The Dialog® Lighting Control System

The Dialog® system links relay panels, sensors and switches together on a single common pair of wires. The system has the ability to switch all types of loads and dim incandescent, fluorescent and LED light sources. Dialog® is run by a Lighting Control Unit located in a relay panel and can be accessed via the internet, LAN or touch screen directly on the Lighting Control Unit.

CONFIGURATION

A Dialog® Lighting Control system consists of devices that are configured to send and receive signals to and from other devices on the network. Each device must have an address and must recognize the address of all other devices on the network so that it can send and receive messages to and from the appropriate device. Each device is configured to respond in a specific manner to any message it is able to receive by using the WLC-3150 Lighting Control Unit.

DISCOVERY

When the WLC-3150 Lighting Control Unit (LCU) is connected to a Dialog® network, the device configuration is performed using lighting control software that is contained within the LCU. Upon power up, the LCU will automatically begin a ‘Discovery’ of all connected devices. This sequence will take about 2 minutes and once completed, the LCU will list all panels, outputs, inputs and groups that are on the network. The WLC-3150 Lighting Control Unit will know which outputs are assigned to which inputs. The software is accessed via a standard PC connected to the LCU via ethernet or directly on the LCU itself by using the on-board touch screen.

OPERATION

When the system is operating and a switch input is triggered, the Lighting Control Unit will recognize where it is, which outputs it is to trigger, and will generate a signal to trigger those output relays as a group. A Dialog® WLC-3150 configured network can have a maximum of 64 Relay Drivers and 64 Ballast Controllers, each with its own unique address. The network can contain up to 256 outputs and 256 dimmers, 512 local presets and 512 global presets, and 127 groups. A group can be a combination of output relays anywhere in the network.
**Input Devices**

Input devices consist of switches, occupancy sensors, photo sensors and contact inputs. Each input device can be set to target an output address or group code and does not require any other connection than the Dialog® signal. An input device can be assigned to dim a single output address UP or DOWN or turn the output ON or OFF. When an input device is assigned a group it will control a collection of relays and dimmers and can activate programmable presets to create a lighting scene or activate a mode. There are 127 groups, 512 local presets and 512 global presets in a single network.

**Data Signal**

All of the Dialog® system devices connect to a single, common pair of wires called the Dialog® data signal. The signal is polarity insensitive and the recommended wire used to carry the signal is 18AWG solid copper wire (common LVT type is acceptable).

**Relay Drivers and Relays**

Relay Drivers are controlled by the data signal. Relay Drivers switch relays ON and OFF and detect the ON or OFF status of the relay. Each Relay Driver is set to a unique address.

**Lighting Control Unit**

The Lighting Control Unit or LCU, generates the Dialog® data signal, configures lighting control properties, and stores and runs time schedules.
The Dialog® Lighting Control System has switches that are set to switch codes. The hand held infrared setting unit (WIR-3110) is used to set the code of each Dialog® switch. When a switch code is activated by pressing a switch (or closing a contact), the Lighting Control Unit (WLC-3150) detects this event.

The Lighting Control Unit looks in its memory to determine which relay driver addresses are programmed for that switch. The LCU then sends out signals to those relay driver addresses to operate the relays.

The WIR-3110 is used to access the switch codes in the memory of the LCU. The user can enter/alter which relay driver addresses are contained in each of the switch codes.
Overview

Programmable

The Dialog® system is a high quality, specification grade family of products that provide programmable network control of Douglas relays.

Convenient

Dialog® components all connect to the same pair of data signal wires. Easy installation and access to all features is assured by connection to the data signal. One switch (and/or Contact Input Unit) can control up to 256 programmable relay driver addresses. A switch can be reprogrammed to operate a different set of relays without having to do any rewiring.

Modular

All Douglas products are designed to be modular and the Dialog® system is no exception. Switch modules come in 1-8 devices per unit. This sophisticated control can be applied efficiently to single outputs or multiple groups.
Data Signal

All Dialog® devices are connected together by a common 2-conductor cable known as the data signal. The data signal carries all of the control signals used by the Dialog® system.

Dialog® Switches (WSW-35xx Series)

Dialog® switches connect to the data signal. Over the data signal, Dialog® switches operate the relay via the relay driver. Each switch has a code that identifies it to the system. More than 1 switch can be set to a particular code to provide parallel control from different locations.

Dialog® Dimmer Switches

Dialog® dimmer switches connect to the data signal, operate a dimmer ON or OFF and/or UP and DOWN. The UP and DOWN dimming level buttons ramp the dimmer up and down in a continuous smooth linear track. Each dimmer switch has a code that identifies it to the entire Dialog® system. More than 1 switch can be set to a particular code to provide parallel control from multiple locations. The switch sends a Dialog® code to the WLC-3150 each time a button is pressed.

Contact Input Unit

The WCI-3928 Contact Input Unit can receive contact closures to signal either output addresses or group codes. The WCI-3928 has 8 contact inputs that can each be targeted to an output address or a group code. The WCI-3928 is specially designed for interfacing 24V occupancy sensors to the Dialog® system. It has a 24VDC power supply and accepts 24VDC contact inputs.
Dialog® Relay Drivers

The relay drivers connect to the relays and to the data signal. Relay drivers are used to convert the Dialog® data signal to an ON or OFF pulse to control the relays. They also read the status of the relays and send this information to the Lighting Control Unit.

Each relay driver has a unique address which has two parts:

Part 1: There are two sets of 6 DIP switches numbered 1, 2, 4, 8, 16 & 32 built into the top of the relay driver (one set on the upper side of the unit and one set on the lower side of the unit). Part 1 is the sum of the DIP switches in the ON position. 64 unique addresses are available for a relay driver (0 - 63).

Part 2: There are eight output wires as part of the unit. Part 2 is one of the 8 red output wires of the relay driver. The 8 outputs are divided among two separate addresses (four on the left side of the unit and four on the right) each with their own permanently assigned codes (#.1, #.2, #.3, #.4)

For example, to assign a relay driver address of 18.2, slide relay driver DIP switches 16 & 2 ON (16+2 = 18) and connect a relay to the #.2 terminal.

0-10V Ballast Controller

The WDB-3314 Ballast Controller is designed for dimming 0-10V ballasts. There are four dimming outputs that can each have multiple ballasts connected at the same time. If several ballasts are connected to the same 0-10V dimmer output, they will dim together. To control the dimmer output unit, connect it to the Dialog® data signal and set it to an output address using the on-board DIP switches.
**Interior, Ceiling Mount Occupancy Sensor**

The WOC-3801 is an indoor, ceiling mounted, PIR occupancy sensor that connects directly to the 2-conductor data signal. This sensor is ideal for 8 to 12 foot ceilings with up to a maximum of 16 foot walking motion only detection. The WOC-3801 is set to signal either an output address or a group code.

**Interior, Ceiling Mount Daylight Sensor and Exterior Daylight Sensor**

The WPS-3711 Interior Daylight Sensor and WPS-3741 Exterior Daylight Sensor are autoranging and can measure light levels from 0 to 65,000 lux. Each daylight sensor connects directly to the data signal and requires no other connections. Algorithms, settings and trip points for each sensor are stored and run on the WLC-3150 Lighting Control Unit.

**Handheld Infrared Setting Unit**

The WIR-3110 Infrared Setting Unit is used to assign a switch code (individually addressable, group or preset) to each switch and contact input unit. Three types of switch codes are provided to suit various applications.

**Lighting Control Unit**

The WLC-3150 Lighting Control Unit (LCU) manages all of the devices in a system of 256 relays and 256 dimmers. The LCU generates the Dialog® data signal, stores the lighting control properties, programs and controls demandflex Dialog® series ballasts. To edit settings, the LCU has a built-in touch screen interface and a web server for remote connection.
Data Signal

All Dialog® devices are connected together by a common 2-conductor cable known as the data signal. The data signal carries all the control signals used by the Dialog® system. It should be 2-conductor #18AWG. It is recommended to route a dedicated main trunk line between relay panels with no interruptions, branches or splices between panels. Switch legs and trunk line branches should only originate from the relay panels. Take care not to connect non-Dialog® devices to the data signal. Each non-Dialog® device requires its own dedicated wiring to a relay panel.

This wiring strategy permits easy troubleshooting should a short circuit occur on the data signal. It also simplifies the addition of amplifiers should they become necessary. Use an amplifier if the total combined distance of the data signal for all trunk and switch lines is greater than 1500m, or if the data signal line from the LCU to a component is greater than 500m. Distance is a one-way measure. Make sure not to connect the data signal across both sides of an amplifier. See the next page for amplifier placement and wiring length.
Data Signal

The following table and diagram are to demonstrate how the Dialog® data signal is to be wired and how to calculate your wiring lengths and possible amplifier placements.

