ADVANCED LIGHTING TIMER BY DOMOSAPIENS

This driver enables you to efficiently manage lighting and associated timings and triggering contacts such as motion sensors and door contacts. There is no longer a need to define timers and create elaborate programming for such lights. A twin driver is also provided with an Experience Button to control the Function.

OVERALL DESCRIPTION AND CAPABILITIES

The use of this driver can be quite simple or become very complex depending on the desired scenario. It is recommended that you read this document completely to have a better feel for what is possible.

In its simplest form, the driver allows you to:

1. Select one of the available **EASY CONFIG** options. This automatically sets some Customization properties as required.

2. Select the Function **duration** in seconds or minutes. This determines how long the lights will stay on.

3. Select the **light or set of lights** to be controlled.

4. Specify the **level** the light will be turned on to (Light On Level) when the driver is triggered.

5. **Connect** a triggering contact such as a Motion sensor or Door contact.

Typically install one instance of this driver for each light or set of lights to be controlled by one or more triggers. For example, a trigger could be a motion sensor controlling three lights in a hallway. Or a trigger could be a door contact controlling a closet light. Or you may have a much more elaborate setup with several interacting triggers of different types controlling a set of lights or Advanced Lighting Scenes.

Each instance of this driver implements a Function (or “Main Timer”) which can have one of four states:

1. **Inactive and Enabled**, waiting for a trigger: controlled lights are usually turned off in this state.

2. **Active**, having been triggered (started): in this state, controlled lights are turned on (except if the Light On Level specifies 0% at the current time).

3. Active but **On Hold**: controlled lights will remain on until the Function is specifically ended by programming or keypad or by manually turning all its controlled lights off. The triggering contacts have no effect in this state.

4. Inactive but **Disabled**: the Function will not start if triggered until it is enabled again. Several ways to disable/enable a Function are available.

A Function is usually started by one of eight Input Contacts and ends when the contact is reversed or when the specified timer Duration expires. Programming as well as a Keypad button may also start and end the Function by simulating any Input Contact.

When the Function is started (Active), it can turn on a light or group of lights at different levels based on time of day and/or activate Advanced Lighting Scenes. This is reversed when the Function ends.

The driver has a set of **EASY CONFIG** options to simplify setup for popular scenarios. In addition, the driver provides a sophisticated set of customization options (via Properties) to adapt the behavior of the Function to various situations and requirements. Many of these EASY CONFIG options and customization options have been added to accommodate specific requirements from dealers.

Guest Mode puts the driver into a 'safer' mode where lights will not turn off at the end of the normal delay and where Function Control Buttons are optionally disabled while the Guest Mode is active. An alternative to Guest mode is to use a programming command to simply disable/enable all instances of the driver.

The **EASY Function Control** button connection may be used to give the user flexible control of the Function using a keypad button. The timer may even be defeated so the keypad button becomes a sophisticated On/Off switch for Advanced Light management.

The driver has the ability to interact with other instances of itself in the project. This can be used to elaborate complex scenarios.

INSTALLATION

1. Use the free trial period or **activate the driver** at any time by assigning to this project the license you purchased from the driverCentral website (requires the driverCentral cloud driver). You may use multiple copies of this driver in your project. The regular driver and its twin with Experience Button may both be used in the same project and with the same license. Except for the Experience Button, both drivers offer the same functionality.

2. Make the required **contact connections** (up to 15), likely with contact output(s) of a Home Controller or an IO Extender, or zone output(s) of a security system driver. Sensor interaction is defined in a Property. You may also connect keypad buttons to simulate contact activation.

3. Try using **EASY CONFIG** and to select one of the pre-defined configurations. The important properties will be set up automatically. You may further customize other Properties once initially set by EASY CONFIG. Turn Debug On to see how Customization Properties are set by each pre-defined configuration.

4. Specify the **Function Duration(s)**. A single duration may be specified, or a different duration may be specified for each input contact used.

