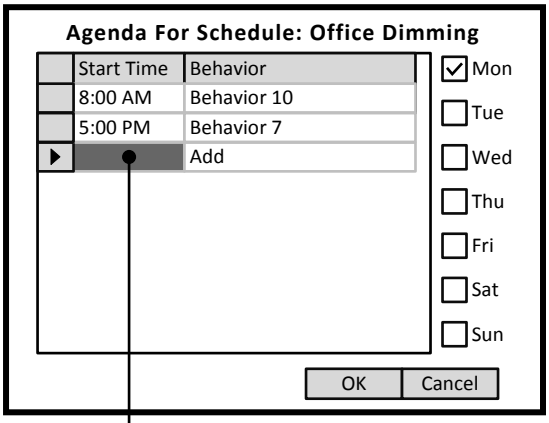
Step 1.7
Navigate to the Add line of the list, in this case the second line. Click OK to advance to the Behavior Transition Detail screen.

Understanding the Screen
This Agenda only applies to Monday, as shown here.
A transition to Behavior 10 will occur Monday at 8:00 AM.

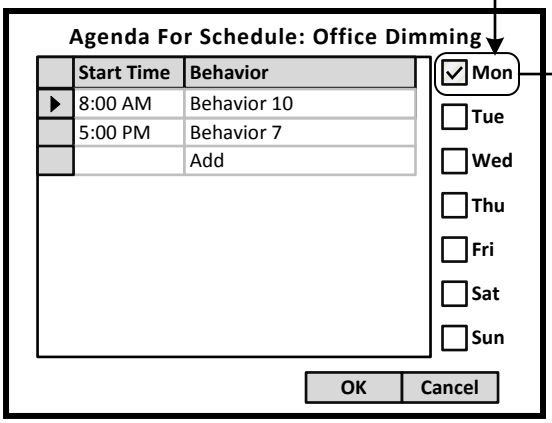
Step 1.8
The Behavior Transition Detail screen is entered at the Behavior selection box. Use the UP or DOWN arrows to choose the desired Behavior. Consulate the Behavior chart in the Manual for descriptions. For this example change to Behavior 7 (OFF).

Step 1.9
Use a combination of the UP and DOWN arrows as well as the NEXT button to change the time to 5:00 PM. When complete, use the NEXT button to navigate to the **<OK>** on screen button.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



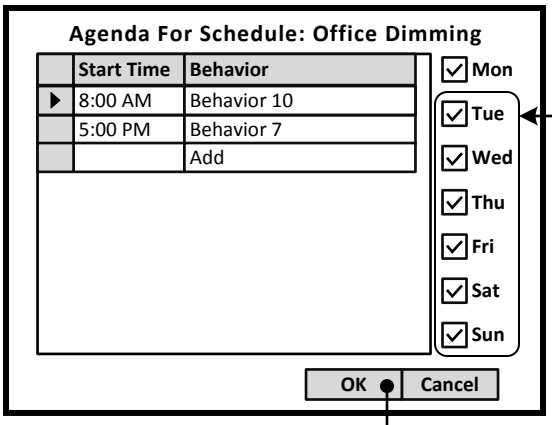
Next



Repeat this button press combination to fill all check boxes (Mon thru Sun)

Next

OK



Step 1.10
To apply this Agenda or pattern of Behavior to each day of the week press Next to advance to the Day column.

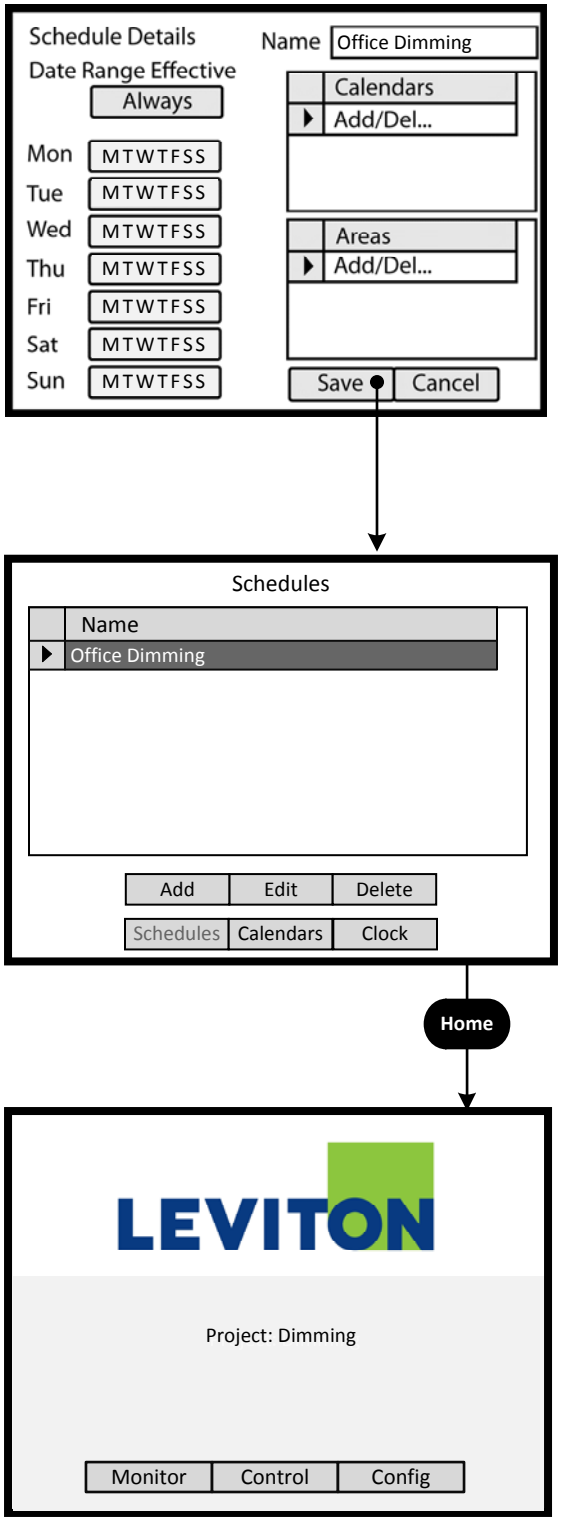
Understanding the Screen
This Agenda only applies to Monday, as shown here.
A transition to Behavior 10 will occur Monday at 8:00 AM.
A transition to Behavior 7 will occur Monday at 5:00 PM.

Step 1.11
Press Next to the -**Tuesday**- check box.
Press -**OK**- to check the box, this will add Tuesday to the active list.

Step 1.12
Use a combination of the NEXT and OK to fill in the Tuesday through Sunday check boxes.

Understanding the Screen
This Agenda only applies to Monday through Sunday.
A transition to Behavior 10 will occur each day at 8:00 AM.
A transition to Behavior 7 will occur each day at 5:00 PM.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 1.13
To save the Schedule, press the NEXT button on the navigation keypad to advance to the <**Save**> button.

Understanding the Screen
The label value of "MTWTFSS -" on the <**Monday>** *through* <**Sunday**> *indicates that the same Agenda applies to each of these days.*

There are no Exception Calendars associated with this Schedule.

This Schedule has not been assigned to any Areas.

Step 1.14
There is only one Schedule available in the system for the dimming pattern of behavior.

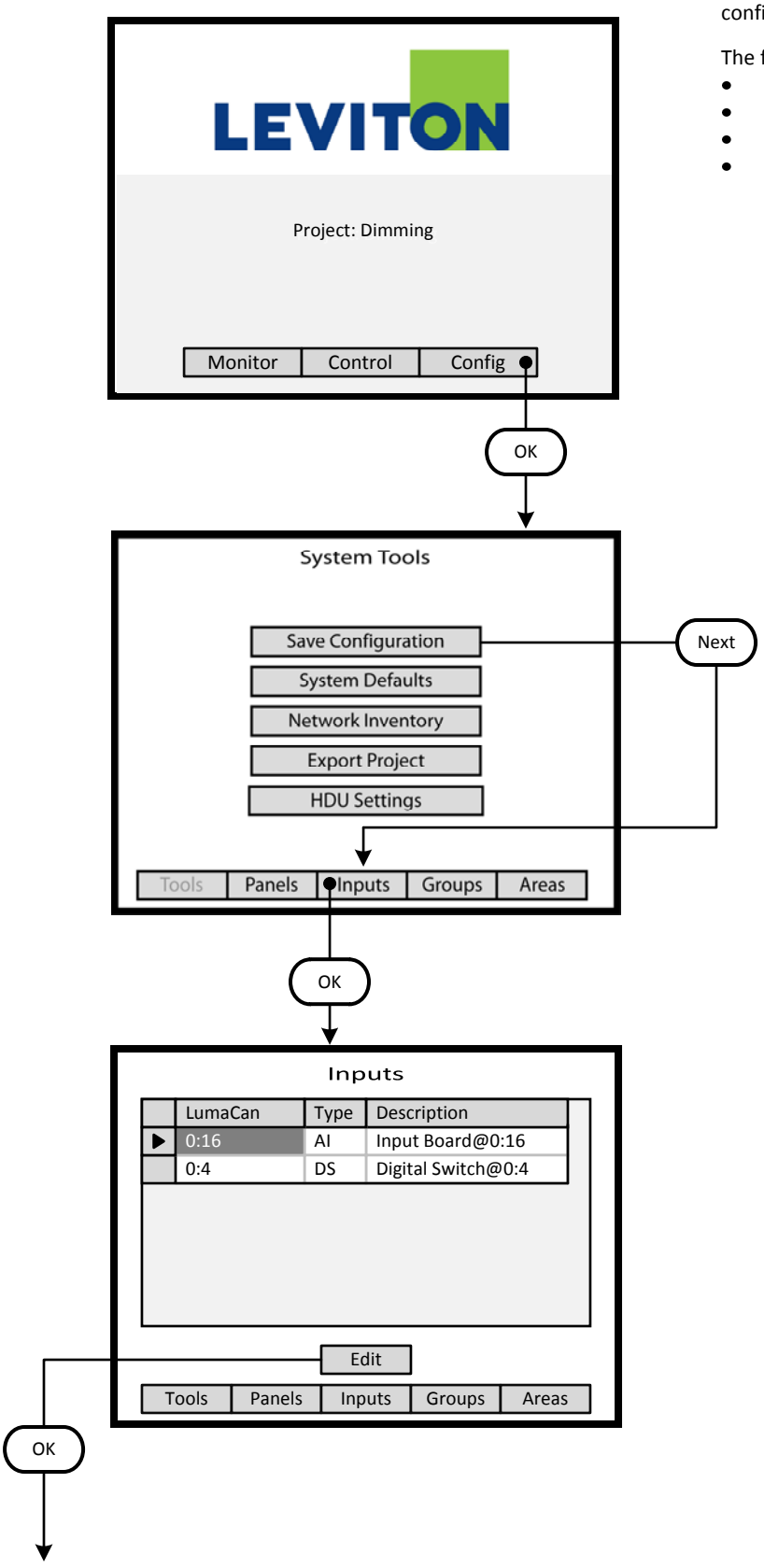
To navigate to the Home screen press the HOME button.

Other Options
To modify an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <***Edit***> *and press OK, to initiate the modification of the selected Schedule.*

To delete an existing Schedule, highlight the appropriate Schedule on the list. Navigate to <***Delete***> *and press OK, to erase the selected Schedule.*

To adjust the system clock, navigate to <***Clock***> *and press OK.*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2: Configure Devices

The GreenMAX can be configured to handle a wide variety of input devices. These devices operate at +24vdc and are wired to an input terminal on the Low Voltage (AI) board. Each terminal port must be configured to match the device and its expected functionality.

The following Low Voltage input devices can be connected to the system:

- Occupancy sensors.
- Photocells.
- Switches.
- Contact closures.

Step 2.1

The configuration steps of the Low Voltage Input Card is performed in the <**Config>** section of the HDU software.

Understanding the Screen

There are three sections of the HDU software. The other two sections under the buttons are:
*<**Monitor**> - Used to check the system time, relay status*
*<**Control**> - Access Scheduling*

Step 2.2

Use a combination of the UP and DOWN arrows as well as the NEXT button to navigate to the <**Inputs**> onscreen button. Press OK to select.

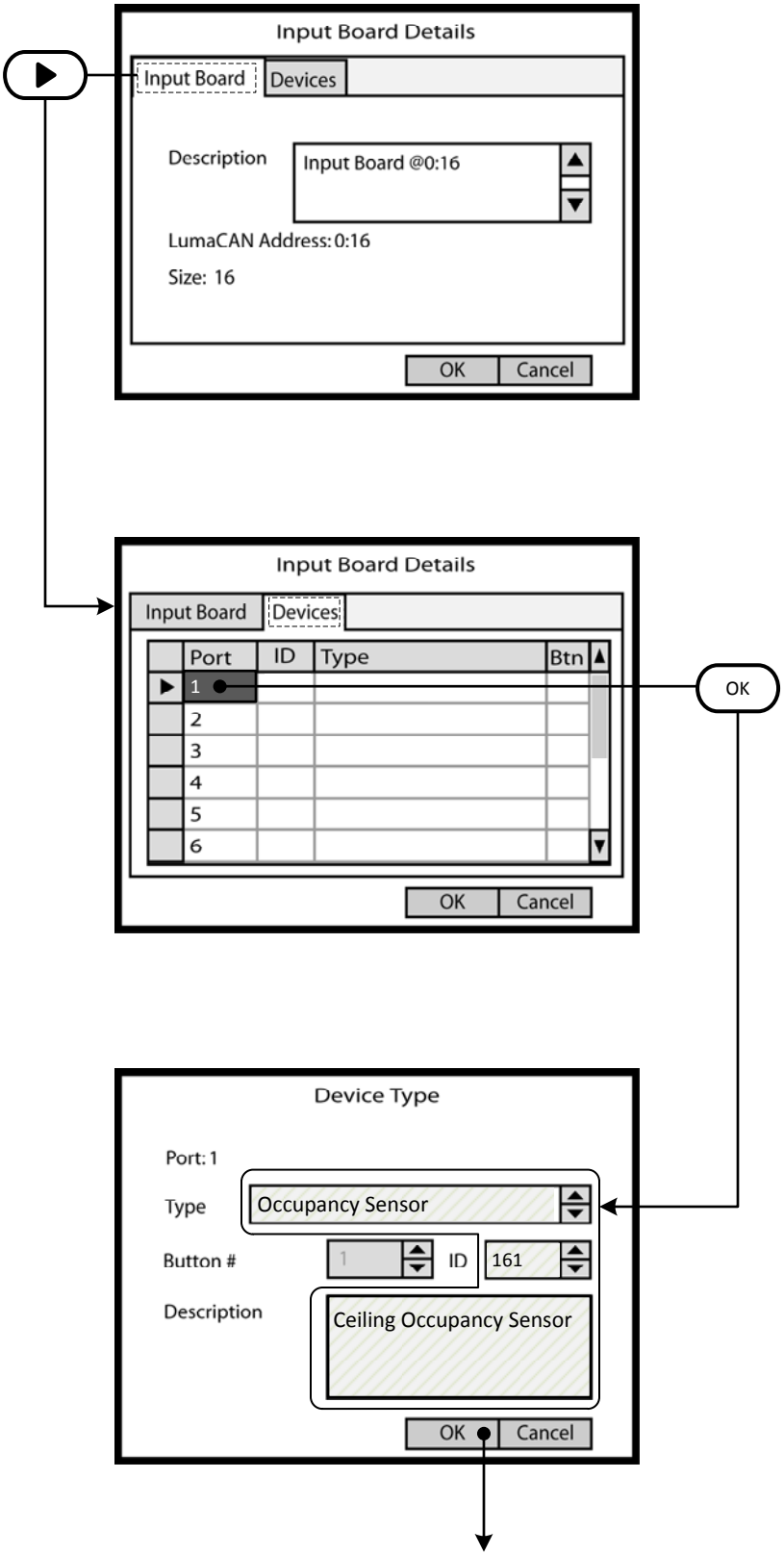
Step 2.3

The Network Inventory will provide a listing of all system Input devices. This includes both Low Voltage Input Boards (AI) and Digital switches.