### Calculation Method for DIALOG® Signal Wire Length

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>Maximum Wiring length (Max. distance from LCU or amplifier to device)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 AWG</td>
<td>500m</td>
</tr>
<tr>
<td>18 AWG</td>
<td>300m</td>
</tr>
</tbody>
</table>

The longest wire should be no more than a third of the total wire length.

Using 16 AWG wire, installation of an amplifier can extend 500m max wiring length.

When a maximum of 2 series-wired amplifiers are used in a system, wiring can be extended to 1,500m total length maximum.

### AMPLIFIER

Calculation method for DIALOG® signal current:

- Ex. 12 classrooms
- 0-10V Ballast Controller: WDB-3314, 4mA x 12
- Relay Driver, 8 Outputs: WRD-3408, 3mA x 12
- Data line Occupancy Sensor: WOC-3801, 3mA x 12
- Photo sensors: WPS-3711, 3mA x 12
- Dialog® Signal 8-Button Switch: WSW-3528, 3mA x 12
- Dialog® Signal Key Switch: WSW-3502, 3mA x 12

**TOTAL SIGNAL CURRENT CONSUMPTION**: 228 mA

- Output signal current from the LCU is 250mA.
- Maximum of 5 amplifiers can be installed in a system.
- 2 series-wired amplifiers or 5 star-wired amplifiers can be installed in a system.
Relay Panel

The Relay Panel breaks down into two main parts:

1) The Enclosure
   By Douglas or by the distribution tub manufacturer.

2) The Interior
   A backpan manufactured by Douglas, sized to suit the enclosure.

Local Transformer
Supplies 24VAC power to all the components in the panel.

Note:
All Dialog® switches receive their power from the data signal, not the local transformer.

Relays
H.I.D. relays are mounted on the brackets.

Line Voltage Compartment
(Class 1)

Low Voltage Compartment
(Class 2)

Barrier Layout
There are alternate layouts for barriers on PWEx enclosures. Panel shown above is the standard wireway layout supplied (left most configuration shown below).

Douglas Panel Numbering System

Enclosure

Interior

Covers

Tub Code

Barriers

Relay Capacity

Screw-on

Hinged

S1=Surface

F2=Flush

S3=Surface

F4=Flush

PWE#

C

W

M

relay Code

Relay Capacity

S1

S3

F2

F4

Relay Drivers
Mounted on DIN rail.

DIN Rail

Line/Low Voltage Barrier
Can be re-located to provide more space for low voltage

Terminal Block for Data Signal
Three sets of terminals:
1) In from previous panel on dedicated data signal trunk line.
2) Out to next panel on dedicated data signal trunk line.
3) Out to nearby switches.

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Dialog® Lighting Control System

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WLC-3150 Lighting Control Unit

**LCU Network IN/OUT**
Combines multiple LCU Networks using RS-485 connections.

**Data Signal & 24VAC**
Connect 2 #18AWG for data signal. Connect 2 #18AWG for power (white/blue).

**USB Port**
Upload XML configuration using USB key/flash drive.

**LCD Display**
Use touch screen for programming.

**Ethernet Connection**
Connect to PC with standard ethernet connector. Connecting to LAN allows access from any computer on the network via its internet browser. Use to connect multiple LCU’s via a global web server.

**Data Signal & 24VAC**
(alternate to top connection)
Connect 2 #18AWG for data signal. Connect 2 #18AWG for power (white/blue).
Specifications: WLC-3150 Lighting Control Unit

**Power**
- 24VAC/100mA Class 2 low voltage device.

**Data Signal Connection**
- Connect to network with a 2-wire cable.
- Use 18AWG, solid, unshielded wire.

**Computer/LAN Connections**
- 10/100 base ethernet connection on bottom of unit to individual PC or LAN.

**Memory**
- System capacity: Each WLC-3150 can control up to 256 relay driver outputs and 256 dimming outputs.
- Control program stored in flash memory.
- Power not required for storage
- System data can be backed up to, or downloaded from, the connected PC.

**Environment**
- Indoors, stationary non-vibrating, non-corrosive atmosphere and non-condensing humidity.
- Ambient operating temperature: +5° to +120° F (-15° to +50° C).
**To connect to the WLC-3150:**

1. Make sure the WLC-3150 is properly installed in the panel and properly connected to the 24V power and to the data signal.

2. The WLC-3150 Lighting Control Unit is equipped with a touch screen for easy navigation and programming of the Dialog® lighting control system. Using a generic pointer such as the tip of a pencil or pen, tap the ‘Menu’ button on the home screen.

3. You will then be prompted to enter a password to proceed. The default password is set to ‘dlc’. Be sure to change this to a unique password relevant to your facility using the ‘Settings’ tab from the Main menu, and document the new password in a secure place. Once the password is entered, press OK.

4. The Main screen appears, displaying all the menu options, and their icons, for the WLC-3150. To select a menu, tap on its name or icon. The available menus are:

- **Outputs**
  - Manage outputs
- **Groups**
  - Manage groups
- **Presets**
  - Manage presets
- **Modes**
  - Manage modes
- **Behaviors**
  - Manage lists of events
- **Constant Lighting Controller**
  - Manage daylight modes and sensors
- **Schedules**
  - Manage schedules of presets or group actions
- **Inputs**
  - Manage inputs
- **Settings**
  - Edit date/time/security/etc.
- **Event Logs**
  - View most recent 100 event logs
The Outputs screen has two submenus:
1. Outputs>Basic (activate by selecting Outputs)
2. Setup>Panels (activate by selecting Panels)

1. Outputs>Basic

The Outputs>Basic screen lists the outputs, panel-by-panel. For each output, shown are:
- id (address, channel, r = relay or d = dimmer)
- DS (daylight sensor status, if any)
- G (group assigned to)
- Label (descriptive name, assigned in this submenu)
- Status (Blue=ON, Orange=OFF, Black=not connected)

The Outputs>Basic screen has 4 tabs:

1. Label:
   - Edit the output name and/or description:
     a) After selecting output, select its label.
     b) Enter the new label name using the keyboard or slider and press OK.

2. Control:
   a) Override a selected relay ON or OFF.
   b) Override a selected dimmer to maximum or minimum dimming levels or adjust the dimming % with the slider that appears.

3. LOGs:
   Select to display a history of output activity.

4. SetUp:
   Configure a selected output:
   a) Select Properties.
   b) Select the communication bus that is connected: Dialog (default), CCM (demandflex Dialog Series Ballast) Unknown (communication bus by others).
   c) Select the output type: Relay or Dimmer.
   d) If selected output is a dimmer, set optional maximum or minimum dimming % with slider that appears.
2. Setup>Panels

The Setup>Panels screen lists the installed panels and their assigned outputs. For each panel, shown are:

- **id** (for each output: address, channel, r = relay or d = dimmer)
- **Label** (descriptive names for the panel and its location, assigned in this submenu)
- **Row** (for each output: row where it’s located)
- **Col** (for each output: column where it’s located)

This screen allows you to list new panels that were installed since system startup, edit panel labels and assign relay outputs to panels.

1. To add a new panel that has been installed since system startup:
   a) Scroll through panel list to unlabeled relays, then select a relay. When the new screen appears, select Add Panel.
   b) On the screen that appears, enter the new panel name using the keyboard or slider and press OK.
   c) On the screen that appears, enter the new panel location name using the keyboard or slider and press OK.

2. To edit a panel that has been installed since system startup:
   a) Scroll through panel list (arranged alphabetically by panel name) the panel, then select it.
   b) Select the left label. On the screen that appears, enter the new panel name using the keyboard or slider and press OK.
   c) Select the right label. On the screen that appears, enter the new panel location name using the keyboard or slider and press OK.