5. Optionally select one or more **Controlled Lights** to be turned On when the Function starts and Off when the Function ends. To activate an Advanced Lighting Scene when the Function starts, you may use **EASY SCENES** (see the Advanced Lighting Scene Selection property and specify appropriate scenes) or the legacy connections (connect the two supplied Default BUTTON_LINKs to the scene's TOP and BOTTOM connectors). These are subject to the Light Action property as well as the

disabling capability described below. The default Advanced Lighting Scene will be activated only when the light level is to be non-zero at the time the Function starts.

6. Optionally select a Security System or Partition. This will cause two new properties to appear. Use the **Light On Level When Armed** and **Light On Level When Armed AWAY Specifically** properties in a way similar to the "Light On Level" Property. The driver will select the right set of levels depending on the status of the Security System when the Function starts.

7. Specify **Light On Level** either as a single value (e.g., 95%) or use the advanced specification as described below under ADVANCED 'LIGHT ON LEVEL' SPECIFICATION. If a security system is selected, you may specify different Light On Levels/conditions depending on Armed status. Two optional **Alternate Light On Level** specifications (Alternate and Second Alternate) may be also be entered and activated via programming either indefinitely (until set back to **Light On Level** via programming) or until midnight only (the driver automatically reverts back to **Light On Level** on the next day). This may be used to alternate between two states, such as Home and Away, for example, when the project does not have a security system. Another example is to have **Alternate Light On Level** turn the light(s) on at a higher (or lower) intensity when visually challenged visitors are in the house. Party mode (higher levels) or week-end scenarios (vs weekdays) would be other examples. You may easily use the Control4 scheduler to activate and deactivate **Alternate Light On Level**. A contact is also provided as an optional way to activate and deactivate **Alternate Light On Level**. The **Second Alternate Light On Level** may be used for additional flexibility, as client needs may be very diverse and complex.

8. Customize further, if desired, by using the **Customization Properties** (see below).

9. Optionally connect a disabling/enabling contact and select the appropriate property value. Disabling the Function prevents it from executing and may also be performed by an Action, by Programming or by Disabling Lights and TVs.

10. Optionally, also install and connect legacy Control4 Sensor drivers (Motion Sensor, Door Contact Sensor, etc.) in parallel with this Advanced Lighting Timer driver. This will allow Navigator feedback of the sensor states and is entirely optional.

11. Use the **Actions** 'Print Simulation Report' and 'Start Function Now' to validate your input, if desired. An **EASY CONFIG** option allows you to 'Reset all Properties to Default values'.

The following contain an overview for Customization Properties (refer to **TIPS FOR CUSTOMIZATION PROPERTIES** below) for a full list:

- The Customization Properties are divided into broad categories:
    - Input and Output Contacts allow you to specify the normal and active states of each contact used.
    - Function and Light Management allow you to fine tune how the Function will behave under various conditions.
    - Disabling the Function allows you to specify which external items can cause the Function to be disabled.
    - Keypad Button Colors allow you to specify the LED colors when keypad buttons are used to simulate a contact or to control the Function itself (override).

- Optionally select to avoid starting the Function if no light action would be performed (for example, during a time where you have specified 0% for Light On Level). Otherwise, the Function will start anyway, the light would not be turned on, but the other facilities would be available.

- Optionally select to End the Function upon contact reversal and/or delay expiry. This is useful for door contacts where the light needs to turn Off when the door is closed but also after a timeout when the door is left open.

- Optionally select other lights and/or TVs (Disabling Lights and TVs) which, when turned On, will temporarily disable the Function and prevent it from executing.

- If you are using the twin driver with Experience Button, make it visible in rooms, as appropriate. It may also be favorited. The Experience Button offers the same functionality as the 'EASY Function Control' button link. Remember to refresh Navigators.

PROPERTIES

- **Cloud Status** displays the status of the DriverCentral Cloud driver.

- **Automatic Updates** turns the DriverCentral automatic update facility On or Off.

- **Driver Version** displays the version of this driver.

- **Debug Mode** turns Debug Mode Off or On (with output to the Lua Output window).

- **Debug Duration in Minutes** sets the duration of Debug On.