Understanding the Screen
There are two Input Devices in this system.
There is a 16 input AI board at address ID 16.
There is a 4 button Digital Switch at address ID 4.

Description of the onscreen buttons:
*<**Edit**> selecting this onscreen button will allow editing of the highlighted device in the list.*
*<**Tools**> use to navigate to the **System Tools** screen.*
*<**Panels**> use to navigate to the **Relay Panel Detail Screen***
*<**Groups**> use to navigate to the **Group** building screen*
*<**Areas**> use to navigate to the **Areas** configuration screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2.4

The **Input Board Details** screen displays the number of inputs, the LumaCan address ID and the -**Description**- field. Enter job specific description in this field.
Once the correct information is entered, use the RIGHT arrow to move to the -**Devices**- tab at the top of the screen.

Understanding the Screen
The other onscreen buttons are:
*<**OK**> - Used to accept the entries*
*<**Cancel**> - Used to discard entries*

Step 2.5

The -**Devices**- tab reveals a list of the Input Ports on the AI Board being configured. Ports are numbered sequentially in quantities of 8 or 16. No data entry can be made on this screen. Highlight the Input Port number and press OK to enter the editing screen.

Use the UP or DOWN arrows on the keypad to navigate up or down the list. The scroll bar to the right indicates position on the list.

If the wrong device type appears on the list, highlight the Input Port number and press CLEAR on the keypad.

Understanding the Screen
No devices have been configured for this AI board.
The onscreen buttons are:
*<**OK**> - Used to accept the entries*
*<**Cancel**> - Used to discard entries*

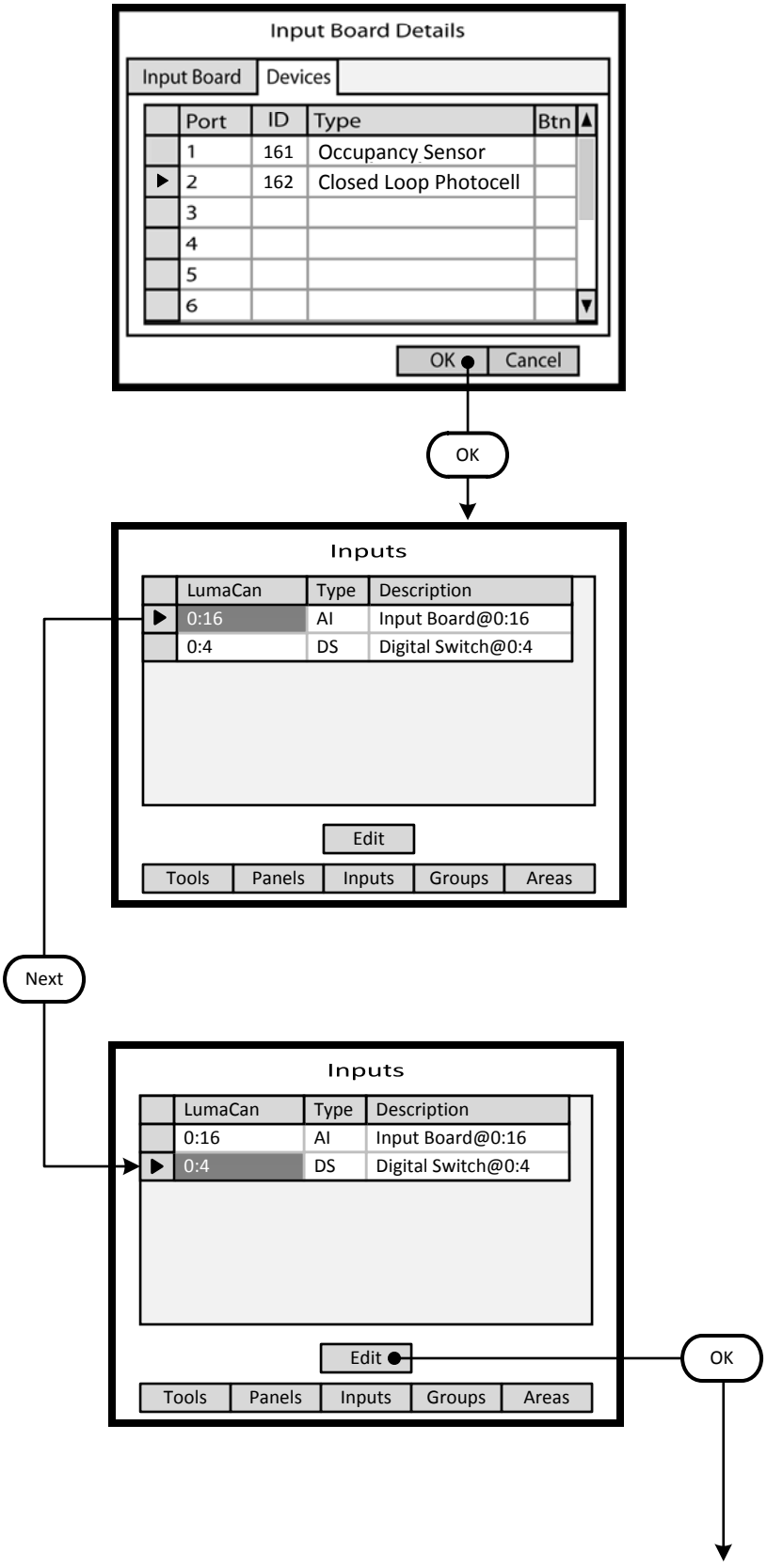
Step 2.6

The Device Type screen is used to select the type of device that is wired to the input port. Use the UP and DOWN arrows on the keypad to display the desired device.
The Description field should be used to document the location of the device.

Understanding the Screen
The -Button #- is available for display purposes only and does not have any configuration value.
The description is limited to 25 characters.

The -ID- is available for display purposes only and does not have any configuration value. It can be used to match the numbering on project drawings. Maximum value is 1000.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



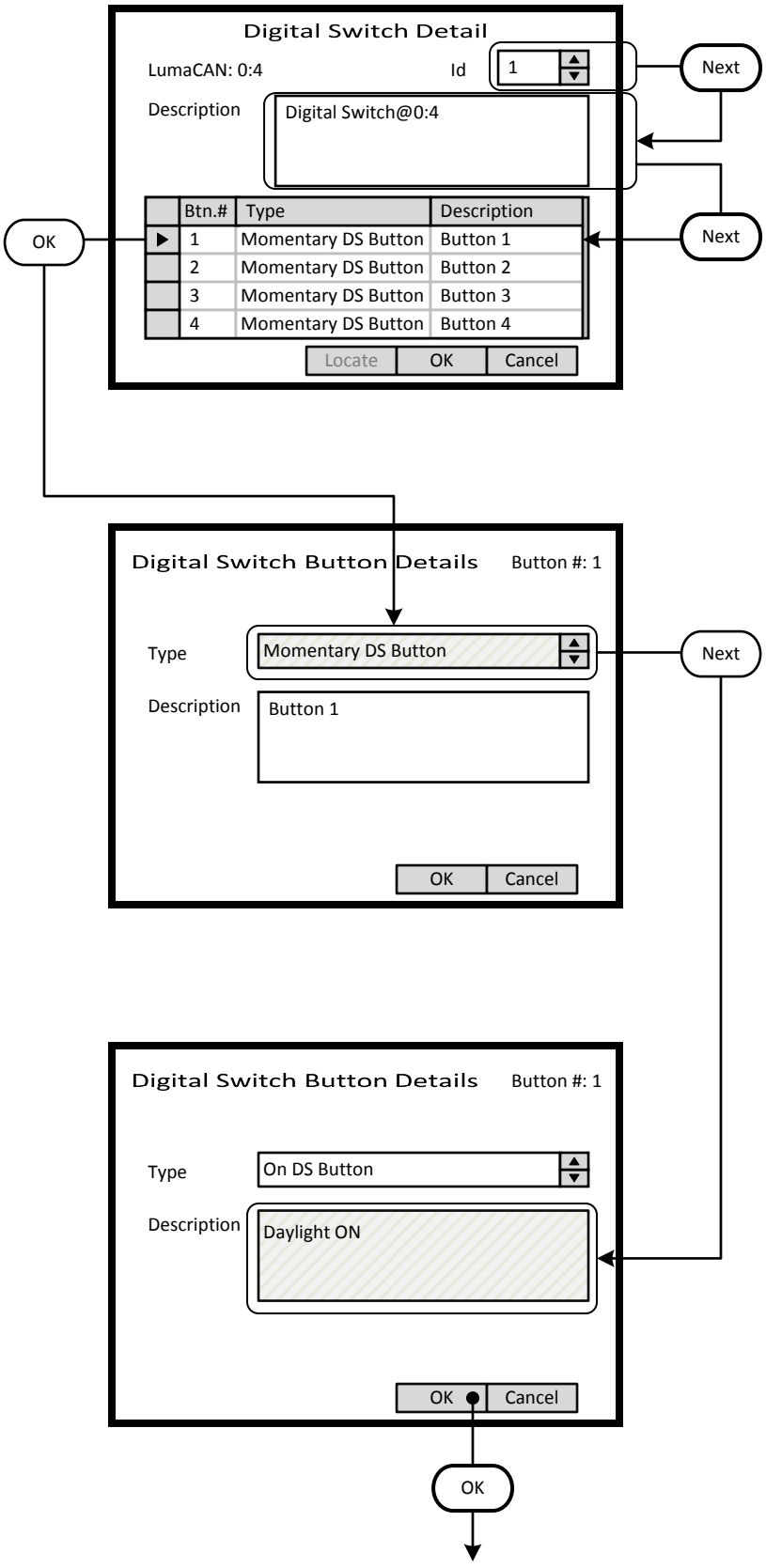
Step 2.8
A populated **Input Board Details** screen will look as shown here. The Input Ports can be configured in any order as necessary.

Understanding the Screen
Only Ports 1 & 2 are populated.
The ID numbers are for information purposes. They can be any number that makes sense to the user. The system only stores these numbers and does not use them for any function other than identification.
The 'Btn" column will be populated with switch button numbers if Low Voltage Switches are configured at the Port location.

. *The other onscreen buttons are:*
*<**OK**> - Used to accept the entries*
*<**Cancel**> - Used to discard entries*

Step 2.9
The **Inputs** listing shows a Digital Switch at LumaCan ID 4. This is a 4 button Digital Switch to be used for Dimming control. Highlight the device and move the indicator to the appropriate device line. Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <**Edit**> button.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2.10

The **Digital Switch Detail** screen provides an ID setting for informational purposes. This can match the switch number on the building floor plan. For this exercise this will be set to 12.

A switch -**Description**- field is provided that can be filled with a maximum of 25 characters of information.

Button function must be configured. Highlight the Button number and press OK to enter the editing screen.
These fields fill the list on the previous screen.

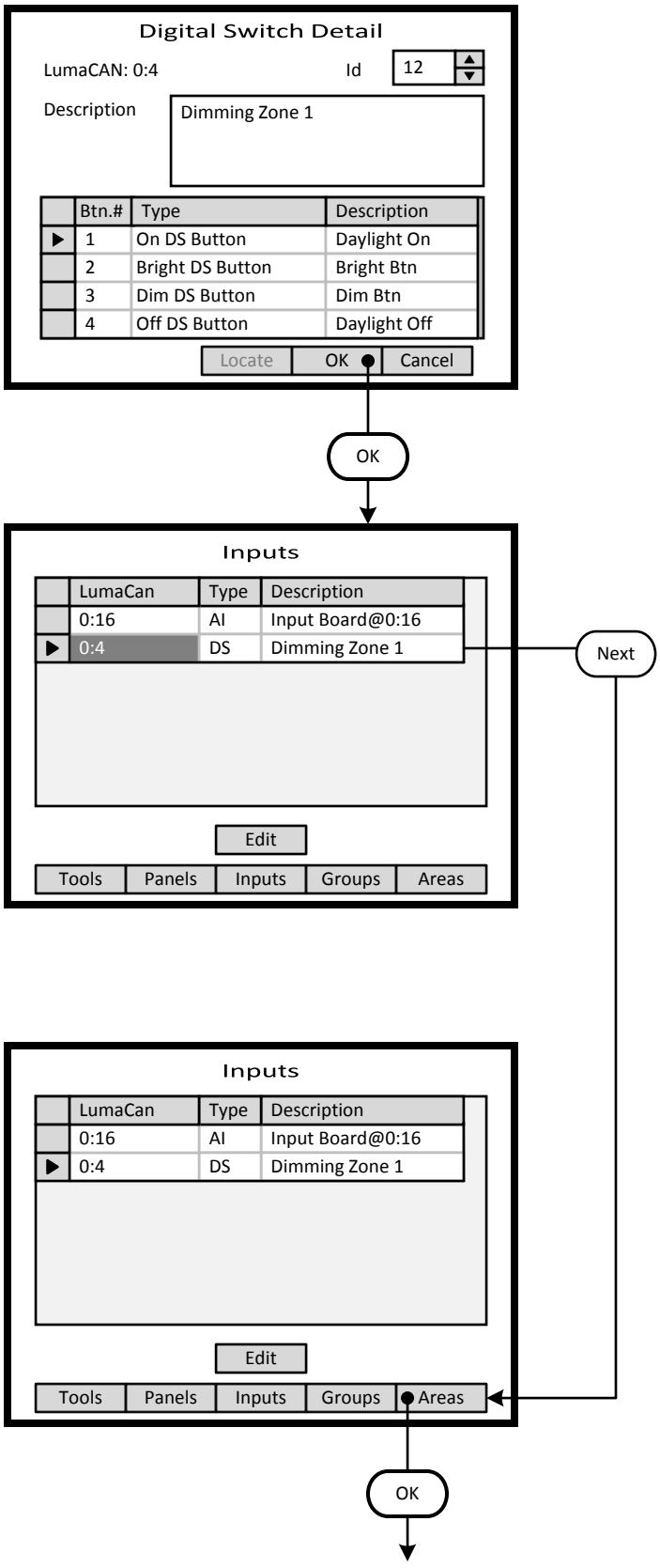
Use the UP or DOWN arrows on the keypad to navigate up or down the list.