3. To assign a relay output to a panel:
   a) Scroll through panel list to the panel an existing relay is assigned to, or to Relays not in panels (for an unassigned relay), then select the relay.
   b) On the screen that appears, select Change panel (for an assigned relay) or Specify panel (for an unassigned relay).
   c) On the screen that appears, select the panel where the relay is to be assigned, then press Select.
Groups Menu

The Groups screen has two submenus:
1. Groups>Groups (activate by selecting Outputs)
2. Setup>Headers (activate by selecting Headers)

1. Groups>Groups

The Groups>Groups screen lists the groups, in order of id number. A Group is a combination of outputs that will be triggered by the same outputs. Relays from different panels can be in the same group, and the same relay can be in more than one group. For each group, these can be shown:
- id (G001-G127, in order of time of creation)
- Label (descriptive group name, assigned in this submenu)
- Total (number of outputs in the group)
- Rel (number of relays in the group)
- D (number of dimmers in the group)

The Groups>Groups screen has 4 tabs:

1. Label:
   Edit the group’s descriptive name:
   a) After selecting group, select its group label (default is group’s id).
   b) Enter the new group name using the keyboard or slider and press OK.

2. Control:
   a) Override a selected relay group ON or OFF.
   b) If the selected group includes dimmable outputs, set their dimmer value with the slider that appears.

3. LOGs:
   Select to display a history of a selected group’s activity.

4. SetUp:
   Configure a selected group:
   a) Select a group to display its configuration choices.
   b) To select outputs to be included in the group, select Output List. On the screen that appears, select outputs by marking their check box in the IN/OUT column. To select all listed outputs, select ALL.

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4. SetUp (continued):

Configure a selected group:

c) To set whether the group will be turned ON only, OFF only or ON/OFF by its controlling input, select On/Off setup. On the screen that appears, first select the appropriate input type (switch, occupancy sensor or contact input), then select the appropriate ON and/or OFF check box(es) for each output in the group.

d) To set the parameters of the inputs controlling the group, group, select Settings. On the screen that appears, select a setting to be changed and then set and enter the appropriate values in the screen that appears when the setting is selected. Settings include:

- *Presets Associated* - display of any presets that were set up for the group.

- *Switch* - select the manufacturer of the switch input, default *Douglas*, then select OK.

- *Dimmer* - set the maximum (*Perm Max*, default 100%) and minimum (*Perm Min*, default 0%) percentage the group can be dimmed by moving the slider and selecting OK.

- *Contact Input* - select the manufacturer, default *Douglas*, and the type, default *Momentary Toggle*, of the contact input. Also, set the delay OFF time of the contact input, default 30 seconds, by moving the slider and selecting Set.

- *Occupancy Sensor* - select the manufacturer, default *Douglas*, of the occupancy sensor input. Also, set the sensitivity of the occupancy sensor input, default 10 and/or the delay OFF time, default 30 seconds, by first selecting *Douglas* for the *OCC Manufacturer* setting, then selecting *OCC Sensor Sensitivity* and, in the screen that appears, moving the slider and selecting Set. and/or selecting OCC Vacancy OFF Timer and, in the screen that appears selecting the appropriate delay OFF time and selecting OK.

e) If the group is to be associated with a Preset that has been set up in the *Presets Menu*, select *Add Preset*. On the screen that appears, select whether the Preset is local (operates within the panels controlled by this LCU) or global (operates over the entire network of multiple LCU’s) and select OK. Then, when the *Preset Menu* appears, select the Preset from the list presented.
Groups Menu

2. Setup>Headers

The Setup>Headers screen lists the Headers. A ‘Header’ is a descriptive title of a function or area served by a group or a number of related groups. For instance (a) the Header ‘ballroom area’ is a description of groups G001, which lights the hallway leading to the ballroom, and the group G002, which lights the ballroom itself. Or ‘lobby’ is a description of group G004 which lights the lobby. A Header can have any number of groups associated with it, and the same group can be associated with more than one Header. The screen also allows you to list new Headers and select the groups associated with them, edit existing Headers (rename the header or change the associated groups), or delete headers.

1. To create a new Header:
   a) Select a group (each group is displayed as the group label followed by group id number), either associated with an existing Header or not associated with a header and select change Header.
   b) On the screen that appears, select add Header.
   c) On the screen that appears, enter the new Header name using the keyboard or slider and press OK.

2. To associate, or un-associate, a group to a Header:
   a) Select a group, either associated with an existing Header or not associated with a Header and select change Header.
   b) On the screen that appears, select the Header by pressing its Select button. To un-associate a group from an existing Header, select (no Header).

3. To change a Header name:
   a) Under the Header’s title select rename (name).
   b) On the screen that appears, enter the new Header name using the keyboard or slider and press OK.

4. To delete a Header:
   a) Un-associate any groups from the Header.
   b) Under the Header’s title select delete.
   c) On the Confirmation screen that appears, select Yes.
Presets Menu

The Presets screen has two submenus:
1. Local Presets (activate by selecting)
2. Global Presets (activate by selecting)

1. Local Presets

The Local Presets screen lists the Local Presets, in order of Id number. A Preset is a set of parameters for designated relay or dimmer outputs when those outputs are activated by designated inputs. A Local Preset applies only to outputs and inputs programmed by this

To create a new Local Preset:
   a) Select Add Local.
   b) On the screen select preset type and press OK.
   c) If Output List was selected, select associated outputs from the list that appears. If Mode Trigger was selected, select Modes from list that appears.

The Local Presets screen has 4 tabs:

1. Label:
   Edit the Preset’s descriptive name:
   a) After selecting the Preset, select its Preset label (default is Preset’s id).
   b) Enter the new Preset descriptive name using the keyboard or slider and press OK.

2. Control:
   a) Activate or deactivate a selected Preset, by selecting ACTIVATE or DEACTIVATE.
   b) The Status column will show an orange rectangle for activated presets.

3. LOGs:
   Select to display a history of a selected Preset’s activity.

4. SetUp:
   Configure a selected Preset:
   a) Select Preset to display its configuration choices.
   b) To select outputs to be controlled by the Preset, select Output List. On the screen that appears, select an output by marking its check box in the IN/OUT column. To select all outputs listed, select ALL ON.
4. SetUp (continued):

Configure a selected Preset:

b) (continued) If a selected output is a relay, select whether the relay is turned ON or OFF when the preset is activated. If a selected output is a dimmer, set its dimming percentage when the Preset is activated by selecting %, then adjusting the slider on the screen than appears and selecting OK.

c) To set the parameters of the Preset controlling the group, group, select Settings. On the screen that appears, select a setting to be changed and then set and enter the appropriate values in the screen that appears when the setting is selected.

Settings include:

1. **Group associated** - Display of any groups that are associated with Preset when activated.

2. **Mode Trigger** - Preset operates as a trigger for a pre-programmed Mode. Select to display the screen for specific input or output Mode.

3. **Fade Type** - Set the dimming method for the dimmers activated the Preset. Type can either be **Time** (number of seconds for dimmers to go to new value when activated by the Preset) or **Rate** (dimming change per second for dimmers to go to new value when activated by the Preset). Select Time or Rate, select OK, then, in the screen that appears, select the Value (in seconds for Time or % per second for Rate) by moving the slider and selecting OK.

4. **Switch** - Specify the manufacturer, default Douglas, of the switch outputs and inputs associated with the Preset.

5. **Contact Input** - Select the manufacturer, default Douglas, and the type, default Momentary Toggle, of the connected contact input that will trigger the Preset. Also, set the delay OFF time of the contact input, default 30 seconds, by moving the slider and selecting Set.

6. **Occupancy Sensor** - select the manufacturer, default Douglas, of the occupancy sensor input. Also, set the sensitivity of the occupancy sensor input, default 10 and/or the delay OFF time, default 30 seconds, selecting OCC Sensor Sensitivity and, in the screen that appears, moving the slider and selecting Set and/or selecting OCC Vacancy OFF Time in the screen that appears, selecting the appropriate delay OFF time and selecting OK.
Presets Menu

2. Global Presets

The Global Presets screen lists the Global Presets, in order of Id number. A Preset is a set of parameters for designated relay or dimmer outputs when those outputs are activated. A Global Preset applies to outputs and inputs within the entire network of multiple LCU’s.

To create a new Global Preset:
   a) Select Add Local.
   b) On the screen select preset type and press OK.
   c) If Output List was selected, select associated outputs from the list that appears. If Mode Trigger was selected, select Modes from list that appears.

The Global Presets screen has 4 tabs:

1. Label:
   Edit the Preset’s descriptive name:
   a) After selecting the Preset, select its Preset label (default is Preset’s Id).
   b) Enter the new Preset descriptive name using the keyboard or slider and press OK.

2. Control:
   a) Activate or deactivate a selected Preset, by selecting ACTIVATE or DEACTIVATE.
   b) The Status column will show an orange rectangle for activated presets.