- **Driver Information** displays various status messages about the driver.

Main Properties:

- **EASY CONFIG:** allows you to easily select major operating modes for this driver. Using this is optional, but it simplifies the selection of many other properties below. Once an EASY CONFIG is selected, you may fine tune all the other properties as desired.

- **Function Duration(s):** specifies the default duration for the Function, when it is activated. A specific duration may optionally be specified for each input contact, separated by commas. The duration(s) may be specified in minutes (5m) or in seconds (60s), the latter being the default.

- **Controlled Lights**: specifies which light(s) will be turned On and Off by the Function. This is in addition to any Advanced Lighting Scene connected to the Default connection. Lighting Scenes connected to one of the other A-E connections will be turned On and Off if specified in the Light On Level properties.

- **Security System or Partition**: specifies if a security system is to be considered when the Function is activated. This allows you to specify different Light On Levels if the system is Armed (Stay or Away).

- **Light On Level:** specifies the level the Controlled Lights will be set to when the Function is activated. In its simplest form, this could be single number (95 or 95% - the % is optional and

ignored). A much more elaborate specification is also available (see the 'Advanced Light On Level Specification' section below). The Light On Level is the default specification used.

- **Alternate Light On Level:** specifies an alternate ser of level(s) to be used instead of the regular Light On Level. This selection can be enabled by the 'Activate Light On Level' programming command or via the Alternate Light On Level contact.

- **Second Alternate Light On Level:** specifies a second alternate set of level(s) to be used instead of the regular Light On Level. This selection can only be enabled by the 'Activate Light On Level' programming command.

- **Light On Level When Armed**: specifies the level(s) to be used instead of the regular Light On Level when the selected Security System or Partition is armed (Stay or Away).

- **Light On Level When Armed AWAY Specifically**: specifies the level(s) to be used instead of the regular Light On Level when the selected Security System or Partition is armed Away specifically. Otherwise, the Light On Level When Armed specification will be used.

Input and Output Contacts:

- **Number of Input Contacts/Zones:** Allows you to request additional input contacts (10 or 15 in total) if required. Otherwise, leave at Five as this reduces the number of bindings in Connections. Updating a previous version of this driver will leave the number of contacts at fifteen. This may then be changed if extra contacts are not used.

- **Contact Is**: Motion sensor contacts are typically Normally Closed as are zone contacts from a security system. All input contacts used must have the same characteristic except when 'Custom' is selected.

- **Contact 1 Is** to **Contact 15 Is**: Motion sensor contacts are typically Normally Closed as are zone contacts from a security system. Triggered forces 'Full Duration after Contact is Reversed' for the End Function property. Contacts will appear only when connected under Connections.

- **Output Contact Is**: Motion sensor contacts are typically Normally Closed as are zone contacts from a security system. May be used to trigger or disable another instance of this driver.

- **Debounce Timer**: In milliseconds. Set to 0 to disable. The maximum is 10000 milliseconds. When set to more than 1000 milliseconds (1 second), this triggers a special Blackout mode where the driver will wait for the specified interval before starting the Function. If, at the end of the Blackout interval the triggering contact is still active (motion is still sensed), then the Function will start normally. If the triggering contact is not active (motion is no longer sensed), then the Function is not started. This may be useful in some situations where people are triggering a light to come on just by passing by. This may not work in all situations, especially when the physical motion sensor stays on for a longer period of time, but do experiment.

- **Input Contact Interaction**: Used when two or more input contacts are active at the same time. The default (OR) is usually appropriate.

- **Triggering Peer Functions**: Select one or more instances of this driver which, when their Function is Active, will trigger this Function. If selected, the current instance will be ignored. **Be especially careful about circular references**.

Function and Light Management:

- **Start Function**: This is useful to prevent a long-duration night time Function from starting at all during the day and maybe missing sunset, for example.

- **End Function**: Use 'When Delay Expires or when Contact is Reversed' to have a light turn off after the delay even when the contact is still active (closet light, for example, even when the closet door is left open). Use '+ Warning and Extension Period' to issue up to 3 flashes (use 0 if no flashes are desired) followed by an extension period before the Function ends and the lights actually turn off. See the 'Warning and Extension Period' property below.