Step 2.11

The Digital Switch Button Details screen is used to configure the individual button function and to name the button. Use the UP and DOWN arrows on the keypad to display the desired button function.
The Description field should be used to document the function of the individual buttons. This field is for user reference only.

Understanding the Screen
The type options are:
- *Momentary DS Button*
- *On DS Button*
- *Bright DS Button*
- *Dim DS Button*
- *Off DS Button*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 2.12
This illustration shows the recommended configuration for a Digital Switch used for dimming control application. The button Type fields should match those shown. Each field should be adjusted individually. Button descriptions are entered on the Button Detail Screen shown previous.

Use the UP or DOWN arrows on the keypad to navigate up or down the list.

Use NEXT and BACK to navigate between sections on the screen.

Understanding the Screen
The ID number are for information purposes and can be used to match assigned project switch numbers.

Step 2.13
The Inputs list has a Digital Switch at ID 4 and is described as Dimming Zone 1.

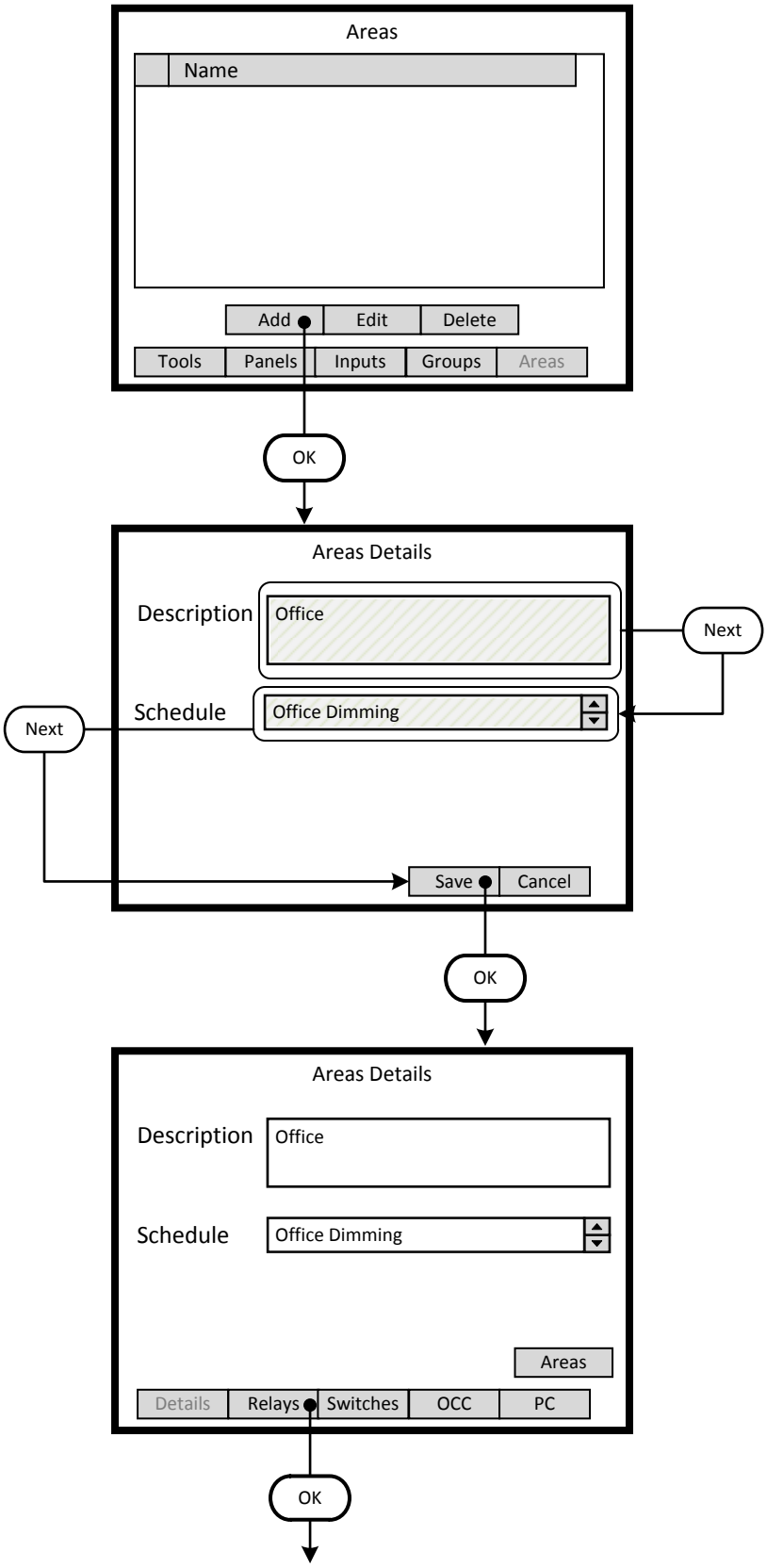
Use the UP and DOWN arrows to move about the list. Use NEXT to navigate to the <**Areas**> button.

Step 2.14
The Inputs list has an Low Voltage Input Board (AI) at LumaCan ID 16 and a Digital Switch (DS) at LumaCan ID 4 that is described as Dimming Zone 1.

Use NEXT to navigate to the <**Areas**> button. Press OK to advance to the Areas maintenance screen.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name

Step 3: Create an Area



Step 3.1

The **Areas** screen lists all the current Areas available in the system. At this step there are no existing Areas. To create a new Area navigate to the <**Add**> onscreen button and press OK.

Understanding the Screen
There are no Areas in this system.
Description of the onscreen buttons:
<***Edit***> *selecting this onscreen button will allow editing of the highlighted Area in the list.*
<***Delete***> *selecting this onscreen button will permanently remove the highlighted Area from the list.*
<***Tools***> *use to navigate to the System Tools screen.*
<***Panels***> *use to navigate to the Relay Panel Detail Screen*
<***Groups***> *use to navigate to the Group building screen*
<***Areas***> *use to navigate to the Areas configuration screen*

Step 3.2

Enter the desired Area name and detail in the **-Description-** field. Enter as much information as practical.
The Area must be assigned to a Schedule. An area can only be assigned to one schedule at a time. All of the available system Schedules will appear in the **-Schedule-** list box.

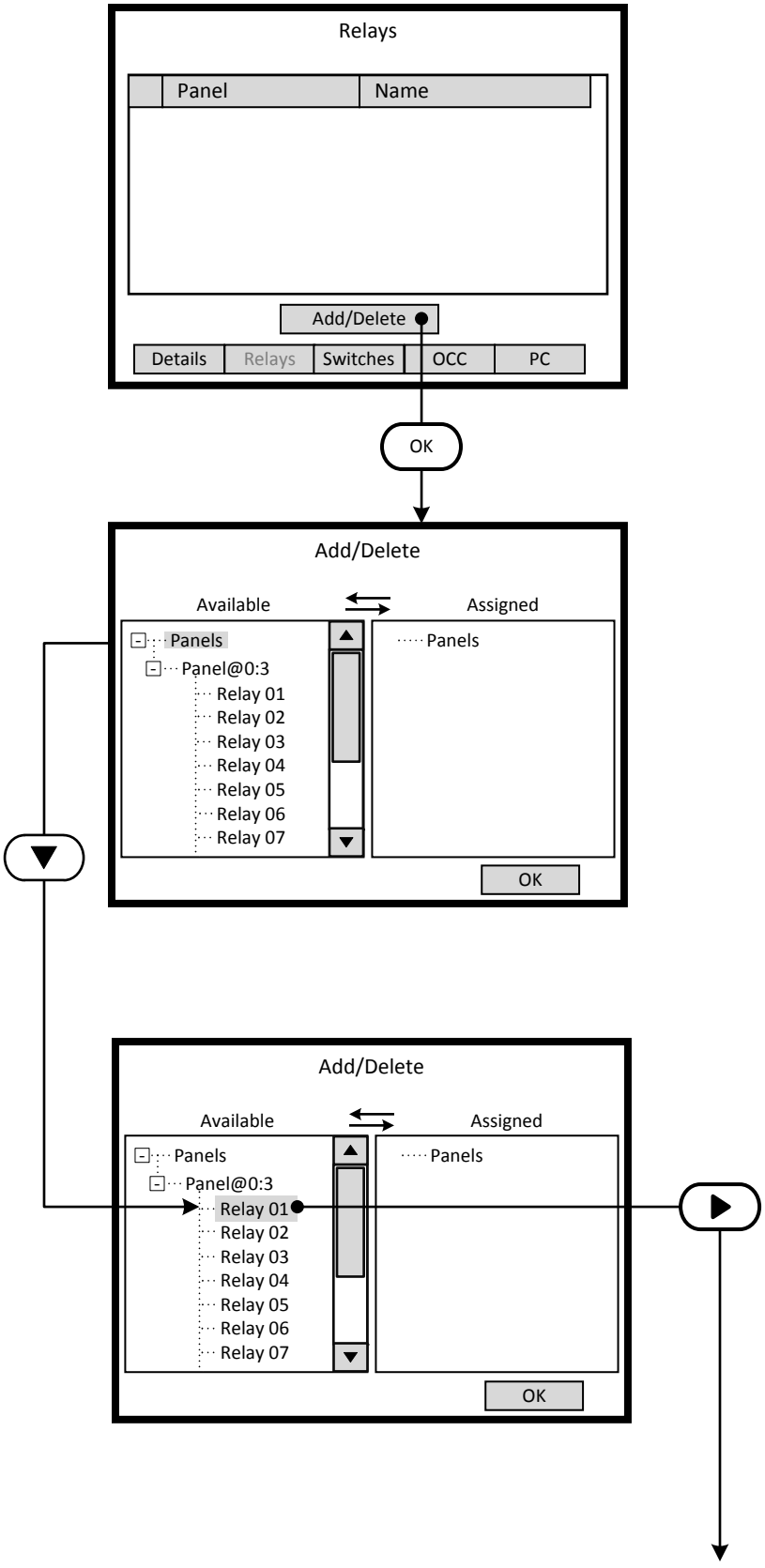
Understanding the Screen
*To appear in the **-Schedule-** list box, Schedules must be created prior to entering this screen. See the "Create a Schedule" section.*
Description of the onscreen buttons:
<***Save***> *selecting this onscreen button will create the Area, save it, and add advance to the next screen*
<***Cancel***> *used to discard entries*

Step 3.3

The newly created Area will contain relays and associated control devices. Additional navigation buttons are available to navigate to screens that populate or edit the contents of the Area. To add relays to the Area, navigate to the <**Relay**> onscreen button and press OK.

Understanding the Screen
Description of the onscreen buttons:
<***Areas***> *use to navigate to the Areas list screen*
<***Relays***> *selecting this onscreen button will allow the addition/editing of assigned relays*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***OCC***> *selecting this onscreen button to add/edit assigned Occupancy Sensors*
<***PC***> *selecting this onscreen button to add/edit assigned Photocells*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 3.4

The **Relays** screen lists all the current relays assigned to the Area. To add a new relay to the Area navigate to the <**Add/Delete**> onscreen button and press OK.

Understanding the Screen
There are currently no relays assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the **Area Details** screen*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***OCC***> *selecting this onscreen button to add/edit assigned Occupancy Sensors*
<***PC***> *selecting this onscreen button to add/edit assigned Photocells*

Step 3.5

The left side of the screen under the heading -**Available**- lists all of the relays that have not been assigned to an Area. If the desired relay is not on this list it has been assigned to another Area. Relays are displayed according to the panel they are installed in. All unassigned relays in the system can be seen on this list.