3. LOGs:
   Select to display a history of a selected Preset’s activity.

4. SetUp:
   Configure a selected Preset:
   a) Select Preset to display its configuration choices.
   b) To select outputs to be controlled by the Preset, select Output List. On the screen that appears, select an output by marking its check box in the IN/OUT column. To select all outputs listed, select ALL ON.
4. SetUp (continued):
Configure a selected Preset:

b) (continued) If a selected output is a relay, select whether the relay is turned ON or OFF when the Preset is activated. If a selected output is a dimmer, set its dimming percentage when the Preset is activated by selecting %, then adjusting the slider on the screen than appears and selecting OK.

c) To set the parameters of the Preset controlling the group, select Settings. On the screen that appears, select a setting to be changed and then set and enter the appropriate values in the screen that appears when the setting is selected.

Settings include:
1. Group associated - Display of any groups that are associated with Preset when activated.
2. Mode Trigger - Preset operates as a trigger for a pre-programmed Mode. Select to display the screen to specify an input or output Mode.
3. Fade Type - Set the dimming method for the dimmers activated the Preset. Type can either be Time (number of seconds for dimmers to go to new value when activated by the Preset) or Rate (dimming change per second for dimmers to go to new value when activated by the Preset). Select Time or Rate, select OK, then, in the screen that appears, select the Value (in seconds for Time or % per second for Rate) by moving the slider and selecting OK.
4. Switch - Specify the manufacturer, default Douglas, of the switch outputs and inputs associated with the Preset.
5. Contact Input - Select the manufacturer, default Douglas, and the type, default Momentary Toggle, of the connected contact input that will trigger the preset. Also, set the delay OFF time of the contact input, default 30 seconds, by moving the slider and selecting Set.
6. Occupancy Sensor - select the manufacturer, default Douglas, of the occupancy sensor input. Also, set the sensitivity of the occupancy sensor input, default 10 and/or the delay OFF time, default 30 seconds, selecting OCC Sensor Sensitivity and, in the screen that appears, moving the slider and selecting Set and/or selecting OCC Vacancy OFF Time in the screen that appears, selecting the appropriate delay OFF time and selecting OK.
Modes Menus

The Modes screen has three menus, each with their own submenus:
1. Output Modes
2. Input Modes
3. Constant Lighting Control Functions

Output Mode Menu

The Output Modes Menu has four submenus:
1. Output Modes>Astro (activate by selecting Astro)
2. Output Modes>Timeout (activate by selecting Timeout)
3. Output Modes>Flick (activate by selecting Flick)
4. Output Modes>Perm Block (activate by selecting Perm Block)

1. Astro

The Astro screen lists the Astro Modes. An Astro mode triggers outputs at a time determined by the position of the sun at that location. The LCU calculates dusk-to-dawn times based on information provided in the Settings Menu.

To create a new Astro Mode:
   a) Select Add Mode.
   b) On the screen select target output type and press OK.
   c) Select target type and press OK, then select target elements, by pressing their Select buttons, from the list that

The Astro screen has 3 tabs:

1. Label:
   Select to edit an Astro Mode’s Label, or descriptive name.

2. Control:
   Activate, Deactivate or Modify (configure) a selected mode:
   a) Activate or deactivate a selected Mode, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.
   b) Modify or configure a selected Mode, by selecting MODIFY. On the screen that appears, you can offset the time the Mode occurs before or after (default 0 seconds) the calculated dawn-to-dusk time. A negative offset activates a mode before dusk or deactivates it before dawn. A positive offset activates a mode after dusk or deactivates it after dawn. Select Dawn Offset and/or Dusk Offset, then set the offset value on the screen that appears and press OK.

3. Logs:
   Select to display a history of a selected Astro mode’s activity.
Output Mode Menu

2. Timeout

The Timeout screen lists the Timeout Modes. A Timeout mode triggers outputs or presets to perform certain functions (usually turning outputs OFF) after a specified time duration, or delay time. When a Timeout is enabled, it causes the LCU to start an internal timer. Upon time expiry, the outputs or presets function.

To create a new Timeout Mode:

a) Select Add Mode.
b) On the screen select target output type and press OK.
c) Select target elements, by pressing their Select buttons, from the list that appears.

The Timeout screen has 3 tabs:

1. Label:
   Select to edit a Timeout Mode’s Label, or descriptive name.

2. Control:
   Activate, Deactivate or Modify (configure) a selected mode:
   a) Activate or deactivate a selected Mode, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.
   b) Modify, or configure. a selected Mode, by selecting MODIFY. On the screen that appears you can set or change the Timeout parameters:
      Triggering Preset - Display only of the Preset that can trigger the Timeout Mode. This is programmed in the Preset Menu.
      Timeout Countdown - The delay time. Set by selecting, then specify the time on the screen that appears and press OK.
      Flick Enable - Enable, disable or change time of Flick Warn option, which causes lights to flash the time interval displayed as Flick Offset before shutoff. Set by selecting, then specify the Flick Warn parameters on the screen that appears and press OK.
      Flick Offset - Override or change Flick Offset. Set by selecting, then specify the Flick Offset parameters on the screen that appears and press OK.
      Timeout Dimmer Level - Dimming level of dimmers during a Timeout mode (default level is 0%). Set by selecting, the move the slider to the desired level on the screen that appears and press OK.
      Timeout Dimmer Fade Time - Time interval to fade to Timeout Dimmer Level once a Timeout is activated (default is 5 seconds). Set by selecting, the move the slider to the desired level on the screen that appears and press OK.

3. Logs:
   Select to display a history of a selected Timeout mode’s activity.

Content Subject to Change Without Notice
Output Mode Menu

3. Flick

The **Flick** screen lists the Flick Modes. A Flick mode triggers outputs to perform a Flick Warn, which is shutting OFF and ON to warn occupants that they will shut off after a specified time duration.

To create a new Flick Mode:

- a) Select *Add Mode*.
- b) On the screen select target output type and press OK.
- c) Select target outputs or groups, by pressing their *Select* buttons, from the list that appears.

The Flick screen has 3 tabs:

1. **Label**:
   Select to edit a Flick Mode’s *Label*, or descriptive name.

2. **Control**:
   Activate, Deactivate or Modify (configure) a selected mode:
   - a) Activate or deactivate a selected mode, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.
   - b) Modify, or configure, a selected Mode, by selecting *MODIFY*. On the screen that appears you can set or change the Timeout parameters:
     - *Triggering Preset* - Display only of the Preset that can trigger the Flick Mode. This is programmed in the *Preset* Menu.
     - *Do Off Action* - Enable the shutting off of Flick when an output is manually shut off during the Flick time duration.
     - *Off Wait Duration* - Time interval outputs are shut off after the Flick Warn. Set by selecting, then move the slider to the desired time interval on the screen that appears and press *OK*.
     - *# of Off(s) to Skip* - The number of times an output or outputs in a group controlled by the Flick Mode can reset the start of Flick when they are manually turned OFF and ON during the Flick period. Set by selecting, then move the slider to the desired value.

3. **Logs**:
   Select to display a history of a selected Flick mode’s activity.
Output Mode Menu

4. Perm Block

The Perm Block screen lists the Perm Block mode. A Perm Block mode, once activated, disables all functionality with its associated outputs, groups and presets. Functionality can only be returned when the Perm Block mode is deactivated.

To create a new Perm Block Mode:

a) Select Add Mode.
b) On the screen select target output type and press OK.
c) Select target type and press OK, then select target elements, by pressing their Select buttons, from the list that

The Perm Block screen has 3 tabs:

1. Label:
   Select to edit a Perm Block Mode’s Label, or descriptive name.

2. Control:
   Activate, Deactivate or Modify (configure) a selected mode:
   a) Activate or deactivate a selected mode, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.

3. Logs:
   Select to display a history of a selected Perm Block mode’s activity.
Modes Menus

Input Modes Menu

The Input Modes Menu has two submenus:
1. **Output Modes>Quiet** (activate by selecting Quiet)
2. **Output Modes>Perm Block** (activate by selecting Perm Block)

1. Quiet

The Quiet screen lists the Quiet Modes. A Quiet mode is a temporary bypass of the occupancy sensors with a specified group for a specified amount of time. Quiet mode is used to prevent outputs switching OFF when there is little or no activity in a room but the room continues to be occupied.

To create a new Quiet Mode:
- a) Select Add Mode.
- b) On the screen select target output type and press OK.
- c) select target type (usually Group) and press OK, then select the group by pressing Select.