- **Warning and Extension Period**: This property is available based on the setting of the 'End Function' property. Specify the number of lighting flashes followed by the extension period. There may be 0 to 3 flashes, but this defaults to 1 flash if omitted. The extension period (600 seconds maximum) may be specified in seconds or in minutes (if followed by M or m). Examples: *2,5m* (2 flashes followed by a 5-minute extension of the Function), *300* (1 flash, which is the default, followed by a 300-second extension), *0,60* (no flash, but a simple 60-second extension of the Function).

- **Light Action**: Normally set to 'Turn On and turn Off when the Function ends' since this is often the desired behavior when the Function is activated. To override the driver for dimmable lights, set 'Light On Level' to a value other than 100 (such as 95, for example) and this property to 'No action when light is On at a different level'. This way, a user may turn a light On manually (at 100%) and the driver will not turn it off unexpectedly. This property setting is also used for Advanced Lighting Scenes and non-dimming lights. To override the driver for switches (non-dimmable lights), you may quickly turn the switch off and back on while the Function is active. This will prevent the switch from turning Off when the Function ends. **IMPORTANT**: for this to work, the Property 'When Lights Turned Off Manually' must not be set to 'End the Function immediately'. *****NEW***** Specifying Dynamic Levels will allow the driver to change the light level according to the appropriate Light On Level if a trigger is activated (a Contact, for example) while the Function is currently active or when the Function is extended because its trigger is still active.

- **Light Interaction**: Collectively will prevent all lights and ALS from turning on or off when any light or ALS is already On (at a different level for dimmers).

- **When Lights Turned On Manually**: Use this property to start the Function when one or more of the controlled lights is/are turned On manually or a specified/connected Advanced Lighting Scene is manually activated.

- **When Lights Turned Off Manually**: Use this property to force the state of the Function when one or more of the controlled lights is/are turned Off manually or a specified/connected Advanced Lighting Scene is manually deactivated. The lights not turned Off manually will be turned Off when the Function ends. Other delays may be set through Programming.

- **Light Ramp Rate**: Specify the ramp rate in seconds or 0 for instant. *****NEW***** You may specify one or two rates, separated by a comma. If only one value is specified, it applies to both On and Off ramps. Otherwise, you may specify two different values for On ramping and Off ramping (such as

5,20 meaning a 5 second On ramp and a 20 second Off ramp). This may be overridden in Programming by setting the variable 'LightRampRate' (from 0 to 10 seconds - see **MANAGING LIGHTS BEHAVIOUR**).

- **Ambient Light Monitoring**: allows connection to the Domosapiens 'Ambient Light Monitor' driver, also available on DriverCentral. Together with an enhanced Light On Level specification (see the 'Advanced Light On Level Specification' section below) the use of the Ambient Light Monitor driver may allow you to select different Light On Levels based on the light level in the room, as measured by a Control4 Configurable Keypad or Keypad Dimmer. The ambient light level, if used, is only considered when the Function is activated (in other words, the light On level will not be changed while the Function is active if the ambient light level in the room changes). *****NEW***** The current ambient light level may also be set using a programming command as High, Medium or Low for use in the Light On Level specifications.

- **EASY Function Control Button**: allows you to specify the sequence of actions when the Enhanced Function Control Button is pressed by the user. A 'Press and Hold' action will always End the Function immediately. See **BUTTON LINKS FOR FUNCTION CONTROL** below.

Disabling the Function:

- **Disabling Contact Is**: This is optional. The Function may be disabled/enabled by Actions, by the Override Button (when connected), by Programming, by a Peer driver (when selected), by the Disabling Contact (when connected) or by Disabling Lights and TVs (when specified), with precedence in that order (high to low). The Function may not be re-enabled by a lower precedence request (e.g., when disabled by Action, it may only be re-enabled by Action; when disabled by Contact, it may only be re-enabled by Action or Contact). Disabling an Active Function may be delayed until it ends normally ("Soft Disable"). Enabling a Function may also start it ("Enable and Start").