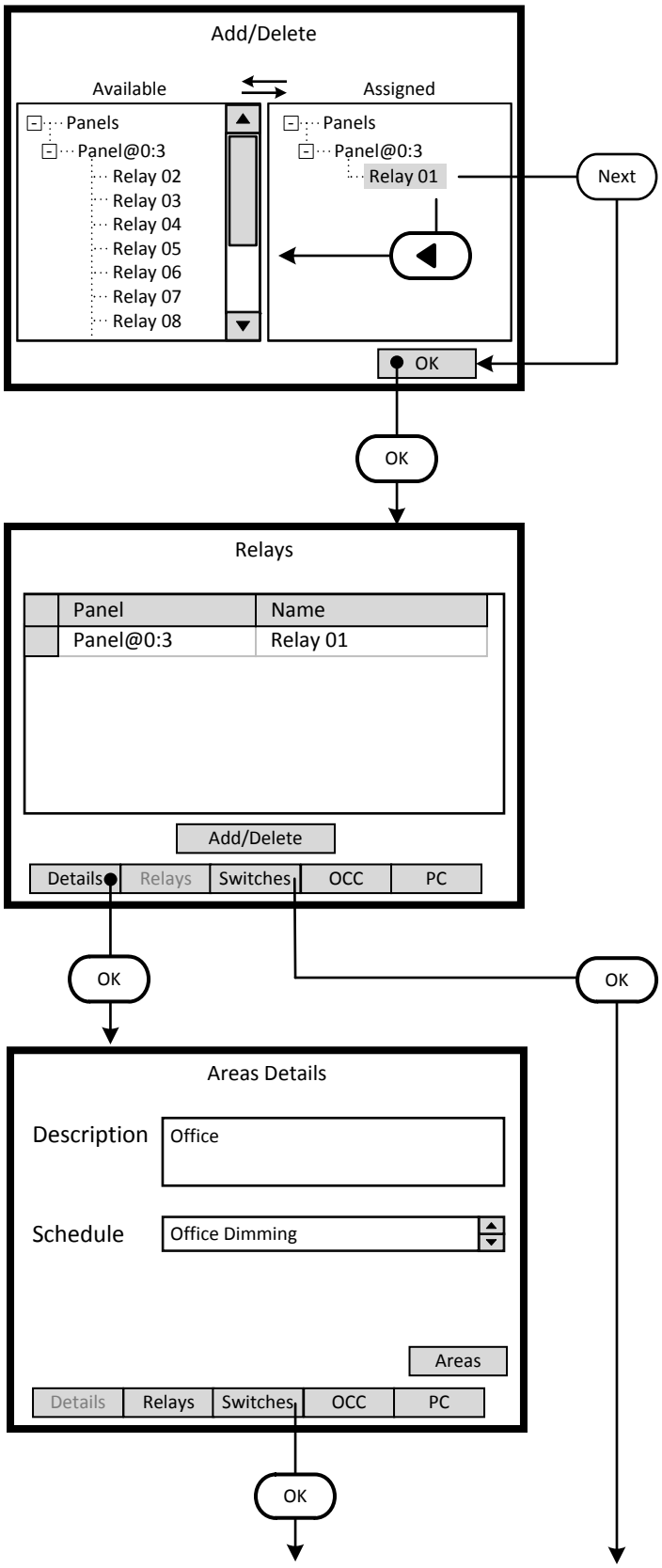
Understanding the Screen
Complete panels may be collapsed by highlighting name on the list pressing OK.
Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the **Relays** list screen.*

Step 3.6

Relays are added to the Area by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this Area.
Relays 01 through 07 are available for assignment.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the Area.

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 3.7

Relays are deleted from the Area by moving them from the -**Assigned**- list to the -**Available**- list. This is accomplished by highlighting the desired relay on the right side of the screen and using the left arrow to move it to the right side of the screen. To accept the assignment, navigate to the -**OK**- onscreen button and press OK or Enter.

Understanding the Screen
Currently Relay 01 of Panel 3 has been assignment to the Area.
Relays 02 through 07 are available for assignment.

Step 3.8

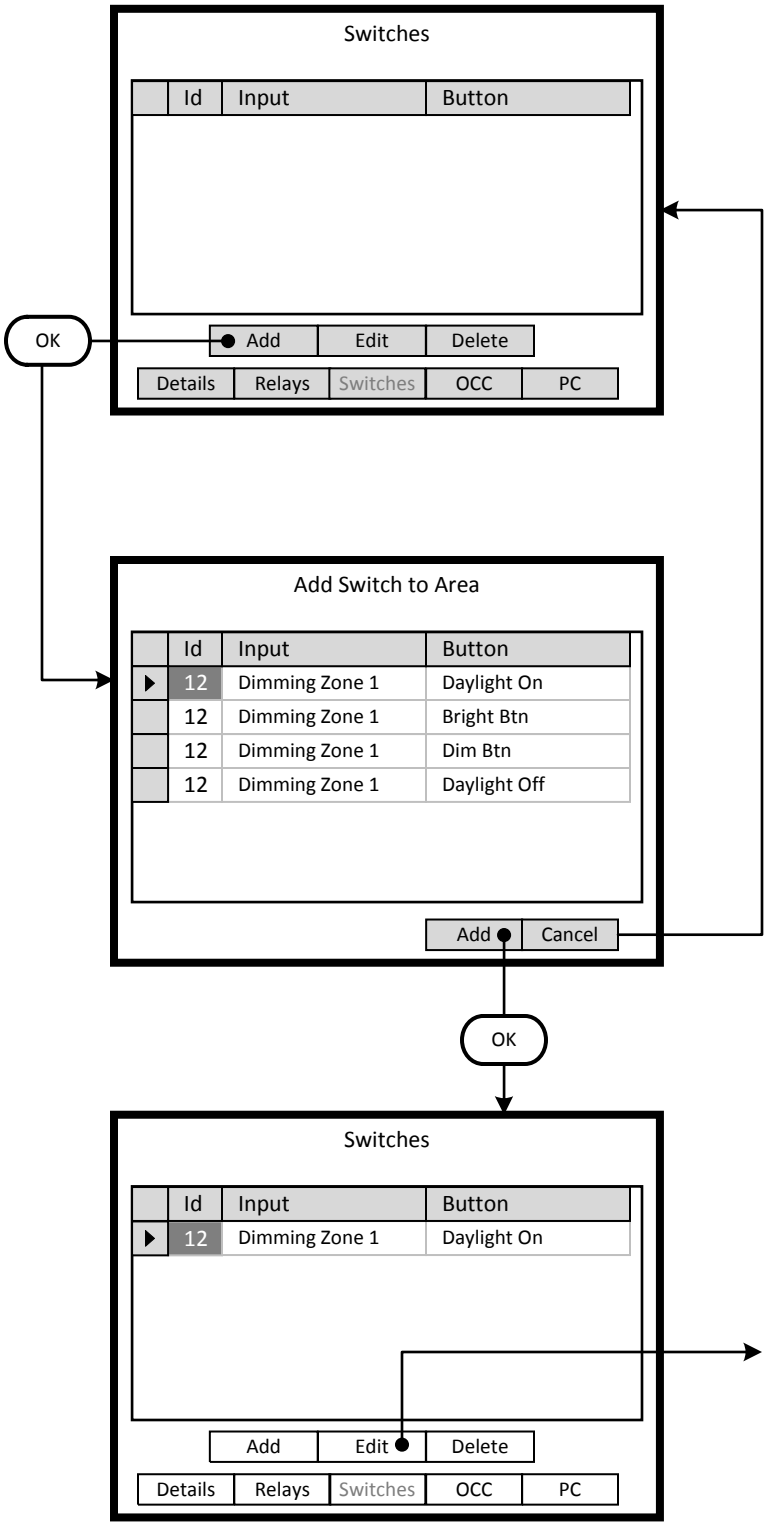
The -Relays- screen lists the relays assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next common step is to add switch buttons to the Area.

Understanding the Screen
Currently only Relay 01 of Panel 3 has been assignment to the Area.
*There are two navigating paths to the next screen. Using the <**Switches**> onscreen button skips a screen and goes directly to the -**Switches**- screen.*

Description of the onscreen buttons:
*<**Details**>* *use to navigate to the -**Area Details**- screen*
*<**Switches**>* *use to navigate to the -**Switches**- screen*
*<**OCC**>* *use to navigate to the -**Occupancy Sensors**- screen*
*<**PC**>* *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name

Step 4: Switch Buttons



Step 4.1

The -**Switches**- screen lists the switch buttons assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next common step is to add switch buttons to the Area.

Understanding the Screen
Currently there are no switch buttons assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.2

The -**Add Switch to Area**- screen lists the available and unassigned switch buttons for the system. As a switch button is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted button, button 1 of the switch at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
<***Cancel***> *use to navigate to the -**Area Details**- screen*

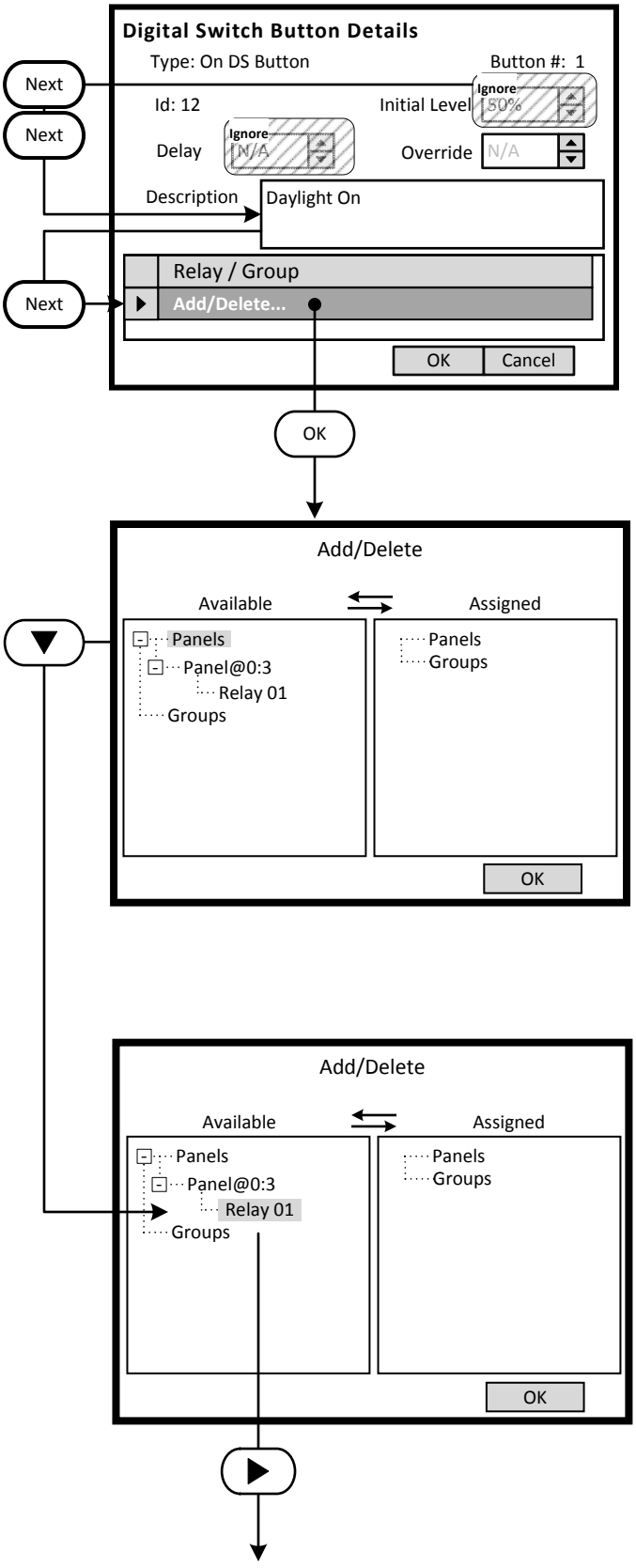
Step 4.3

The -**Switches**- screen lists the switch buttons assigned to the Area. This list will be displayed each time this section of the Area information is entered.

Understanding the Screen
Currently button 1 of the switch at LumaCan address 4 is assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.4

This screen configures the characteristics of the switch button. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*The -**Description**- field can be edited on this screen.*
*Information from the **Digital Switch Detail** screen will be displayed here.*
*Ignore the settings of -**Initial Level**-, -**Delay**- and -**Override**-.*

Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

Step 4.5

The left side of the screen under the heading -**Available**- lists all of the relays that have been assigned to an Area. If the desired relay is not on this list it has not been assigned to this Area. Relays are displayed according to the panel they are installed in. Use the navigation keypad to highlight the desired relay.

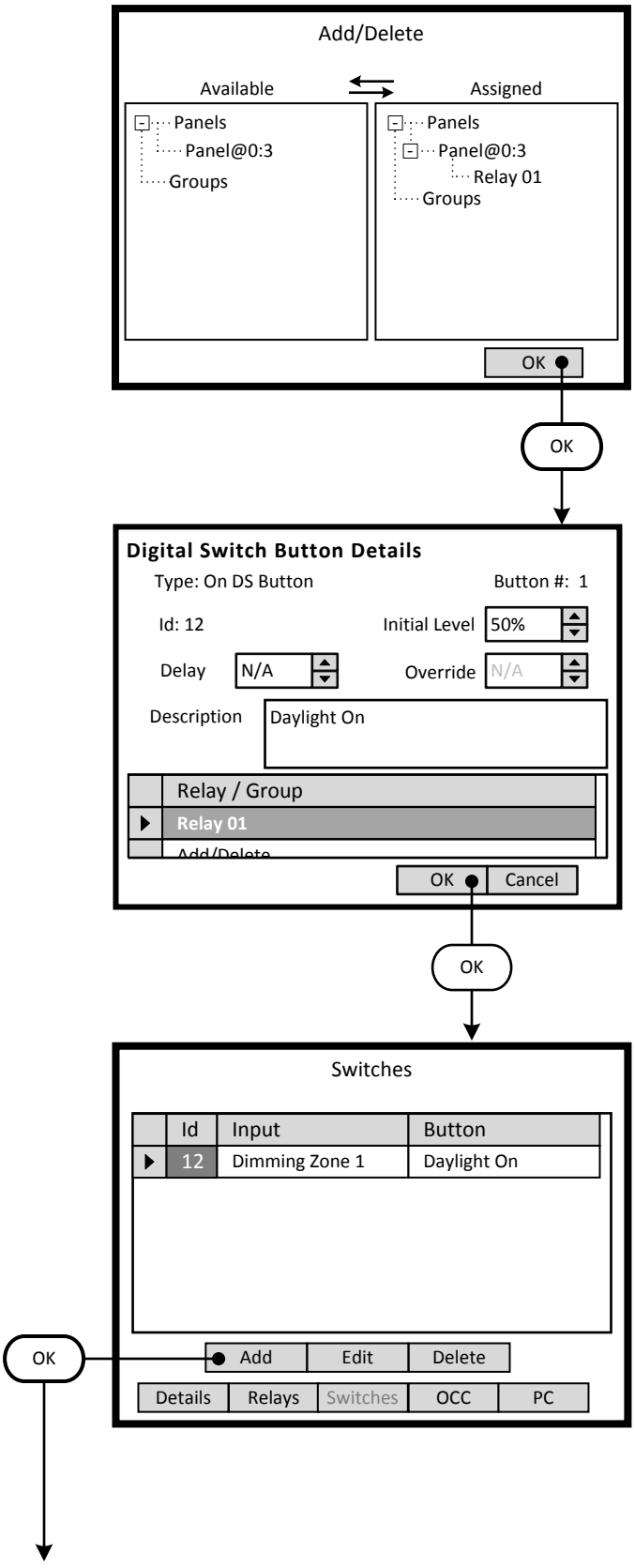
Understanding the Screen
Complete panels may be collapsed by highlighting name on the list pressing OK.
Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the **Relays** list screen.*

Step 4.6

Relays are assigned to the Switch button by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this Switch Button.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the Switch Button.