The Quiet screen has 3 tabs:

1. Label:
   Select to edit a Quiet Mode’s Label, or descriptive name.

2. Control:
   Activate, Deactivate or Modify (configure) a selected Quiet mode:
   - a) Activate or deactivate a selected Mode, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.
   - b) Modify or configure a selected Mode, by selecting MODIFY. The screen displays any triggering presets for the group and allows you to set the duration of the Quiet time period (default 90 seconds). To change the duration, select Quiet Duration, then select the number of hours (blue rectangles) and/or seconds (grey rectangles) and select OK.

3. Logs:
   Select to display a history of a selected Quiet mode’s activity.
Input Mode Menu

2. Perm Block

The Perm Block screen lists the Perm Block mode. A Perm Block mode, once activated, disables all functionality with its associated inputs. Basically, Perm Block deactivates all its associated inputs and they can only be activated when the Perm Block mode is deactivated.

To create a new Perm Block Mode:
   a) Select Add Mode.
   b) On the screen select target output type and press OK.
   c) select Input target type and press OK, then select input elements, by pressing their Select buttons, from the list that appears.

The Perm Block screen has 3 tabs:

1. Label: 
   Select to edit a Perm Block Mode’s Label, or descriptive name.

2. Control:  
   Activate, Deactivate or Modify (configure) a selected mode:  
   a) Activate or deactivate a selected mode, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active mode and a blue rectangle shown for a deactivated mode.

3. Logs:  
   Select to display a history of a selected Perm Block mode’s activity.

Constant Lighting Control Functions Menu

The Constant Lighting Control Functions Menu has three submenus:

1. C.L.C. Functions>Outputs (activate by selecting Outputs)  
2. C.L.C. Functions>Groups (activate by selecting Presets)  
3. C.L.C. Functions>Presets (activate by selecting Groups)

The Constant Lighting Control Functions Menu, which allows you to configure a Constant Lighting Control Mode, where light levels are constantly maintained by dimming or brightening within an area, are described starting on page 32.
Behaviors Menu

Input Modes Menu
The Behaviors Menu has one submenu:
1. Behaviors>Quiet (activate by selecting Behaviors)

1. Behaviors
The Behaviors screen lists the Behaviors. A Behavior causes a specified combination of outputs, groups, presets, modes and schedules to each either activate or deactivate in a specific order whenever that Behavior is activated. When the Behavior is deactivated, it causes a different specified combination of outputs, groups, presets, modes and schedules to activate or deactivate in a specific order. A Behavior causes two different events to occur, one when the Behavior is activated and the other when the Behavior is deactivated.

To create a new Behavior:
   a) Select Add Behavior. The new Behavior will appear on the list.

The Behaviors screen has 4 tabs:

1. Label:
   Select to edit a Behavior’s Label, or descriptive name.

2. Control:
   Activate or Deactivate a selected Behavior:
   a) Activate or deactivate the selected Behavior by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active Behavior and a blue rectangle for a deactivated Behavior.

3. Logs:
   Select to display a history of a selected Behavior’s activity.
4. Setup:

Select to edit (configure) a selected Behavior.

a) Select the Behavior from the list, then select ON Actions, that is what will be caused to occur when the Behavior is activated, by selecting ON Actions. Select Add Action on the screen that occurs. Then, specify the element type (output, group, preset, etc.) and select OK. Then select the specific elements from the list presented. For each element, select which action the element is to perform when the Behavior is activated, then press OK.

b) When an ON Action is specified, set the order of its occurrence relative to the other ON actions when the Behavior is activated. Select UP or DOWN to advance or move back, respectively, its place in the order. Select WAIT to delay its occurrence an amount of time starting from when the Behavior activates. Select the wait time using the slider on the screen that appears and press OK. Note that any following ON Actions will also be delayed by this wait time.

c) Select the OFF actions from a selected Behavior, that is what will be caused to occur, that is which elements will activate or deactivate and in what order, when the Behavior is deactivated, by selecting OFF Actions. For setting up each OFF Action, follow the same procedures as in setting up an ON action.
Constant Lighting Controller Menus

The Constant Lighting Controller screen has two menus, each with their own submenus:
1. Daylight Sensors
2. Constant Lighting Control Functions

Daylight Sensors Menu

The Daylight Sensors Menu has two submenus:
1. Daylight Sensors>Local Sensors (activate by selecting Local Sensors)
2. Daylight Sensors>Global Sensors (activate by selecting Global Sensors)

1. Local Sensors

The Local Sensors screen lists the local sensors, which are photosensor addresses having a RS-485 connection to the LCU (maximum of 64) and their ON/OFF state. For each local sensor, you can Sample (obtain a real-time light intensity reading) or Modify (set parameters) using this screen.

The Local Sensors screen has 2 tabs:

1. Control:
   Sample or Modify (configure) a selected photosensor:
   a) Monitor the current light level reading of a selected Sensor, by selecting SAMPLE. If the photosensor is ON and properly connected, its light level reading (LUX) will be displayed on a screen that appears.
   b) Modify or configure a selected Sensor, by selecting MODIFY. On the screen that appears, you can change the Refresh Rate (how often the sensor takes a new light level reading), the Buffer Size (for storing previous readings) and the Cut Off Percentage (default 50%). Select the parameter, then, on the screen that appears, set the new value using the slider and press OK.

2. Logs:
   Select to display a history of a selected Sensor’s activity.

2. Global Sensors

The Global Sensors screen lists the global sensors, which are photosensor addresses that can be recognized by other LCU’s in the network. Sensors that are also local sensors (having a RS-485 connection to this LCU) will be displayed with a black font and can be sampled and modified, like in the Local Sensor screen. Sensors displayed in a grey font do not have a RS-485 to this LCU and are shown for display only. For all sensors shown, a history can be displayed by selecting the LOG tab.

Content Subject to Change Without Notice
Constant Lighting Controller Menus

Constant Lighting Control Functions Menu

The Constant Lighting Control Functions Menu has three submenus:
1. C.L.C. Functions>Outputs (activate by selecting Outputs)
2. C.L.C. Functions>Groups (activate by selecting Groups)
3. C.L.C. Functions>Presets (activate by selecting Presets)

1. Outputs

The Outputs screen lists all outputs that are set to be controlled by a Constant Light Controller (CLC) local sensor. The CLC sensors can have three types of settings:

Threshold Trigger: triggers a relay output ON when the measured light level passes below a value called the Low Level Set Point and triggers the output OFF when the light level passes above a value called the High Level Set Point.

Open Loop: constantly adjusts the dimming levels of each output in response to the measured light level coming into the room.

Closed Loop: constantly adjusts the dimming levels of each output in response to the measured light level inside the room.

The outputs are listed by type of CLC setting, in order of the sensor number they are controlled by. Output type is also displayed, r = relay and d = dimmer. Outputs are assigned to sensors when a new Output Mode is created.

1. To create a new Output Mode:
   a) Scroll down the screen to the end of the list, so that Add Mode is displayed. Select Add Mode.
   b) On the screen that is displayed select the CLC setting type and select OK.
   c) On the screen that is displayed select the output type, generally Output or Group, and select OK.
   d) On the screen that is displayed select the sensor controlling the output, and select OK.
   e) The new Output mode appears on the new Outputs screen.
The **Outputs** screen has 3 tabs:

1. **Label:**
   Select to edit an Output’s *Label*, or descriptive name.

2. **Control:**
   Activate, deactivate or configure a selected Output. The procedures differ, depending on the CLC setting type:

   **Threshold Trigger:**
   a) Activate or deactivate a selected Output, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Output and a blue rectangle for a deactivated Output.
   
   b) Select *LOW LEVEL* or *HIGH LEVEL* to view the current Low Level Set Point or High Level Set Point, respectively. Adjust either set point by moving its slider and selecting *Set*. For High Level, first select *Interior* or *Exterior* (because exterior values need a larger range) then adjust the set point.
   
   c) Select *MODIFY* to view and/or change sensor parameters:
      1. Display of any CLC triggering preset, set in the *Preset* submenu, associated with the output.
      2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
      3. (only used if output is a dimmer) Select to change to a different CLC setting type. On the screen that appears, select *Open Loop* or *Closed Loop* then press *OK*.
      4. Select to change the high level target, which is the relay output that is turned OFF when the light level exceeds the High Level Set Point. On the screen that appears, select the new output.
      5. Select to enable Test Mode, where there is no delay time between sensor light level readings. If Test Mode is enabled, select to disable.