- **Disabling Lights and TVs**: Select one or more lights and/or TVs which, when On, will prevent the Function from executing or from turning Controlled Lights Off when ending. This may be useful to prevent motion sensors from activating or deactivating lights in a room where specific lights and/or TVs are already On or are turned On while the Function is active. Avoid using the same lights as Controlled and Disabling.

- **Disabling Peer Functions**: Select one or more instances of this driver which, when their Function is Active, will prevent this Function from starting. If selected, the current instance will be ignored. **Be especially careful about circular references**.

- **Disabling Effect of Lights, TVs and Peers**: select whether these conditions will disable the Function immediately or only after it ends (if currently running) and in the case of disabling Lights and TVs, how the Function will be re-enabled when the disabling condition disappears (all disabling Lights and TVs are turned Off): immediately or after an exit delay as specified in the property 'When Lights Turned Off Manually'. When a disabling Peer Function becomes inactive, the current Function is always re-enabled immediately. If one or more Contacts are active when the Function is enabled, the Function is automatically started.

Keypad Button Colors:

- **Color Selection**: allows you to select between EASY COLORS (10 different pre-selected colors are available) or Custom Colors (the whole color gamut is available).

- **Function Active**: Keypad button color used when Function is Active.

- **Function Disabled**: Keypad button color used when Function is Disabled.

- **Function Inactive**: Keypad button color used when Function is Inactive.

- **Function On Hold**: Keypad button color used when Function is Active but On Hold.

- **In Override/Function Overridden**: Keypad button color used when in Override mode (Override button pressed).

Advanced Lighting Scenes:

- **Advanced Lighting Scene Selection**: allows you to select between **EASY SCENES** (5 or 10 in total) or legacy connection for Scenes. Control4 now recommends using this new more efficient process to select and manage Advanced Lighting Scenes instead of the legacy connections to TOP and BOTTOM ALS buttons (which still work). Using **EASY SCENES** also reduces the number of bindings in Connections. **IMPORTANT**: if you make changes to the Advanced Lighting Agent, remember to run this driver's Action to 'Refresh Advanced Lighting Scenes'. This ensures the drop-down list to select scenes is up to date.

- **Select Advanced Lighting Scene X**: Selects the Advanced Lighting Scene to be associated with the appropriate letter. **IMPORTANT**: only Scenes with a Toggle Scene (specific or Default) will be listed.

- **Selected Advanced Lighting Scene X**: This is an informational property showing which Scene is currently associated with the appropriate letter.

ADVANCED 'LIGHT ON LEVEL' SPECIFICATION

Note: this also applies to the *Alternate Light On Levels*, the *Light On Level When Armed* and *Light On Level When Armed AWAY Specifically* properties.

This property can contain a single Light On Level, such as 100%, valid for the entire day. Alternatively, it may contain up to 10 time-based levels, including based on Daytime ('D') and Nighttime ('N') with up to 60-minute optional offsets. Finally, the level specification may further be expanded to include Ambient Light levels.

- The basic format for each entry is 'xx%' or 'hhmm=xx%' or 'D=xx%' or 'N=xx%' (see examples below). In addition, 'D' and 'N' can have an offset (+ or -) of up to 60 minutes, such as 'D+30=75%' or 'N-60=100%'. Separate the entries with commas.

- Although many formats are possible, an **easy way** to view this is as a full day's schedule starting at 0:00 hours, with the level changing at the next specified times. For example: "**0=50%, D=0%, N-30=100%, 2300=50%**" would cause the level to start at 50% at midnight, be 0% during the day after sunrise and until 30 minutes before sunset where the level would be 100% and then at 50% starting

at 11pm (this driver uses a 24h time representation) until midnight and so on. Use the Action 'Print Simulation Report' to verify how your selection would actually behave.

- The level% is meaningful only for Controlled Lights and the Default Advanced Lighting Scene (it must be non-zero for the scene to activate). The default level is 0% which is equivalent to 'Do nothing'.