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.7
Relay 01 is assigned to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned-** list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -**Digital Switch Button Details**- screen*

Step 4.8
Relay 01 is assigned to the control of the Switch Button 1.
To remove it, highlight the relay in the -**Assigned-** list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

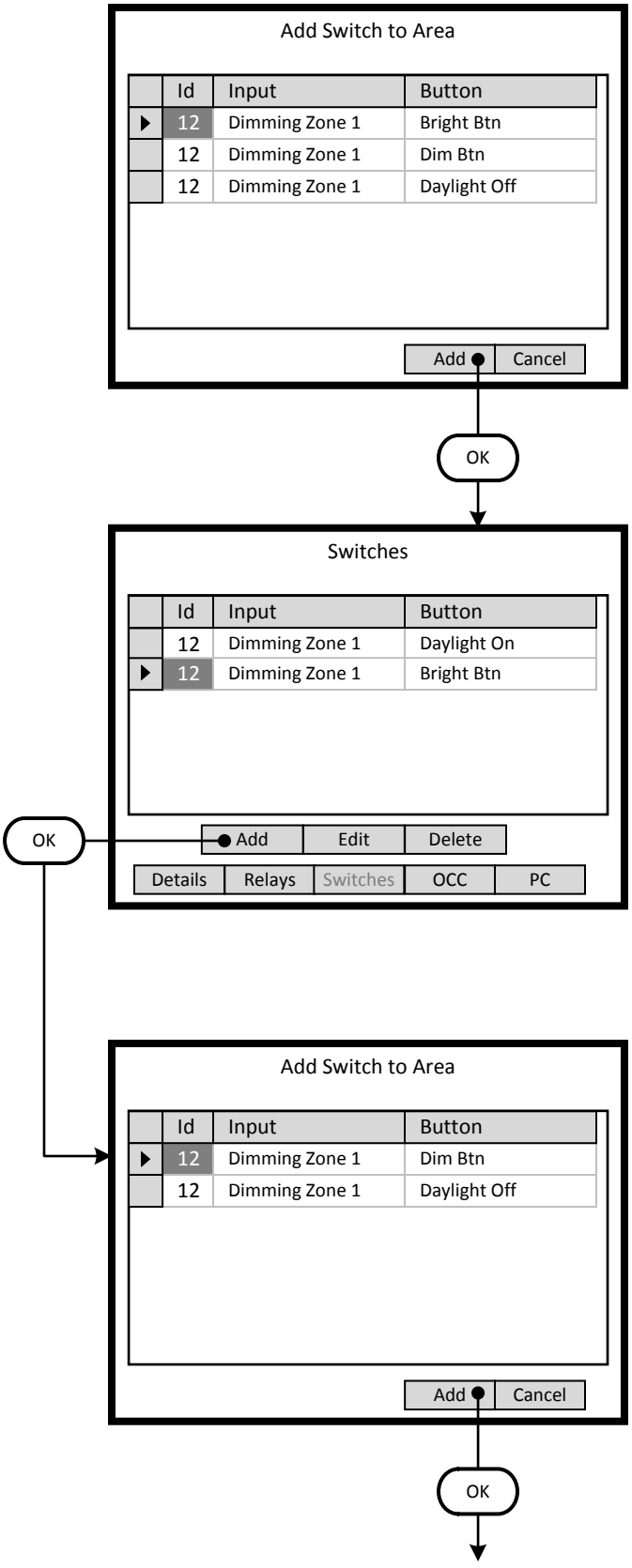
Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
Relay 01 of Panel 3 will start daylight harvesting when button 1 of switch ID: 12 is pressed.
*The settings of -**Initial Level**-, -**Delay**- and -**Override**- do not apply.*

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -**Switches**- screen*
<***Cancel***> *use to abandon entries and navigate to the -**Switches**- screen*

Step 4.9
All four of the Buttons for the Switch must be assigned to the Area. This summary list will be displayed each time this section of the Area information is entered. Navigate to the <**Add**> button and press **OK** button on the keypad.

Understanding the Screen
Currently there is one switch button assigned to the Area.
Description of the onscreen buttons:
<***Edit***> *use to navigate to the -**Digital Switch Button Details**- screen to make modifications to settings of the highlighted button*
<***Delete***> *use to delete the highlighted button from the Area*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.10

The -**Add Switch to Area**- screen lists the available and unassigned switch buttons for the system. As a switch button is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted button, Bright Btn button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
*<**Cancel**> use to navigate to the -**Area Details**- screen*

Step 4.11

The -**Switches**- screen lists the switch buttons assigned to the Area. This summary list will be increase as each button is added.

Understanding the Screen
Currently 2 buttons are assigned; Daylight On, Bright Btn of switch ID 12 at LumaCan address 4.

Description of the onscreen buttons:
*<**Add**> use to navigate to the -**Add Switch to Area**- screen*
*<**Delete**> use to delete the highlighted button*
*<**Details**> use to navigate to the -**Area Details**- screen*
*<**Relays**> use to navigate to the -**Relays**- screen*
*<**OCC**> use to navigate to the -**Occupancy Sensors**- screen*
*<**PC**> use to navigate to the -**Photocells**- screen*

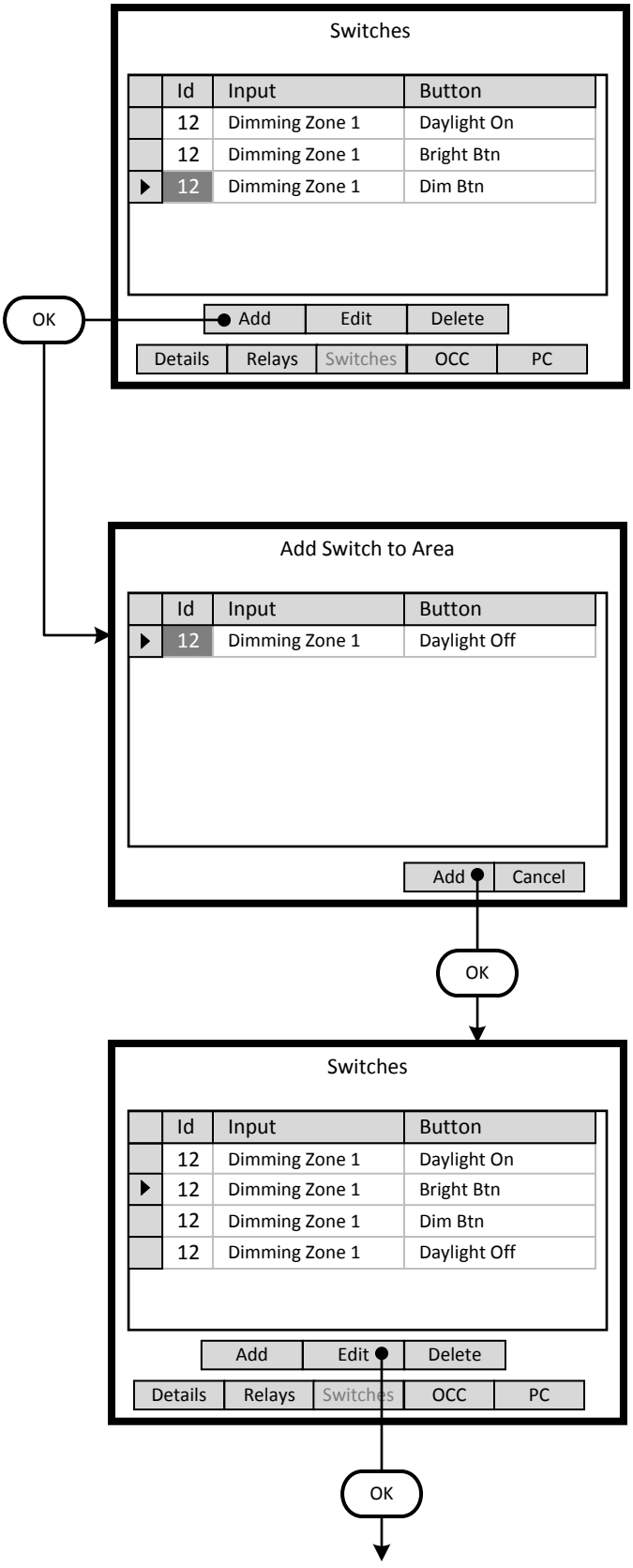
Step 4.12

Continue to add all of the relevant buttons to the Area.

Understanding the Screen
*The highlighted button, Dim Btn button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
*<**Cancel**> use to navigate to the -**Area Details**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.13

The -**Switches**- screen lists the switch buttons assigned to the Area. This summary list will be increase as each button is added.

Understanding the Screen
Currently 3 buttons are assigned; Daylight On, Bright Btn, Dim Btn of switch ID 12 at LumaCan address 4.

Description of the onscreen buttons:

<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.14

Continue to add all of the relevant buttons to the Area.

Understanding the Screen
*The highlighted button, Daylight Off button of the switch ID 12 at LumaCan address 4 can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:

<***Cancel***> *use to navigate to the -**Area Details**- screen*

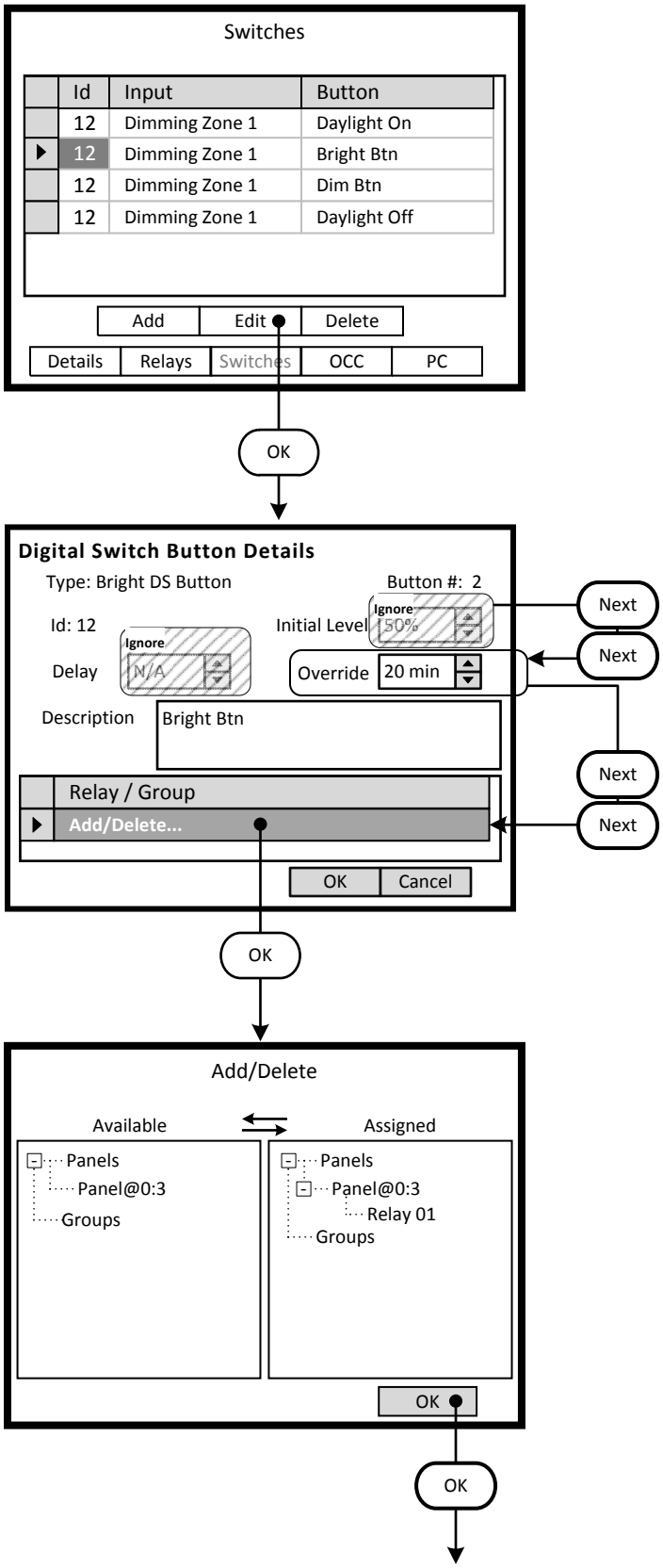
Step 4.15

All four of the buttons for the switch have been added to the Area. Each of the buttons must be assigned to the relay to be controlled. The Daylight On button was previously configured in Step 4.4. Navigate to the <**Edit**> button and press **OK** button on the keypad to configure each button of the remaining three buttons.