   **Open Loop:**
   a) Activate or deactivate a selected dimmer Output, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Output and a blue rectangle for a deactivated Output.
   
   b) Select *DIMMER* to adjust the dimmer output’s dimming level *Set Point*. When selected, the output’s current set point is displayed as %. To adjust, tap on the output id, then on the screen that appears select *SET POINT*, then move the slider to the desired dimming percentage on the screen that appears and select *Set*. You can also change dimmer *RATIO* (only in cases where there are multiple dimmer outputs controlled by the same sensor) in the same manner by selecting *RATIO*. 
2. Control (continued):
   c) Select **COMMISSION** to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Open Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.

d) Select **MODIFY** to view and/or change sensor parameters:
1. Display of any triggering CLC preset, set in the **Preset** submenu, associated with the output.
2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
3. Select to change to a different CLC setting type. On the screen that appears, select **Threshold Trigger** or **Closed Loop** then press **OK**.
4. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select **Interior** or **Exterior** (because exterior values need a larger range) then use the slider to adjust the **EL on** value and select **OK**.
5. Select to change **Day Time Set Point**, which is a value used in the commissioning process. On the screen that appears, first select **Interior** or **Exterior** then use the slider to adjust the value and select **OK**.
6. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the **EL on** value and select **OK**.
7. Select to change **Night Time Set Point**, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select **OK**.
8. Select to change the **Dim Up Time**, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select **OK**.
9. Select to change the **Dim Down Time**, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select **OK**.
2. Control (continued):

   Closed Loop:

   a) Activate or deactivate a selected dimmer Output, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active Output and a blue rectangle for a deactivated Output.

   b) Select DIMMER to adjust the dimmer output’s dimming level Set Point. When selected, the output’s current set point is displayed as %. To adjust, tap on the output id, then on the screen that appears select SET POINT, then move the slider to the desired dimming percentage on the screen that appears and select Set. You can also change dimmer RATIO (only in cases where there are multiple dimmer outputs controlled by the same sensor) in the same manner by selecting RATIO.

   c) Select COMMISSION to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Open Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.

   d) Select MODIFY to view and/or change sensor parameters:

         1. Display of any triggering CLC preset, set in the Preset submenu, associated with the output.

         2. Select to change the controlling sensor. On the screen that appears, select the new sensor.

         3. Select to change to a different CLC setting type. On the screen that appears, select Threshold Trigger or Closed Loop then press OK.

         4. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select Interior or Exterior (because exterior values need a larger range) then use the slider to adjust the EL on value and select OK.

         5. Select to change Day Time Set Point, which is a value used in the commissioning process. On the screen that appears, first select Interior or Exterior then use the slider to adjust the value and select OK.

         6. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the EL on value and select OK.

         7. Select to change Night Time Set Point, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select OK.
2. Control (continued):

8. Select to change the Dim Up Time, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

9. Select to change the Dim Down Time, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

3. Logs:
Select to display a history of a selected Output’s activity.

**Constant Lighting Controller Menus**

2. Groups

The Groups screen lists all outputs that are set to be controlled by a Constant Light Controller (CLC) local sensor. The CLC sensors can have three types of settings:

- **Threshold Trigger**: triggers a group, which should consist only of relays, ON when the measured light level passes below a value called the Low Level Set Point and triggers the output OFF when the light level passes above a value called the High Level Set Point.

- **Open Loop**: constantly adjusts the dimming levels of each group in response to the measured light level coming into the room.

- **Closed Loop**: constantly adjusts the dimming levels of each group in response to the measured light level inside the room.

The groups are listed by type of CLC setting, in order of the sensor number they are controlled by. Groups are assigned to sensors when a new Group Mode is created.

1. To create a new Group Mode:
   a) Scroll down the screen to the end of the list, so that Add Mode is displayed. Select Add Mode.
   b) On the screen that is displayed select the CLC setting type and select OK.
   c) On the screen that is displayed select the Group output type, and select OK.
   d) On the screen that is displayed select the sensor controlling the output, and select OK.
   e) The new Group mode appears on the new Groups screen.
The **Groups** screen has 3 tabs:

1. **Label:**  
   Select to edit a Group’s *Label*, or descriptive name.

2. **Control:**  
   Activate, deactivate or configure a selected Group. The procedures differ, depending on the CLC setting type:

   **Threshold Trigger:**
   - **a)** Activate or deactivate a selected Group, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Group and a blue rectangle for a deactivated Group.
   - **b)** Select *LOW LEVEL* or *HIGH LEVEL* to view the current Low Level Set Point or High Level Set Point, respectively. Adjust either set point by moving its slider and selecting *Set*. For High Level, first select *Interior* or *Exterior* (because exterior values need a larger range) then adjust the set point.
   - **c)** Select *MODIFY* to view and/or change sensor parameters:
     1. Display of any CLC triggering preset, set in the *Preset* submenu, associated with the group.
     2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
     3. (only used if group includes a dimmer.) Select to change to a different CLC setting type. On the screen that appears, select *Open Loop* or *Closed Loop* then press *OK*.
     4. Select to change the high level target, which is the group that is turned OFF when the light level exceeds the High Level Set Point. On the screen that appears, select the new group.
     5. Select to enable Test Mode, where there is no delay time between sensor light level readings. If Test Mode is enabled, select to disable.

   **Open Loop:**
   - **a)** Activate or deactivate a selected dimmer Group, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Group and a blue rectangle for a deactivated Group.
   - **b)** Select *DIMMERS*(number of dimmers) to adjust the dimmer Group’s dimming level *Set Point*. When selected, the Group’s current set point is displayed as %. To adjust, tap on the first dimmer’s id, then on the screen that appears select *SET POINT*, then move the slider to the desired dimming percentage on the screen that appears and select *Set*. Select *RATIO*, which will be the relative dimming percentage of each of the dimmers in the Group. Select *SET POINT* and *RATIO* in the same manner for the other dimmers to set the dimmer set points and allow the system to calculate and display the ratios.
2. Control (continued):
   c) Select **COMMISSION** to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Open Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.
   d) Select **MODIFY** to view and/or change sensor parameters:
      1. Display of any triggering CLC preset, set in the **Preset** submenu, associated with the group.
      2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
      3. Select to change to a different CLC setting type. On the screen then appears, select **Threshold Trigger** or **Closed Loop** then press **OK**.
      4. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select **Interior** or **Exterior** (because exterior values need a larger range) then use the slider to adjust the **EL on** value and select **OK**.
      5. Select to change **Day Time Set Point**, which is a value used in the commissioning process. On the screen that appears, first select **Interior** or **Exterior** then use the slider to adjust the value and select **OK**.
      6. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the **EL on** value and select **OK**.
      7. Select to change **Night Time Set Point**, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select **OK**.
      8. Select to change the **Dim Up Time**, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select **OK**.
      9. Select to change the **Dim Down Time**, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select **OK**.
2. Control (continued):
   Closed Loop:
   
a) Activate or deactivate a selected dimmer Group, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active Group and a blue rectangle for a deactivated Group.

b) Select DIMMERS(number of dimmers) to adjust the dimmer Group’s dimming level Set Point. When selected, the Group’s current set point is displayed as %. To adjust, tap on the first dimmer’s id, then on the screen that appears select SET POINT, then move the slider to the desired dimming percentage on the screen that appears and select Set. Select RATIO, which will be the relative dimming percentage of each of the dimmers in the Group. Select SET POINT and RATIO in the same manner for the other dimmers and the system to set the dimmer set points and allow the system to calculate and display the ratios.

c) Select COMMISSION to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Closed Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.

d) Select MODIFY to view and/or change sensor parameters:
   1. Display of any triggering CLC preset, set in the Preset submenu, associated with the group.
   2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
   3. Select to change to a different CLC setting type. On the screen then appears, select Threshold Trigger or Open Loop then press OK.
   4. Select to enable Full Auto Dimming (default OFF).
   5. Select to disable Floating Daylight Set Point (default Enabled).
   6. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select Interior or Exterior (because exterior values need a larger range) then use the slider to adjust the EL on value and select OK.
   7. Select to change Day Time Set Point, which is a value used in the commissioning process. On the screen that appears, first select Interior or Exterior then use the slider to adjust the value and select OK.
   8. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the EL on value and select OK.
2. Control (continued):

Closed Loop:

9. Select to change Night Time Set Point, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select OK.

10. Select to change the Dim Up Time, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

11. Select to change the Dim Down Time, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

3. Logs:

Select to display a history of a selected Group’s activity.

Constant Lighting Controller Menus

3. Presets

The Presets screen lists all presets that are set to be controlled by a Constant Light Controller (CLC) local sensor. The CLC sensors can have three types of settings:

Threshold Trigger: triggers a preset, which should consist only of relays, ON when the measured light level passes below a value called the Low Level Set Point and triggers the output OFF when the light level passes above a value called the High Level Set Point.