- In addition, depending on the Advanced Lighting Scene Selection property, each entry may be followed by up to 5 or 10 Advanced Lighting Scenes labeled 'A' through 'E' or 'A' though 'J', such as '95%A' or 'D=0%AC' or '1900=D'.

- Each entry may also have a duration override specified as '/xxM' or '/xxS'. For example, 'D=95%,N=50%/5M' (during daytime, the normal duration will be used, but during nighttime, the duration will be 5 minutes).

- Each entry may also have a specific level for High Ambient Light (the room is Bright), Medium Ambient Light or Low Ambient Light (the room is Dark). This applies when a Domosapiens Ambient Light Monitor driver is installed and selected using the Ambient Light Monitoring property, or when a programming command is used to specify the current ambient light level. The format is U:nn%;H:aa%;M:bb%;L:cc%. The letter U is optional and designates the Undefined or Unknown Ambient Light Level. Any omitted H, M or L level defaults to the U level. Here is the same example as above with Ambient added during Nighttime until 11pm (underlined): "**0=50%, D=0%, N-30=U100%;H:100%;M:75%;L:50%, 2300=50%**". The following would be equivalent and acceptable: "**0=50, D=0, N-30=100;M:75;L:50, 2300=50**" (U is assumed for 100, H is defaulted to the U value and % is optional). Note the use of semicolons to separate the Ambient specifications for a given entry.

- When 'D' and/or 'N' are used, they cover the entire time between sunrise and sunset or sunset and sunrise respectively, except as modified with 'hhmm=xx%' entries.

- Examples (note that spaces and % signs are optional and are ignored):

    - **95%** (valid at all hours)

    - **0=0%, 0800=100%, 1700=50%** (0% until 8am, 100% from 8am to 5pm, 50% until midnight)

    - **0800=100%, 1700=50%** (same as above, the 0% entry may be omitted as it is the default)

    - **D=0%, N=95%, 2300=50%** (0% during the day, 95% after sunset and 50% after 11pm until sunrise the next morning)

    - "**0=50, D=0, N-30=100;M:75;L:50, 2300=50**" (0% during the day and 100% between 30 minutes before sunset and 11pm where it is 50% until sunrise). In the evening, if the Ambient light level is known and is in the Medium range, then the Light On Level will be 75% or 50% if the Ambient light level is in the Low range.

    - **D-30=100%, D+30=0%** (On at 100% only between 30 minutes before sunrise and 30 minutes after, 0% at all other times)

- **D=100%, N-30=70%** (On at 100% during the day, except at 70% starting 30 minutes before sunset until sunrine, the next day)

- **D=100%, N-30=70%/60S** (On at 100% during the day, except at 70% with a special duration of 60 seconds starting 30 minutes before sunset until sunrise, the next day)

- **D=0%, N=100%, 2300=70%, 0000=50%** (On at 100% starting at sunset, then at 70% starting at 11pm, then at 50% starting at 12:00am until sunrise).

- **D=A, N=B, 2300=C** (use ALS 'A' starting at sunrise, then ALS 'B' starting at sunset, and ALS 'C' starting at 11pm until sunrise).

MANAGING LIGHTS BEHAVIOUR

Normally, lights and/or the specified/connected Advanced Lighting Scenes will follow the Function state. In some cases, you may not want the lights to turn Off, for example, at the end of the delay. This concept is especially useful in the case of motion sensors. You may have a room where the light is to be turned on by a motion sensor. It will normally be turned off after a delay and when the motion sensor stops sensing motion. You may want, however, to prevent this behavior when the light is previously already on, or when the user does not wish the light to turn off.

This can be accomplished by using the 'Light Action' property as follows:

- With dimming lights (not an Advanced Lighting Scene), you may set the 'Light Action' property to 'No action when light is On at a different level' and setting the 'Light On Level' property to a value other than 100% (use 95%, for example). When the lights are turned on manually, they will likely be at 100%. The driver will notice this and will not turn them off at the end of the delay, when the Function ends. Similarly, when the user wishes the lights to stay on, he/she simply has to set them up or down to a level other than the selected level (95% in our example).

