Outside Lights Timer Driver.

This driver will control 8 circuits of lighting (or anything else) using astronomical or local clock times and days of the week.
It stores all the timer settings into persistent memory of the processor.
When the driver is started, say after a power failure, it checks each of the timers and triggers the appropriate ON or OFF event after the *'Delay before starting driver'* has expired (see bellow). This means if you have security lights that need to be on during darkness, the ON event will be triggered to turn them on if the system is reset during the night.
Ensure you have the correct system location and clock information set in the processor properties.
All buttons are tagged for use in ID11. This means you can programme one timer, then copy and paste the others. Feedback values are also tagged to the buttons so they will automatically reverse state when true.

Driver Configuration:

The individual timers can be added to specific rooms in a project using the 'Add Workspace Item' and each timer appears in the System Manager as a separate source.

Location: In the driver configuration you need to set the Latitude and Longitude for the location of the project. This is used to calculate the sunrise and sunset times specific to that location. The easiest way to get this information is to go to Google Maps. Find the location of the project, Right click on the location and a popup menu shows you the latitude and longitude. Click on the latitude and longitude values and they will be automatically copied to your clipboard. Paste the values into the driver configuration. You can paste the same values into the weather driver while you're at it.

Delay before starting driver: Some lighting drivers can take a long time to initialise and won't accept commands properly till they are fully configured and communications between the lighting control system and the RTI processor have been established. Also, if the lighting driver is using IP to communicate with the lighting system, there will be a delay before the network comes back up after a power failure. The *'Delay before starting driver'* option allows you to set a delay before this driver will trigger any events. This delay only runs once when the processor is booted, at all other times the events are triggered immediately. The delay is in seconds and the maximum delay is 1800 seconds, this is equivalent to 30 minutes.

Timer Name: Give each timer a descriptive name. This name will be used in the project to help identify which timer you are working with. The name is also available as a variable.

Driver Functions
The driver functions are split into three sections for each timer 'ON Settings', 'OFF Settings', 'Timer Enabled' and 'Layer Switch'

ON Functions:
Use Astronomical Clock
This determines if the ON timer uses times relative to sunset. Tag="OnAstronomical"
Astronomical Clock Offset +
This adjusts the ON offset time before or after sunset in 5min increments. Tag="AstronomicalOn+"
Astronomical Clock Offset –
This adjusts the ON offset time before or after sunset in 5min decrements. Tag="AstronomicalOn-"
Use Local Clock
This determines if the ON timer uses the local time from the processor clock. Tag="OnClock"
Clock Hour +
Increments the ON time by one hour. Tag="OnHour+"
Clock Hour –
Decrements the ON time by one hour. Tag="OnHour-"

Clock Minute +
Increments the ON time by one minute. Tag=”OnMinute+”
Clock Minute –
Decrements the ON time by one minute. Tag=”OnMinute-“

OFF Functions:
Use Astronomical Clock
This determines if the OFF timer uses times relative to sunset. Tag=”OffAstronomical”
Astronomical Clock Offset +
This adjusts the OFF offset time before or after sunset in 5min increments. Tag=”AstronomicalOff+”
Astronomical Clock Offset –
This adjusts the OFF offset time before or after sunset in 5min decrements. Tag=”AstronomicalOff-”
Use Local Clock
This determines if the OFF timer uses the local time from the processor clock. Tag=”OffClock”
Clock Hour +
Increments the OFF time by one hour. Tag=”OffHour+”
Clock Hour –
Decrements the OFF time by one hour. Tag=”OffHour-”
Clock Minute +
Increments the OFF time by one minute. Tag=”OffMinute+”
Clock Minute –
Decrements the OFF time by one minute. Tag=”OffMinute-“

Timer Enabled Functions:
Always The timer will function every day of the week. Tag=”Always”
Never The timer will never be triggered. Tag=”Never”
Weekends The timer will trigger on Saturday and Sunday only. Tag=”Weekends”
Weekdays The timer will trigger on weekdays only. Tag=”Weekdays”
Monday The timer will trigger on Mondays. Tag=”Monday”
Tuesday The timer will trigger on Tuesdays. Tag=”Tuesday”
Wednesday The timer will trigger on Wednesdays. Tag=”Wednesday”
Thursday The timer will trigger on Thursdays. Tag=”Thursday”
Friday The timer will trigger on Fridays. Tag=”Friday”
Saturday The timer will trigger on Saturdays. Tag=”Saturday”
Sunday The timer will trigger on Sundays. Tag=”Sunday”

Layer Switch
The layer switch assigns a Boolean value to each timer. Each timer can be selected with this function. Only one variable is true exclusively. This variable can be used like the Layer Switch Driver to switch on the visibility or reversed state of layers and buttons in your design.

Variables:

Global Variables:
Todays Sunrise Time 24h Todays sunrise time in 24 hour format. (06:52)
Todays Sunrise Time am/pm Todays sunrise time in am/pm Format. (6:52am)
Todays Sunset Time 24h Todays sunset time in 24 hour format. (17:54)
Todays Sunset Time am/pm Todays sunset time in am/pm format. (5:54pm)

Timer Specific:
Astronomical ON Boolean. The ON timer uses a time relative to sunset Tag=”OnAstronomical”
Local Clock ON Boolean. The ON timer uses the local clock. Tag=”OnClock”
Astronomical OFF Boolean. The OFF timer is relative to sunrise. Tag=”OffAstronomical”
Local Clock OFF Boolean. The OFF timer uses the local clock. Tag=”OffClock”
Clock ON Time (24 Hour) String. Timer On time in 24 hour format. Tag=”On24”

Clock ON Time (am/pm) String. Timer on time in am/pm format. Tag="OnAmPm"
Clock OFF Time (24 Hour) String. Timer OFF time in 24 hour format. Tag="Off24"
Clock OFF Time (am/pm) String. Timer OFF time in am/pm format. Tag="OffAmPm"
Astronomical ON Offset String. Timer ON offset in minutes. Tag="OnAstronomicalOffset"
Astronomical OFF Offset String. Timer OFF offset in minutes. Tag="OffAstronomicalOffset"
Timer Active Monday Boolean. Timer is active on Mondays. Tag="Monday"
Timer Active Tuesday Boolean. Timer is active on Tuesdays. Tag="Tuesday"
Timer Active Wednesday Boolean. Timer is active on Wednesdays. Tag="Wednesday"
Timer Active Thursday Boolean. Timer is active on Thursdays. Tag="Thursday"
Timer Active Friday Boolean. Timer is active on Fridays. Tag="Friday"
Timer Active Saturday Boolean. Timer is active on Saturdays. Tag="Saturday"
Timer Active Sunday Boolean. Timer is active on Sundays. Tag="Sunday"
Timer Active Always Boolean. Timer is active on everyday. Tag="Always"
Timer Active Weekdays Boolean. Timer is active on Weekdays only. Tag="Weekdays"
Timer Active Weekends Boolean. Timer is active on Weekends only. Tag="Weekends"
Timer Circuit ON Boolean. The timer is currently ON.
Timer Name String. The name of the timer from the Configuration.

Layer Switch:
Timer 1 Selected Boolean. Timer 1 is selected.
Timer 2 Selected Boolean. Timer 2 is selected.
Timer 3 Selected Boolean. Timer 3 is selected.
Timer 4 Selected Boolean. Timer 4 is selected.
Timer 5 Selected Boolean. Timer 5 is selected.
Timer 6 Selected Boolean. Timer 6 is selected.
Timer 7 Selected Boolean. Timer 7 is selected.
Timer 8 Selected Boolean. Timer 8 is selected.