Open Loop: constantly adjusts the dimming levels of each preset in response to the measured light level coming into the room.

Closed Loop: constantly adjusts the dimming levels of each preset in response to the measured light level inside the room.

The presets are listed by type of CLC setting, in order of the sensor number they are controlled by. Presets are assigned to sensors when a new Preset Mode is created.

1. To create a new Preset Mode:

a) Scroll down the screen to the end of the list, so that Add Mode is displayed. Select Add Mode.

b) On the screen that is displayed select the CLC setting type and select OK.

c) On the screen that is displayed select the Local Preset or Global Preset (whichever is appropriate) output type, and select OK.

d) On the screen that is displayed select the sensor (by id) controlling the output.

e) The new Preset mode appears on the new Presets screen.
The **Preset**s screen has 3 tabs:

1. **Label:**
   Select to edit a Preset’s *Label*, or descriptive name.

2. **Control:**
   Activate, deactivate or configure a selected Preset. The procedures differ, depending on the CLC setting type:
   **Threshold Trigger:**
   a) Activate or deactivate a selected Preset, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Preset and a blue rectangle for a deactivated Preset.
   b) Select *LOW LEVEL* or *HIGH LEVEL* to view the current Low Level Set Point or High Level Set Point, respectively. Adjust either set point by moving its slider and selecting *Set*. For High Level, first select *Interior* or *Exterior* (because exterior values need a larger range) then adjust the set point.
   c) Select *MODIFY* to view and/or change sensor parameters:
      1. Display of any CLC triggering preset, set in the **Preset** submenu, associated with the output.
      2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
      3. (only used if group includes a dimmer.) Select to change to a different CLC setting type. On the screen that appears, select *Open Loop* or *Closed Loop* then press *OK*.
      4. Select to change the high level target, which is the preset that is turned OFF when the light level exceeds the High Level Set Point. On the screen that appears, select the new preset.
      5. Select to enable Test Mode, where there is no delay time between sensor light level readings. If Test Mode is enabled, select to disable.

   **Open Loop:**
   a) Activate or deactivate a selected dimmer Preset, by selecting *ACTIVATE* or *DEACTIVATE*. An orange rectangle will be shown for an active Preset and a blue rectangle for a deactivated Preset.
   b) Select *DIMMERS*(number of dimmers) the adjust the Preset’s dimming level *Set Point*. When selected, the Preset’s current set point is displayed as %. To adjust, tap on the first dimmer’s Id, then on the screen that appears select *SET POINT*, then move the slider to the desired dimming percentage on the screen that appears and select *Set*. Select *RATIO*, which will be the relative dimming percentage of each of the dimmers in the Group. Select *SET POINT* and *RATIO* in the same manner for the other dimmers to set the dimmer set points and allow the system to calculate and display the ratios.
2. Control (continued):
   c) Select COMMISSION to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Open Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.

d) Select MODIFY to view and/or change sensor parameters:
   1. Display of any triggering CLC preset, set in the Preset submenu, associated with the output.
   2. Select to change the controlling sensor, displayed by id. On the screen that appears, select the new sensor.
   3. Select to change to a different CLC setting type. On the screen that appears, select Threshold Trigger or Closed Loop then press OK.
   4. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select Interior or Exterior (because exterior values need a larger range) then use the slider to adjust the EL on value and select OK.
   5. Select to change Day Time Set Point, which is a value used in the commissioning process. On the screen that appears, first select Interior or Exterior, then use the slider to adjust the value and select OK.
   6. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the EL on value and select OK.
   7. Select to change Night Time Set Point, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select OK.
   8. Select to change the Dim Up Time, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.
   9. Select to change the Dim Down Time, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.
2. Control (continued):
   Closed Loop:
   
a) Activate or deactivate a selected Preset, by selecting ACTIVATE or DEACTIVATE. An orange rectangle will be shown for an active Preset and a blue rectangle for a deactivated Preset.

b) Select DIMMERS (number of dimmers) the adjust the Preset’s dimming level Set Point. When selected, the Preset’s current set point is displayed as %. To adjust, tap on the first dimmer’s Id, then on the screen that appears select SET POINT, then move the slider to the desired dimming percentage on the screen that appears and select Set. Select RATIO, which will be the relative dimming percentage of each of the dimmers in the Group. Select SET POINT and RATIO in the same manner for the other dimmers and the system to set the dimmer’ set points and allow the system to calculate and display the ratios.

c) Select COMMISSION to initiate the Commissioning process, in which the system tests the full dimming spectrum and sets up the Closed Loop CLC. Commissioning is a multi-step process, usually done at initial install, and must be done correctly or the CLC mode will not function correctly. If initiating a Commission, please refer to the Douglas Lighting Controls documentation that describes the commissioning procedure.

d) Select MODIFY to view and/or change sensor parameters:
   1. Display of any triggering CLC preset, set in the Preset submenu, associated with the preset.
   2. Select to change the controlling sensor. On the screen that appears, select the new sensor.
   3. Select to change to a different CLC setting type. On the screen that appears, select Threshold Trigger or Open Loop then press OK.
   4. Select to enable Full Auto Dimming (default OFF).
   5. Select to disable Floating Daylight Set Point (default Enabled).
   6. Select to change the Electric Lights ON value, which is the brightest stable light level value in the area controlled by the CLC. On the screen that appears, first select Interior or Exterior (because exterior values need a larger range) then use the slider to adjust the EL on value and select OK.
   7. Select to change Day Time Set Point, which is a value used in the commissioning process. On the screen that appears, first select Interior or Exterior then use the slider to adjust the value and select OK.
   8. Select to change the Electric Lights OFF value, which is the dimmest stable light level value in the area controlled by the CLC. On the screen that appears, use the slider to adjust the EL on value and select OK.
2. Control (continued):
   Closed Loop:

9. Select to change Night Time Set Point, which is a value used in the commissioning process. On the screen that appears, use the slider to adjust the value and select OK.

10. Select to change the Dim Up Time, which is the maximum time required for the dimmer to go from a lower to a higher dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

11. Select to change the Dim Down Time, which is the maximum time required for the dimmer to go from a higher to a lower dimming percentage when the ambient brightness changes. On the screen that appears, use the slider to adjust the value and select OK.

3. Logs:
   Select to display a history of a selected Preset’s activity.
Schedules Menu

The Schedules screen has two submenus:
1. Schedules>All schedules (activate by selecting All schedules)
2. Schedules>Grouping (activate by selecting Grouping)

To create a new Schedule:
- a) Select Add Schedule.
- b) On the screen that appears, select the time target group or preset is to go ON or OFF and select OK.
- c) On the next screen that appears, select the days of the week and select OK.
- d) On the next screen that appears, specify target type, group or preset, and select OK.
- e) On the next screen that appears, specify if the target is turned ON or OFF, or ACTIVATE or DEACTIVATE for a preset, and select OK.
- f) On the next screen that appears, select the group(s) or presets and select the Back button.
- g) The Schedules>All schedules screen returns with the new Schedule displayed and selected.

The Schedules>All schedules screen has 4 tabs:

1. Label:
   Select to edit a selected Schedule’s Label, or descriptive name.

2. Control:
   Change targets, Disable, or set starting and ending dates for a selected Schedule:
   - a) To change the target groups or presets scheduled, select one of targets displayed. On the screen that appears, select a new group or preset, or unselect a group or preset, by marking or unmarking their check box. When the desired groups or presets have been selected, select the Back button.
   - b) To enable or disable the Schedule, toggle the Enabled/Disabled key.
2. Control (continued):
   
   c) To select a date when the Schedule will start, select *Start Always*. On the screen that appears, select the month and year, with the arrows, and the day, by selecting its box. To select a date when the schedule will terminate, select *Never Stop*, then select the month, year and day in the same manner on the screen that appears.

3. Logs:
   Select to display a history of a selected Schedule’s activity.

4. Setup:
   Select to edit (re-configure) a selected Schedule.

   a) To delete the Schedule, select *Delete Schedule*, then select *Yes* in the Confirmation screen that appears.

   b) To view or change the Schedule’s parameters, select *Properties*. A screen appears, displaying the Schedule’s Parameters:

   - **Start Date**: Date the Schedule starts, default *Start Always*. Select to change in same manner as described in *Control c*).
   
   - **Stop Date**: Date the Schedule terminates, default *Start Always*. Select to change in same manner as described in *Control c*).
   