Understanding the Screen
Currently there is one switch button assigned to the Area.
Description of the onscreen buttons:

<***Delete***> *use to delete the highlighted button from the Area*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.16

The three new buttons listed on the -**Switches**- screen require configuration. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.17

The Bright DS button will temporarily increase the light level from the Target Level of the photocell. The -**Override**- field is set for the duration that the Bright manual override is active. At the conclusion of this interval, the zone will return to the photocell Target Level. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Initial Level**- and -**Delay**-.*
Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

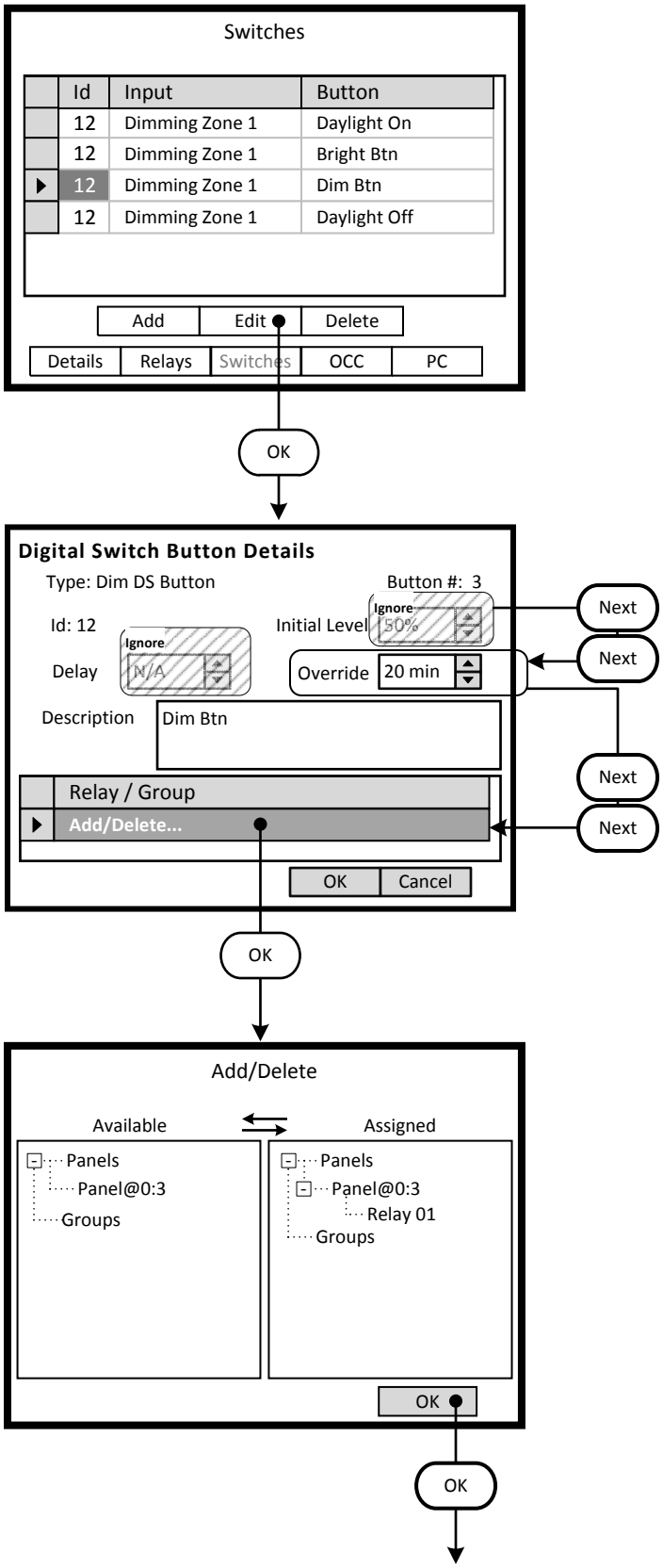
Step 4.18

Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.19

Configure the next button listed on the -**Switches**- screen. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.20

The Bright DS button will temporarily decrease the light level from the Target Level of the photocell. The -**Override**- field is set for the duration that the Dim manual override is active. At the conclusion of this interval, the zone will return to the photocell Target Level. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Initial Level**- and -**Delay**-.*
Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

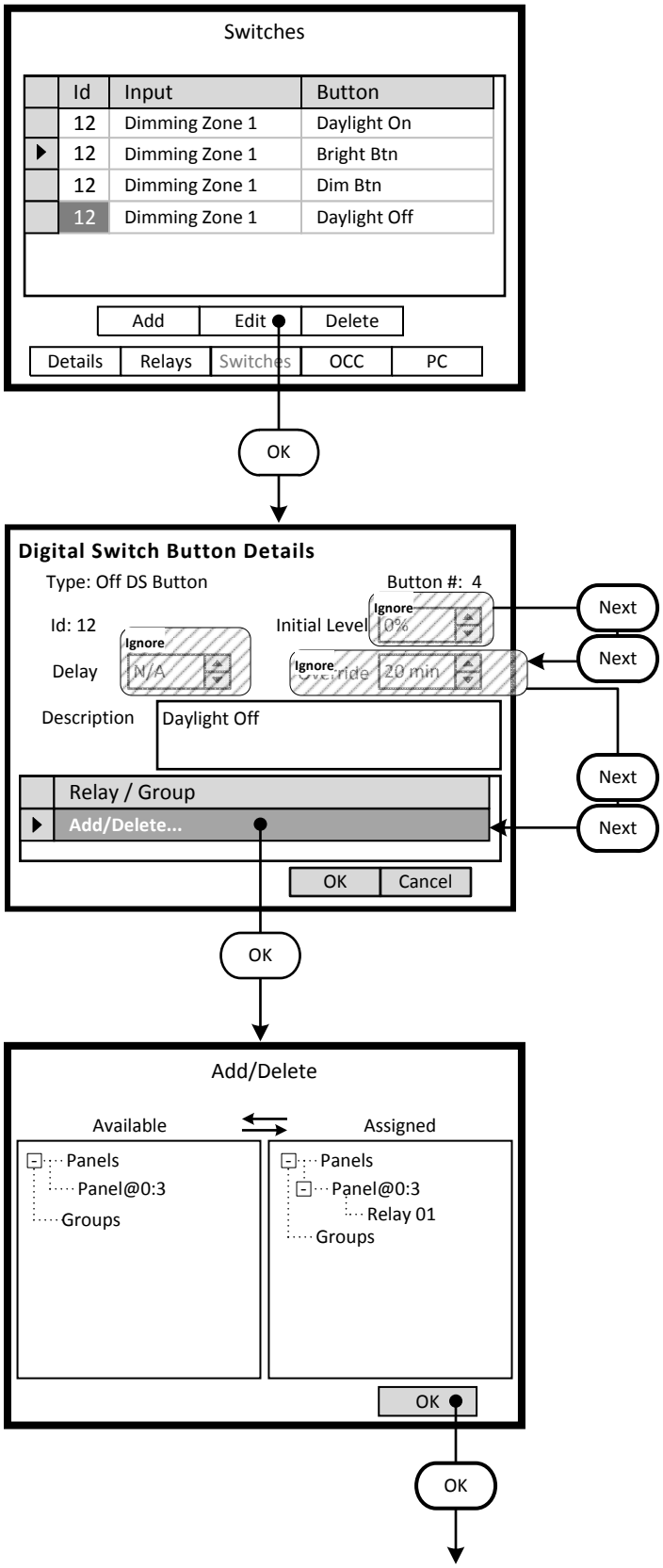
Step 4.21

Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 4.22

The three new buttons listed on the -**Switches**- screen require configuration. Highlight the desired button and navigate to the <**Edit**> onscreen button.

Understanding the Screen
Currently all buttons of the switch at LumaCan address 4 are assigned to the Area.

Description of the onscreen buttons:
<***Add***> *use to navigate to the -**Add Switch to Area**- screen*
<***Delete***> *use to delete the highlighted button*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

Step 4.23

The Off DS button will turn Off the zone. The light level will dim to zero output and turn off the relay. The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

Understanding the Screen
*Ignore the settings of -**Initial Level**-, -**Delay**- and -**Override**-.*

Description of the onscreen buttons:
<***OK***> *save the selections made and return to the **Switches** list screen.*
<***Cancel***> *use to discard entries and return to previous screen*

Step 4.24

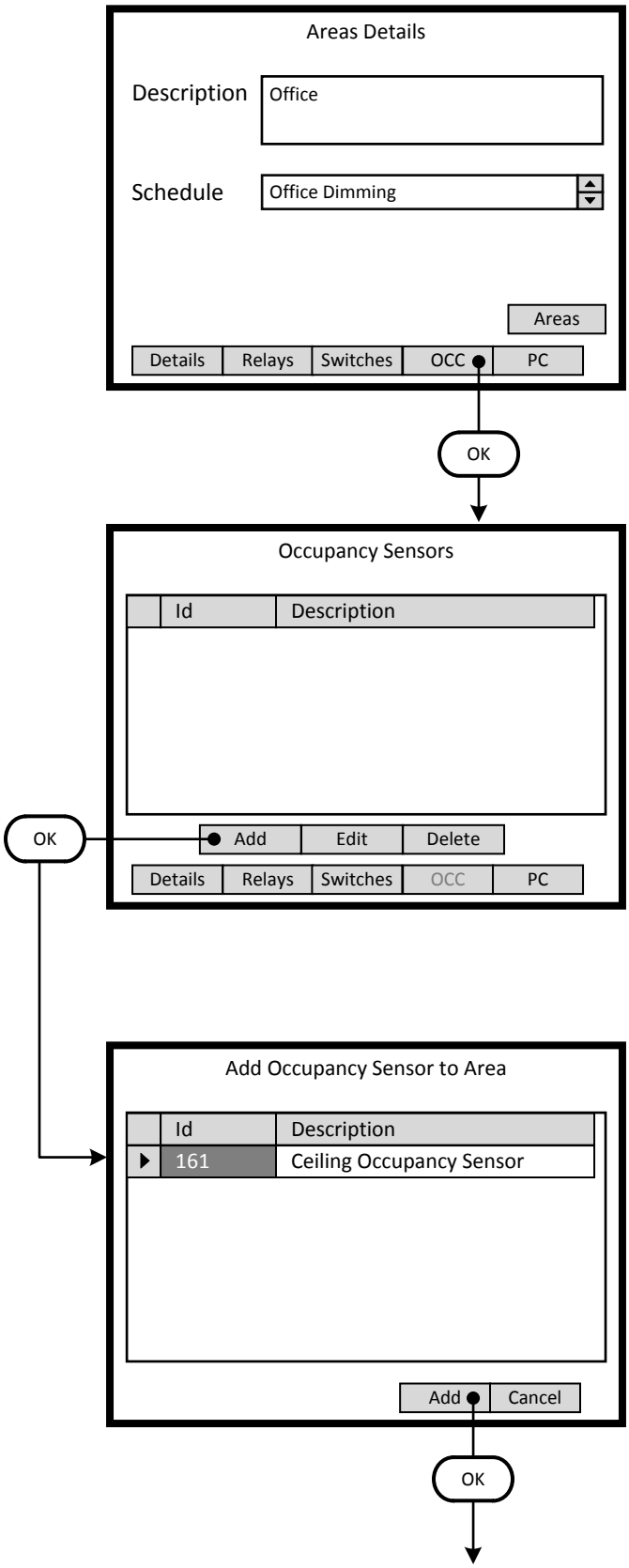
Use the instructions outlined in Steps 4.5 through 4.7 to assign Relay 01 to the control of the Switch Button.
To remove it, highlight the relay in the -**Assigned**- list and press the Left arrow button of the navigation keypad. The relay will move back to the -**Available**- list on the left side of the screen.

Understanding the Screen
Relay 01 of Panel 3 has is assigned to the Switch Button.
No other relays are currently available in the Area.

Description of the onscreen buttons:
<***OK***> *use to accept entries and navigate to the -Digital Switch Button Details- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name

Step 4: Occupancy Sensor



Step 5.1

The Office Dimming Area requires occupancy sensors assigned to control of the relay. To add occupancy sensors to the Area, navigate to the <**OCC**> onscreen button and press OK.

Understanding the Screen
Description of the onscreen buttons:
<***Areas***> *use to navigate to the -**Areas**- list screen*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *selecting this onscreen button will allow the addition/editing of assigned relays*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***PC***> *selecting this onscreen button to add/edit assigned Photocells*

Step 5.2

The -**Occupancy Sensors**- screen lists the sensors assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next step is to add these devices to the Area.

Understanding the Screen
Currently there are no occupancy sensors assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***Switches***> *use to navigate to the -**Switches**- screen*
<***PC***> *use to navigate to the -**Photocells**- screen*

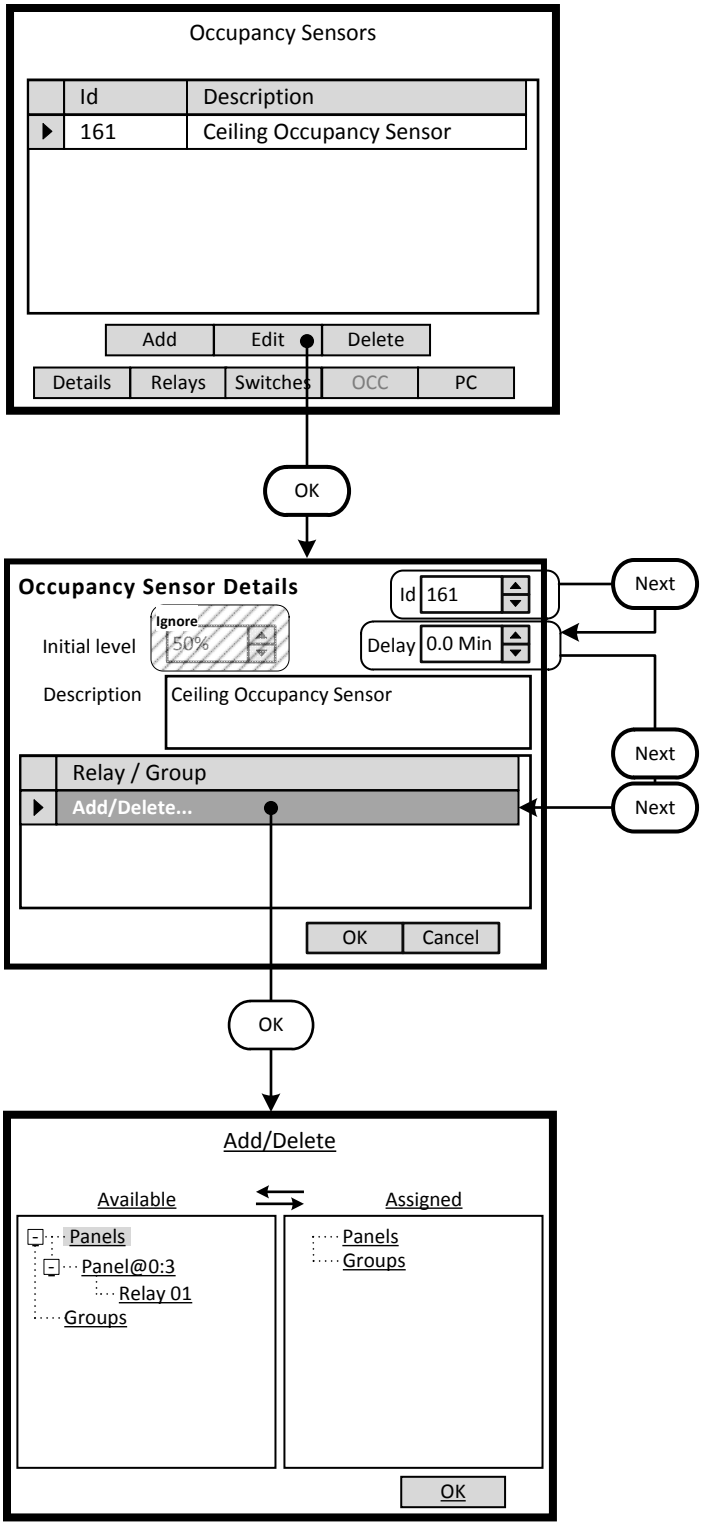
Step 5.3

The -**Add Occupancy Sensor to Area**- screen lists the available and yet unassigned occupancy sensors for the system. As an occupancy sensor is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted occupancy sensor can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
<***Cancel***> *use to navigate to the -**Area Details**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 5.4

The -**Occupancy Sensors**- screen lists the sensors assigned to the Area. This device must be configured and have one or more relays assigned to it. Highlight the desired occupancy sensor and navigate to the <**Edit**> button.