- With non-dimming lights or an Advanced Lighting Scene, when the 'Light Action' property is set to 'No action when light is On at a different level', the driver will notice when the lights are already On or the scene is already Active when the Function starts and thus will not turn the lights off or deactivate the scene at the end of the delay, when the Function ends.

- You would normally connect the driver's TOP and BOTTOM connections to a main Advanced Lighting Scene's Top and Bottom connections (**not its Toggle connection nor any of its Toggle Scene connections**).

- The Default Advanced Lighting Scene, when specified/connected, is activated/deactivated when the light level would be non-zero. It is skipped otherwise. Advanced Lighting Scenes 'A' to 'E' are activated/deactivated regardless of the light level.

- If you set the ‘Light Action’ property to ‘Turn On only when Off but turn Off when the Function is deactivated’, the controlled lights will behave as per the setting. The Advanced Lighting Scenes will behave a bit differently: the in-scope ALS will be turned on only when ALL in-scope Advanced Lighting Scenes are Off when the Function is triggered. This allows you to have the Function control several ALS, but to turn them On only when all are Off. Otherwise, when some are already On, the group will be left alone (but will be turned Off at the end of the delay).

Note that the driver processes and operates each light individually, except when Light Interaction is set to 'Collectively'.

BUTTON LINKS FOR FUNCTION CONTROL

In addition to connecting keypad buttons to simulate specific Contacts (1 to 15), it is also possible to connect keypad buttons to control the Function itself, fully or partially, in the following sequences (when the corresponding button is pressed):

- The 'Full Function Control' button link:
    - If the Function is currently Active, it is put On Hold.
    - If the Function is currently On Hold, it is Ended.
    - If the Function is currently Inactive but Enabled, it is Disabled. If a delay is specified for 'When Lights Turned Off Manually', the function is Disabled for that number of seconds only and the LED changes color and blinks (press again to stop the countdown).
    - If the Function is currently Disabled, it is Enabled.

- The 'Disable Only Control' button link:
    - If the Function is currently Enabled, it is Ended if necessary (even if it is On Hold) and then Disabled. If the Function is active and a delay is specified for 'When Lights Turned Off Manually', the Function is only Ended after that number of seconds and the LED blinks during the delay.
    - If the Function is currently Disabled, it is Enabled.

- The 'EASY Function Control' button link **AND** Experience Button: the behavior of this button is governed by the 'EASY Function Control Button' property. The default is 'Start, Hold and End' on successive buttons presses. A 'Press and Hold' action will always End the Function immediately. **IMPORTANT**: if the Function is currently Disabled, this button is ineffective.
    - **Start**: If the Function is currently Inactive (but Enabled), it is started as with a programming trigger.
    - **Start&Hold**: If the Function is currently Inactive (but Enabled), it is started as a programming trigger and immediately put On Hold, effectively stopping the timer. If the Function is currently Active but not On Hold (started via another process), it is put On Hold.
    - **Alternate**: the Lights are set to the Alternate Light On Level if it is specified.
    - **Hold**: If the Function is currently Active, it is put On Hold.
    - **End**: the Function is terminated after the delay (exit delay) specified for 'When Lights Turned Off Manually'. If the Function is currently being terminated (in exit delay), it is terminated immediately.

    Note: if you wish to use **Start&Hold**, consider setting the 'Function Active' and the 'Function On Hold' colors to be the same, to avoid brief flashings of different colors.

COMMUNICATING WITH OTHER INSTANCES OF THIS DRIVER (*NEW*)

The driver has the ability to influence or be influenced by other instances of itself in the project. Since each instance of the driver is centered around a controlled light or set of lights, this allows the implementation of a wider lighting control scenario by linking the operation of several lights or groups of lights.

For example, you could have 2 floors, each with a motion sensor. The sensor on the first floor turns the hallway lights of the first floor on and causes the lights of the second floor to turn off. And vice-versa. Each floor would have its copy of this driver and they would be linked with the 'Disabling Peer Functions' property.