   - **Days of Week**: Which days the scheduled operation occurs. Select to add or remove days from Schedule in the screen that appears.

   - **Event Time**: What time-of-day the scheduled operation occurs. Select to change the time in the screen that appears.

   - **Event Target**: Which group(s) or preset(s) are scheduled to turn OFF or ON. Select to add or remove groups or presets from the list that appears.

   - **Event Action**: Whether targets turn ON or OFF when scheduled. Select to change in the screen that appears.

The *Schedules>Grouping screen* lists the Schedules according to their associated Groupings. *Grouping* means related to the same area or function with the default Grouping being Global, or the entire area served by the LCU. When a new Schedule is created, it is assigned to the default Grouping, Global. In the sample screen shown, there are three Groupings: Global, bathroom area and hallway area. In this screen you can create a new Grouping and assign Schedules to different Groupings.
1. To create a new Grouping:
   a) Select Change Grouping for any Schedule.
   b) On the screen that appears, select Add Grouping.
   c) On the next screen enter the Grouping name, or Label. Try to make it descriptive. When the name is entered, select OK.

1. To change a Schedule’s Grouping:
   a) Select Change Grouping for the Schedule.
   b) A screen that appears, displaying the Schedule’s current Grouping (default Global) and the other Grouping selections. Select the new Grouping by selecting its Select button.
**Settings Menu**

The **Settings** screen has ten submenus, each activated by tapping anywhere on it:

1. **Settings> About DIALOG®**
2. **Settings> Global Web Server**
3. **Settings> DIALOG® Discovery**
4. **Settings> System Diagnostics**
5. **Settings> Event Log Functions**
6. **Settings> Mode Settings**
7. **Settings> System Settings**
8. **Settings> Login Settings**
9. **Settings> Config Management**
10. **Settings> Exit Application**

1. **Settings> About DIALOG®**

The **Settings> About DIALOG®** screen is a read-only screen that provides information about this version of the DIALOG® software including version number, driver version, serial number for this LCU as well as system startup information.

Select OK to close this submenu.

2. **Settings> Global Web Server**

The **Settings> Global Web Server** screen allows the user to change the global web server settings. This is a Tech-only function.

3. **Settings> DIALOG® Discovery**

The **Settings> DIALOG® Discovery** screen allows the user to direct the LCU to do a ‘Discovery’ which is a check of the system to locate and list all input and output devices that are connected on the network. The LCU will automatically perform a discovery of all connected devices upon initial power up. If any additional devices are installed since the initial startup, this submenu is used to discover them.

a. You can specify a Discovery of certain types of devices, or a full system Discovery by tapping on the submenu area. A new screen appears advising you when the Discovery is occurring and when it is completed. After the Discovery is done, select OK to return to the **DIALOG® Discovery** submenu.
4. Settings>System Diagnostics

The Settings>About DIALOG® screen has two read-only screens, each accessed by tapping on their title, that provide information on system memory consumption on space currently used by the system files. The information displayed is Tech-only.

5. Settings>Event Log Functions

The Settings>Event Log Functions screen allows the user to configure, save or clear logs. These are Tech-only functions.

6. Settings>Mode Settings

The Settings>DIALOG® Discovery screen allows the user to configure, or reconfigure, various Modes.

a. You must configure the Astro Mode, which allows the LCU to calculate daily sunrise and sunset times based on date and location, by entering information in this submenu. Enter your location’s Longitude, by selecting the displayed value, then entering the value for your location on the screen that appears using the arrows or slider and selecting OK. Enter the Dawn Offset or Dusk Offset times (default 0) by selecting the displayed value, then selecting the time on the screen that appears and selecting OK. A negative offset (shorter lighting period) causes a mode to be activated by that amount of time before dusk and deactivated by that amount of time before dawn. A positive offset (longer lighting period) causes a mode to be activated by that amount of time after dusk and deactivation by that amount of time after dawn.

b. You can change various CLC dimming settings by selecting CLC functions and changing them from the displayed settings. Refresh Rate (default every 5 seconds) is the frequency which photo sensors sample the ambient light level. Dim Up Time (default 1 second) is the time for dimmers to go from minimum dimming to maximum. Dim Down Time (default 5 seconds) is the time for dimmers to go from maximum dimming to minimum. Default down time is longer because it takes time for the human eye longer to absorb new light. To change a value, select the displayed value, then set the new value with the slider on the screen that appears.
c. You can set the time duration for *Quiet Mode* for an input, group or preset where *Quiet Mode* is a temporary bypass of the occupancy sensors for a specific amount of time. *Quiet Mode* is used to avoid outputs switching OFF where there is minimal or no activity in a room, but the room is still occupied. To change the quit time duration, select the displayed value, then enter on the screen that appears and select **OK**.

d. You can change various *Timeout Mode* settings by selecting *Timeout Mode* and changing them from the displayed values. *Timeout Mode*, when initiated, causes an output or preset to perform a function after a specified time duration passes. In this submenu you can change the *Timeout Countdown* (the time duration) after Timeout initiation as well and enable and specify the duration of Flick Warn (where lights flick ON and OFF to warn occupants an OFF action will happen) by selecting the displayed value and changing the value on the screen that appears and selecting **OK**.

e. You can change enable Flick Warn or change the Off Wait Duration (the time lapse from the Flick Warn to the Timeout OFF action by selecting *Flick Mode* and changing them from the displayed values on the screen that will be displayed and selecting **OK**.

7. **Settings>System Settings**

The **Settings>System Settings** screen allow the user to set various system parameters like descriptive name, screen and IP settings date and time:

a. You can specify a descriptive name for the LCU network by selecting *Project Name* and entering the name in the screen that appears.

b. You can have the system recalibrate the screen by selecting *Screen Calibration*.

c. You can view and change network settings including IP Address, Subnet Mask and Gateway by selecting *Network Settings*, then entering the new values on the screen that appears and selecting **OK**.

d. You can set the system to the current date by selecting *Set Date*, then specifying the date on the screen that appears and selecting **OK**.

e. You can set the system to the current time-of-day by selecting *Set Time*, then entering the date on the screen that appears and selecting **OK**.
8. Settings> Login Settings

The Settings> Login Settings screen has three screens, each accessed by tapping on their title, that provide information on system memory consumption on space currently used by the system files. The information displayed is Tech-only.

   a. You can change your password by selecting Change Password, then entering your password on the screen that appears and selecting OK, then confirm it on the next screen that appears and select OK.

   b. You can reset your password by selecting Reset Password, then enter your password on the screen that appears and select Yes.

   c. You can enter a password used for contacting tech support by selecting Tech Login, then entering the password on the screen that appears and selecting OK.

9. Settings> Configuration Management

The Settings> Configuration Management screen has eight screens, each accessed by tapping on their title, that provide information on system memory consumption on space currently used by the system files.

   a. You can disable auto save by pressing on this screen Disable AUTO-SAVE. When auto save is disabled, this screen is displayed as Enable AUTO-SAVE, and you can then enable auto save by pressing on it.

   b. You can delete redundant or empty output, group or preset files from the system by selecting Trim Configuration. You can:
      - remove undiscovered outputs
      - remove outputs not configured to a panel
      - remove groups without members
      - remove groups not configured to a header
      - removed unused presets
      To remove outputs, groups or presets, press on the appropriate screen area and select Yes on the confirmation screen that appears.

   c. You can reset the entire system configuration to Default by pressing on Factory Default Configuration, then selecting Yes on the confirmation screen that appears.

   d. You can copy configuration files from a detected USB device to the system by pressing on Push Configuration, then selecting Yes on the confirmation screen that appears.

   e. You can schedule files from a detected USB device to the system by pressing on Push Schedules, then selecting Yes on the confirmation screen that appears.
f. You can copy configuration and schedule files from the system to a detected USB device by pressing on *Pull Configuration and Schedules*, then selecting *Yes* on the confirmation screen that appears.

g. You can save all system configuration files by pressing on *Save Full System Configuration*. When saved, a confirmation screen will appear and this screen will change to display the time.

h. You can save all system schedule files by pressing on *Save Schedules Only*. When saved, a confirmation screen will appear and this screen will change to display the time.

10. **Settings>Exit Application**

The **Settings>Exit Application** screen lets you exit the Dialog application if you are working on a computer-based system. This screen does not apply to a touchscreen system.
Event Logs Menu

The Event Logs screen is a read-only screen that lists and displays the last 100 system events and actions in chronological order starting with the most recent. You can refresh the list by selecting the refresh List icon to view any events that occurred since the screen was initially displayed.
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