Understanding the Screen
Currently there is only one occupancy sensor assigned to the Area.

Description of the onscreen buttons:
*<**Details**>* *use to navigate to the -**Area Details**- screen*
*<**Relays**>* *use to navigate to the -**Relays**- screen*
*<**Switches**>* *use to navigate to the -**Switches**- screen*
*<**PC**>* *use to navigate to the -**Photocells**- screen*

Step 5.5

This screen configures the characteristics of the occupancy sensor.
The -**Delay**- setting is adjusted to provide a time delay after vacancy is determined by the sensor. The Off signal from the sensor will be received at the end of this delay period.
The -**Relay / Group**- list will be populated with the corresponding controlled relays or groups.

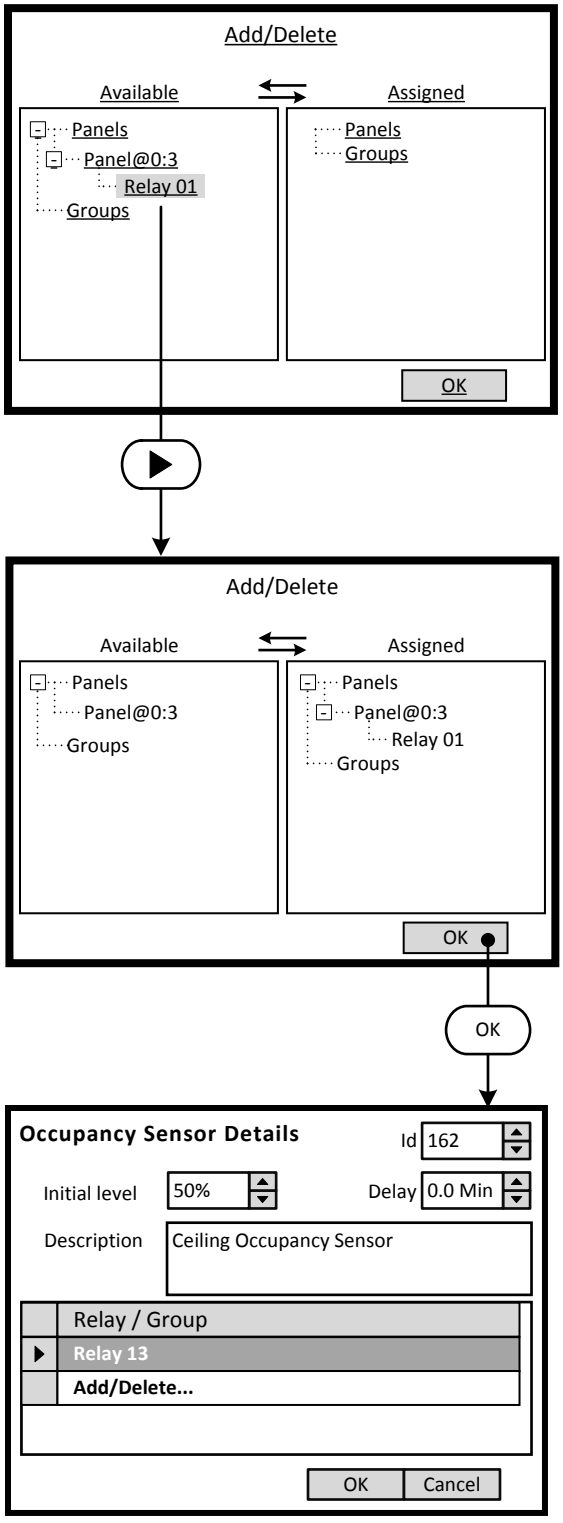
Understanding the Screen
*The -**Description**- field can be edited on this screen.*
*The -**Id**- can be changed .*
*Ignore the settings of -**Delay**- and -**Initial Level**-.*

Step 5.5

The left side of the screen under the heading -**Available**- lists all of the relays that have been assigned to an Area. If the desired relay is not on this list it has not been assigned to this Area. Relays are displayed according to the panel they are installed in. Use the navigation keypad to highlight the desired relay.

Understanding the Screen
Complete panels may be collapsed by highlighting name on the list pressing OK.
Description of the onscreen button:
*<**OK**>* *selecting this onscreen button will save the selections made and return to the **Relays** list screen.*

Key
<Add> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



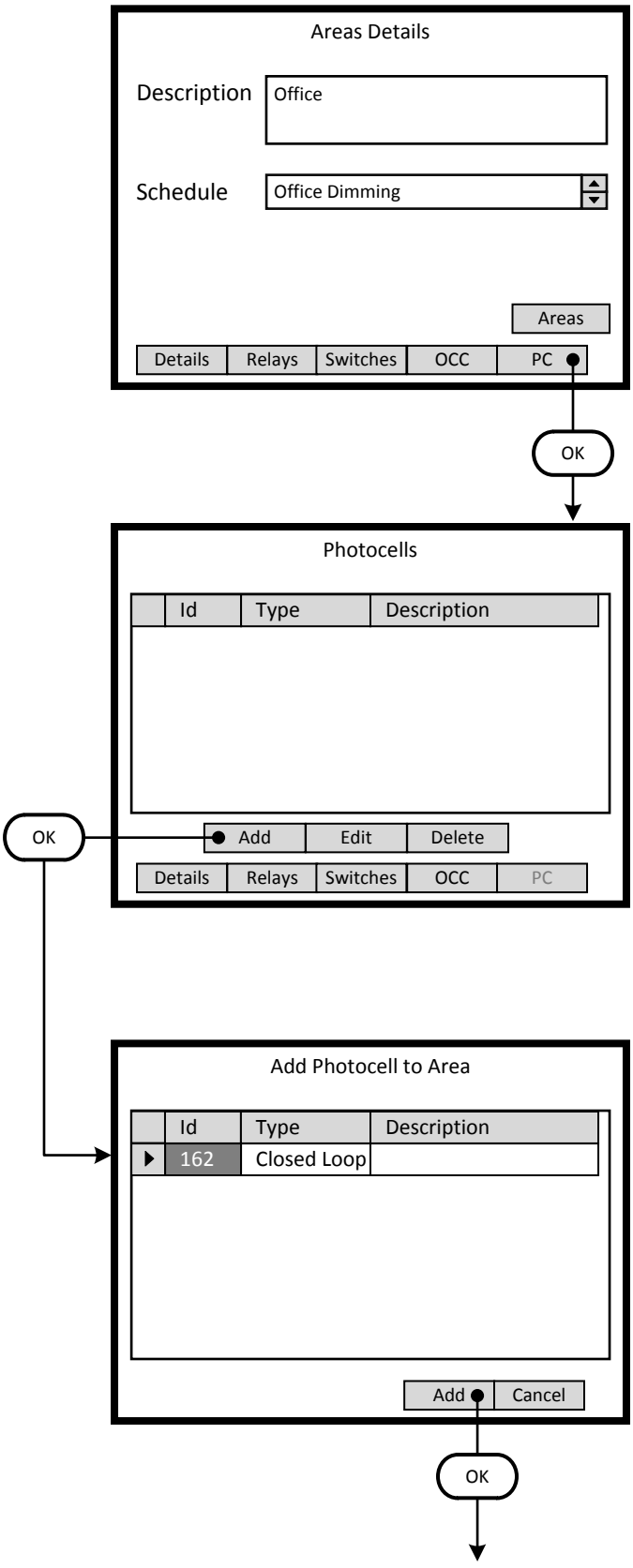
Step 5.6

Relays are assigned to the occupancy sensor by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this occupancy sensor.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the occupancy sensor.

Key
<**Add**> On screen button.
-**Name**- Label of on screen entry field
NEXT Button on keypad
Details Screen Name

Step 4: Photocell



Step 6.1

The Office Dimming Area requires a photocell assigned to control of the relay. The photocell is mandatory for Behaviors that involve a photocell in their control scheme. To add a photocell to the Area, navigate to the <**PC**> onscreen button and press OK.

Understanding the Screen
Description of the onscreen buttons:
<***Areas***> *use to navigate to the -**Areas**- list screen*
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *selecting this onscreen button will allow the addition/editing of assigned relays*
<***Switches***> *selecting this onscreen button to add/edit assigned switches*
<***OCC***> *selecting this onscreen button to add/edit assigned occupancy sensors*

Step 6.2

The -**Photocell**- screen lists the photocells assigned to the Area. This list will be displayed each time this section of the Area information is entered. The next step is to add these devices to the Area.

Understanding the Screen
Currently there are no Photocell assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***Switches***> *use to navigate to the -**Switches**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensors**- screen*

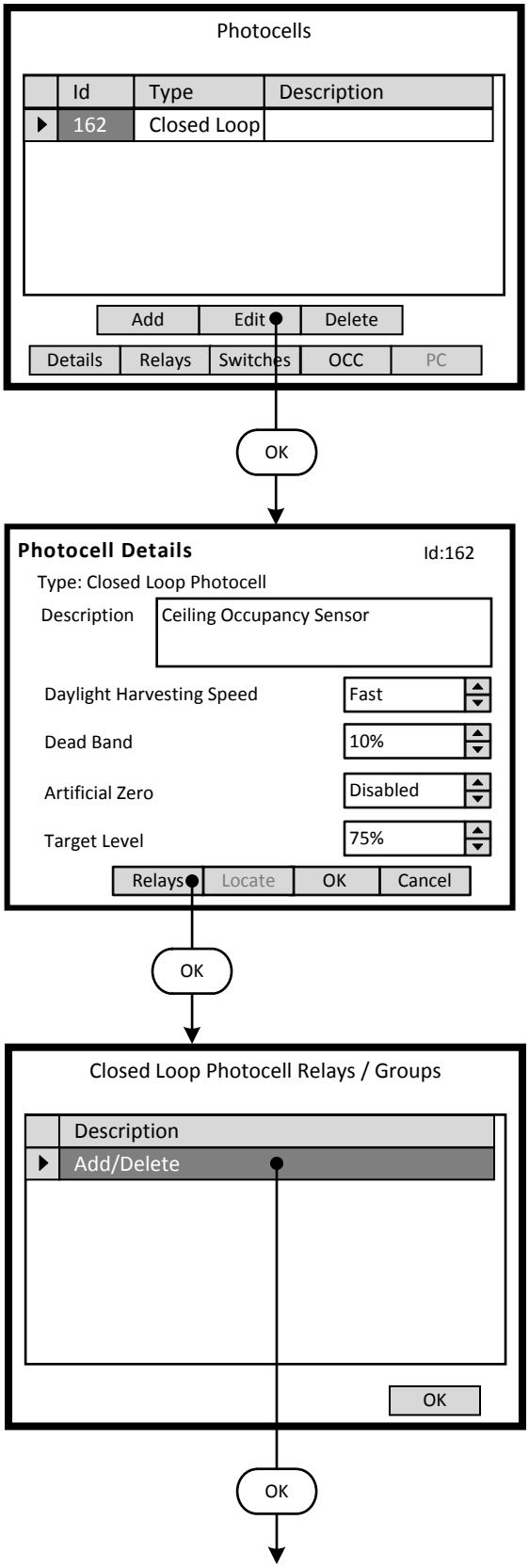
Step 6.3

The -**Add Photocell to Area**- screen lists the available and yet unassigned photocells for the system. As an photocell is assigned to an Area, it is removed from this list.

Understanding the Screen
*The highlighted photocell can be added to the Area by selecting the <**Add**> onscreen button.*

Description of the onscreen buttons:
<***Cancel***> *use to navigate to the -**Area Details**- screen*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 6.4

The -**Photocells**- screen lists the photocell assigned to the Area. This device must be configured and have one or more relays assigned to it. Highlight the desired photocell and navigate to the <**Edit**> button.

Understanding the Screen
Currently there is only one photocell assigned to the Area.

Description of the onscreen buttons:
<***Details***> *use to navigate to the -**Area Details**- screen*
<***Relays***> *use to navigate to the -**Relays**- screen*
<***Switches***> *use to navigate to the -**Switches**- screen*
<***OCC***> *use to navigate to the -**Occupancy Sensor**- screen*

Step 6.5

This screen configures the characteristics of the Closed Loop Photocell.
The -**Daylight Harvesting Speed**- setting is the speed of response to measured changes in light level.
The -**Dead Band**- setting is applied to the target level to reduce sensitivity of the system relative to the target level.
The -**Artificial Zero**- can be used to change the percentage of output of the relay that represents the off value .
The -**Target Level**- is the desired light level in the space. This is the percentage of measured signal at the input terminals.

Understanding the Screen
*The -**Description**- field can be edited on this screen.*

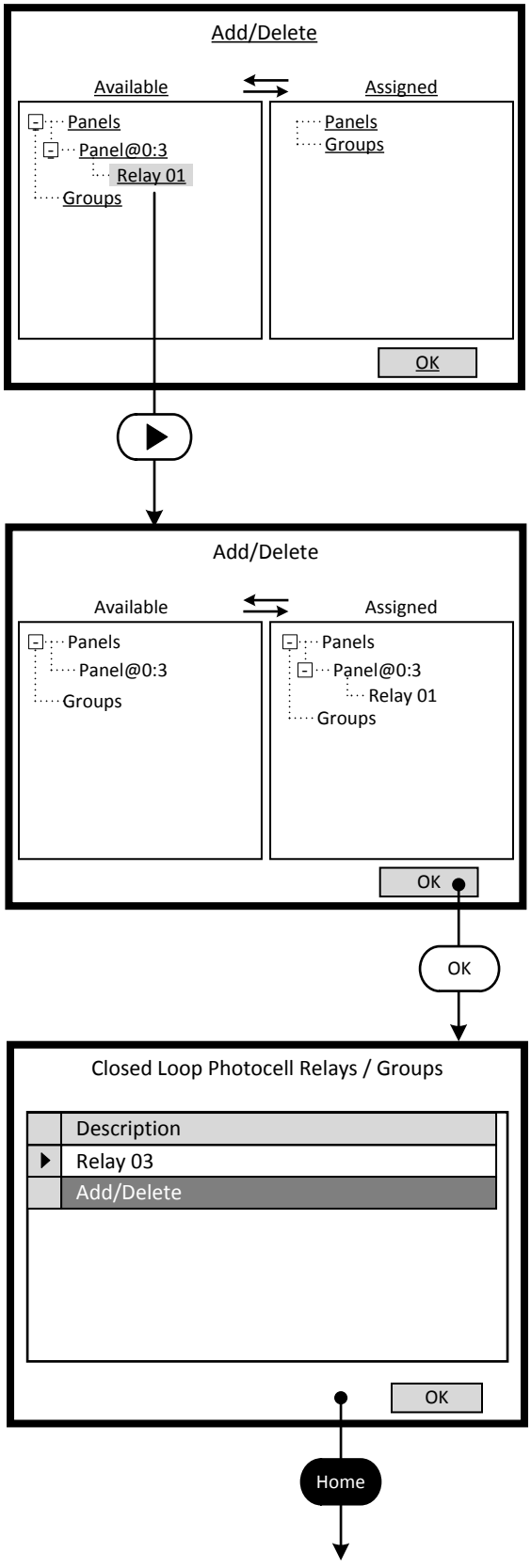
Step 6.6

This is a list of the assigned Relays or Groups in the Area.
Use the navigation keypad to highlight the desired relay or option. Pressing the OK button with the highlight as shown, will advance to the **Add/Delete** screen

Understanding the Screen
No Relays or Groups are assigned to the photocell .

Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the **Photocell Details** screen.*

Key
<**Add**> On screen button.
-**Name**- Label of on onscreen entry field
NEXT Button on keypad
Details Screen Name



Step 6.7
Relays are assigned to the Photocell by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently there are no relays assigned to this occupancy sensor.
Relay 01 of Panel 3 has been selected as a candidate for assignment to the occupancy sensor.

Step 6.8
Relays are assigned to the Photocell by moving them from the -**Available**- list to the -**Assigned**- list. This is accomplished by highlighting the desired relay on the left side of the screen and using the right arrow to move it to the right side of the screen.

Understanding the Screen
Currently relay 01 of Panel 3 has been assigned to the photocell.

Step 6.9
This is a list of the assigned Relays or Groups in the Area.
Use the navigation keypad to highlight the desired relay or option. Pressing the OK button with the highlight as shown, will advance to the **Add/Delete** screen
This completes the set-up. Press HOME or follow the string of OK buttons back to the **Area** list.

Understanding the Screen
Only one Relay is assigned to the photocell .

Description of the onscreen button:
<***OK***> *selecting this onscreen button will save the selections made and return to the* ***Photocell Details*** *screen.*

Section 3

Support Information

Definitions

Agenda	A pattern of Behaviors or list of Behavior Transitions that cover a 24 hour period. Each Agenda provides a maximum of 24 transitions for that period. Time between Transitions can be as short as one minute apart.
Behavior	A predefined control scheme that, when applied to an Area, establishes the interactive priorities among the input devices in that Area. Certain behaviors can change device settings at the time of Transition. The system will stay in the last Behavior until the next Transition is triggered.
Behavior Transition	A point in time that an Agenda triggers an operational change to new Behavior. The transition will only occur in an Area that is assigned to the schedule.
Exceptions Calendar	This is a list of dates that requires specific Agenda that is a departure from the scheduled default Agenda. For example, a list of Holidays that require a unique Agenda.
Schedule	This is a series of seven Agendas corresponding with the days of the week. It is the fundamental or default week that will routinely function. Agendas for dates listed on the Exceptions Calendar will override the default Agenda for that day.
Low Voltage Inputs	Devices that interface with the controlled environment to detect the presence or absence of conditions or people. Devices include occupancy sensors, photocells, low voltage switches, and contact closures. These devices connect to a port on the Low Voltage input card and operate at +24vdc. The input signals from the devices are measured at 0 to +10vdc and can be analog or binary.
Analog Input	This is a signal from a device that will vary in voltage directly proportional to devices' measured detection value. For example, a photocell is used to measure the light level in a space. Full range or maximum light level at the photocell will measure +10vdc and conversely no light level will be 0vdc.
Binary Input	This is a signal from a device that will only have two state or measured voltage levels. Typically these values will be +10vdc (full On signal) or 0vdc (Off signal). An occupancy sensor provides this type of signal, On when occupant is present or Off when no occupant is sensed.
Astronomical Clock	This timing feature tracks the Sunset and Sunrise in the Northern hemisphere as it seasonally changes. The times change or update on a weekly basis. This allows Behavior Transitions based on Sunset and Sunrise times. Offsets from these times are also programmable.
Time/Date Clock	This is the main system clock used to coordinate all Behavior Transitions.

Definitions

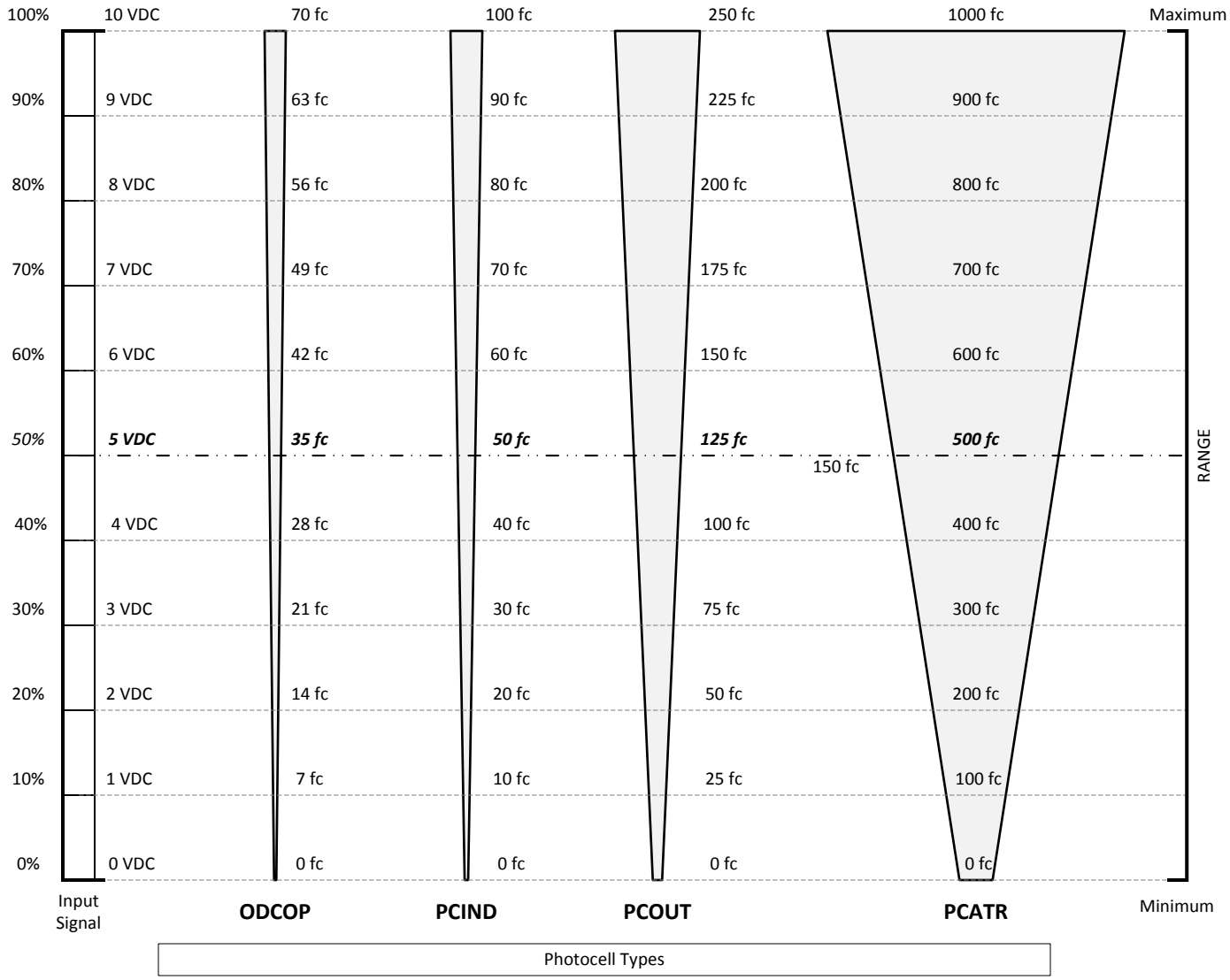
Digital Switch	A manual control switch station that connects to the system via the LumaCan network. They are available in one, two, and four button configurations. Each button on the Digital Switch is programmable for a variety of functions and features.
LumaCan	This is the communication network platform that interconnects all components in the system.
Low Voltage Input Board	This board provides the connection of Low Voltage devices to the system. This board is available in two sizes, 8 and 16 independent inputs.
Closed Loop Photocell	This device measures the light in a specific space or area and provides a proportional signal to the input port. This device will typically measure the light on a surface. It is used to drive the system response for daylight harvesting functions. The light level measured will be the sum of natural and artificial light on the surface. A Target Level is the percentage of measured range that the measured light should maintain. The Closed Loop Photocell controls a single zone.
Open Loop Photocell	This device measures the light level of a source of natural light that is intended to illuminate an area. It should be mounted facing toward the light source as a glass Atrium or sky light. It will be used to vary the artificial light output proportionally to the intensity of the natural light. The Open Loop Photocell can be used to control up to 8 zones with varying degrees of dimming percentage.

Photocell Signals and Calibration

There are several types of photocells available for connection to the GreenMAX system. All photocells must operate at +24VDC and provide an input signal proportional to the foot-candle value being measured. This input signal must range between 0 and +10VDC. The selected photocell must match the application range of measurement.

The chart on this page illustrates the relationship between foot-candles and percentage of scale. Notice the following items:

- The maximum of the range is 100%, minimum is 0%.
- Each type of photocell has a unique maximum range value.
- The proportional values through the signal range while maintaining the relationship between percentage, voltage, and foot-candles.



Low Voltage Connection Diagrams

Diagram 1 - Typical Occupancy Sensor Wiring

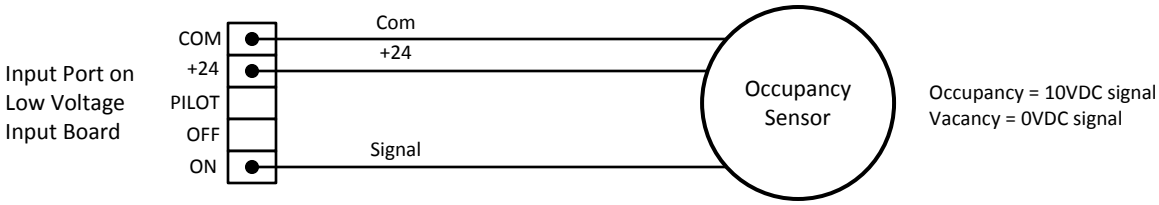
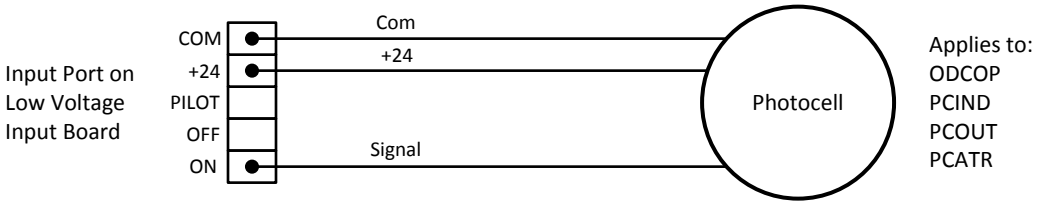
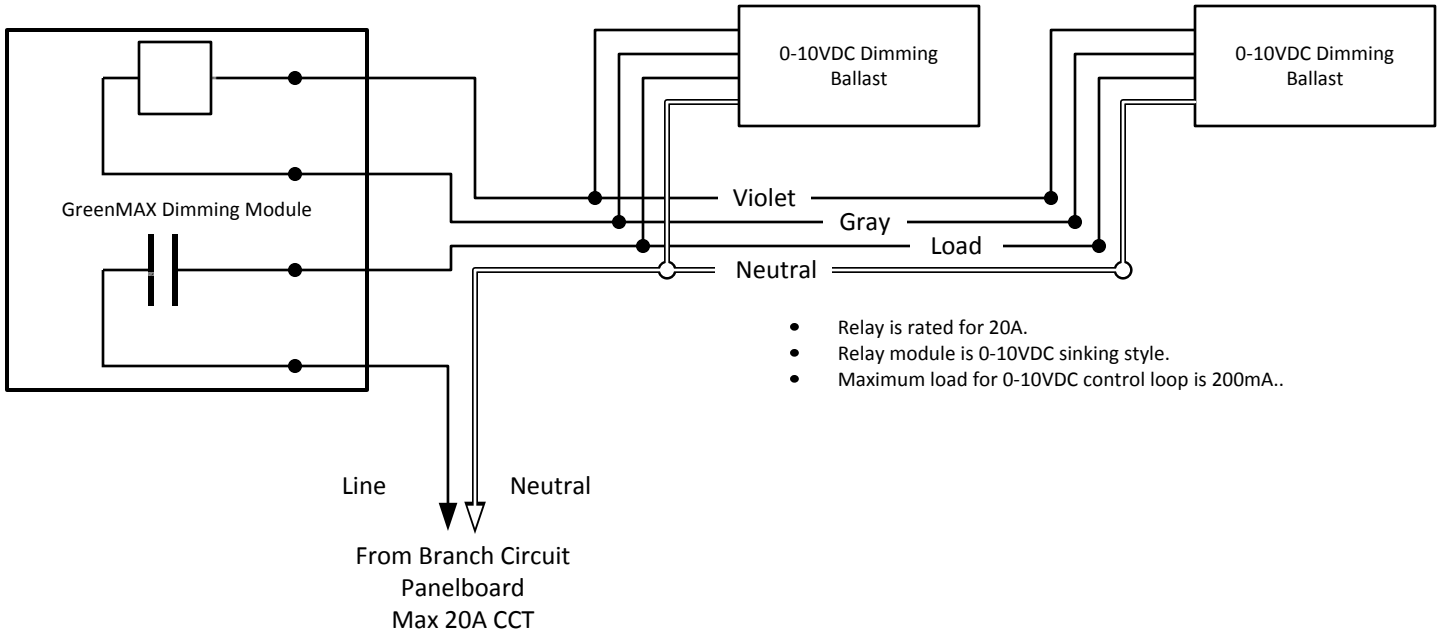


Diagram 2 - Typical Photocell Wiring



- Signal is proportional to measured value in the 0 to 10VDC range.
- Maximum foot-candle reading varies by model.

Diagram 3 - Typical Dimming Module Wiring



- Relay is rated for 20A.
- Relay module is 0-10VDC sinking style.
- Maximum load for 0-10VDC control loop is 200mA..