Similarly, several instances of this driver could be cascade-triggered when a first instance is triggered by a user (motion, door contact, keypad or otherwise). Use the 'Triggering Peer Functions' property to specify this.

PROGRAMMING VARIABLES AND COMMANDS

- Use the triggered events, programming variables and programming commands ("Activate/Deactivate the Contact", "Enable/Disable the Function", "End the Function immediately/after xx seconds" and "Put the Function On Hold") as required. The Function is enabled by default.

- The variable 'FunctionIsActive' is set to 'true' when the Function is active, 'false' otherwise.

- The variable 'LightOnLevel' may be used to temporarily override the property. Set this to a value between 1 and 100 (percent). This also prevents any Advanced Lighting Scene from running. Remove the override by setting the variable to any negative value (such as -1). Disable lighting management by setting the variable to 0.

- The variable 'LightRampRate' may be used to temporarily override the property. Set this to a value between 0 and 10 (seconds), with 0 meaning instant. Remove the override by setting the variable to any negative value (such as -1).

- The Function may be started by Activating and later Deactivating any of the 15 Input Contacts. Note that when a Contact is Activated by programming, it can only be Deactivated by programming. The command to Trigger a Contact is equivalent to Activating and immediately Deactivating. The Function will then run for the default duration. Some motion sensors (such as NYCE) do not have a CONTACT_SENSOR output to trigger this driver. Simply use a programming command such as:

  When the NYCE Motion Sensor Senses Motion -> Trigger Contact 1 in Advanced Lighting Timer As Per Property

- **Guest Mode** allows the Function to keep the lights On after they have been triggered. This may be useful in special situations when you do not wish the lights to turn Off at the end of the normal delay. You may turn Guest Mode On for a given amount of time using the Countdown Timer experience button driver, for example. It is also possible to broadcast the Guest Mode 'Activate' and 'Deactivate' commands to all other instances of the Advanced Lighting Timer driver so that you only have to program this in one location. When the Function starts while its Guest Mode is Active, the Function is effectively put On Hold immediately.

SUPPORT

For support on this driver please go to https://help.drivercentral.io/. Give a detailed description of the problem and also include the version number of the driver and the version of Control4 OS that you are using.

AUTO UPDATE

This driver is updated with fixes and new features from time to time. To ensure your project uses the latest version, set the Automatic Updates property of the driver to On.

CHANGELOG

1.0.0 June 27, 2015	Initial Release
2.0.0 April 15, 2016	Added EASY CONFIG, Duration for each input contact, additional Properties, Commands, Actions and Events, issues fixed
10.0.0 July 17, 2017	Added output contact and relays, enhanced Function management, migrated to driverCentral, issues fixed
14.2.0 August 26, 2020	Added button link for 'Enabled Function Control', issues fixed, licensing infrastructure updated
14.3.0 December 22, 2020	Issue fixed with LED not updated after restart
15.0.0 August 10, 2021	Added EASY COLORS, Ambient Light Monitoring, the Alternate Light On Level contact, issues fixed
15.1.0 October 29, 2021	Added Second Alternate Light On Levels
16.0.0 February 14, 2022	Added EASY SCENES, Guest Mode, versatile EASY Function Control button, twin driver with Experience Button and made Expanded Contacts optional via a Property, issues fixed
16.1.0 February 21, 2023	Added command to disable/enable all instances
16.1.1 September 18, 2023	Issue fixed with Light Action
16.2.0 February 12, 2024	Debounce timer maximum increased to 10 seconds for Special Blackout period
16.3.0 May 5, 2025	Support for wired keypads, added new Light Actions
16.4.0 February 23, 2026	Fixed issue with 12-hour clocks and memory, added Convenience button link and programming command to set current Ambient light level
16.4.1 May 21, 2026	Fixed issue with Convenience binding
16.5.0 September 26, 2026	Added property for Function status, support for Default Off Toggle in Advanced Lighting Scenes
16.6.0 October 26, 2026	Added conditionals, issue fixed with Non-dimming lights

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