

Night Lighting Control Options

COMMON NOTES:

- *Always use supplied protection 'catch' diode connected across the load between the LOAD- terminal and Battery Positive (the 'band' on diode should be on the Battery Positive side).*
- *If you are changing to PROG=4 from a default program (PROG=0-3), check that the REG and MODE menu settings are correct for your installation. (See 'Settings used in programs 0-3' table in PL Reference Manual)*

(1) Simple... Dusk/Dawn Triggered Night Lighting Control Setup (PROG=2 or PROG=3):

The simplest option for night lighting is to use one of the generic programs for night lighting (PROG=2 for flooded batteries, PROG=3 for sealed batteries). This requires no event control programming, and turns the LOAD- terminal on at dusk and off at dawn by monitoring the SOLV (open circuit solar panel voltage). The PL assumes it's night when the open circuit solar voltage is less than 1/3 of the system voltage and day when the open circuit solar voltage is greater than 2/3 of system voltage (**after up to 6 minutes delay**).

[For the same functionality in PROG=4 see below]

(2) Custom... Dusk/Dawn Triggered Night Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/EVNT...

STRT=12

(start) TIME=0.0 hrs

STOP=12

(stop) TIME=25.0

----- (the above 4 settings have the effect of making the STRT and STOP irrelevant)

EMOD=2 (it's night)

TMOD=0 (always active, but will turn off the event if battery voltage falls below LOFF).

NOTES:

- *These settings are the same as preset for the event controller when using PROG=2 or PROG=3 but can be used if you require PROG=4 for special battery settings etc.*
- *The EMOD=2 function is monitoring the open circuit solar panel voltage. The PL assumes it's night when the open circuit solar voltage is less than 1/3 of system voltage and day when the open circuit solar voltage is greater than 2/3 of system voltage (**after up to 6 minutes delay**).*
- *TMOD =8 can be used if you want to disable battery low disconnect functionality.*

(3) Time Triggered Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/EVNT...

STRT=12

(start) **TIME=xx.x hrs (24hr clock, where 22.5 = 10:30pm etc)**

STOP=12

(stop) **TIME=xx.x hrs (24hr clock)**

EMOD=0 (always active ie. irrelevant)

TMOD=0 (always active, but will turn off the event if battery voltage falls below LOFF).

NOTES:

- *Remember the PL regulator time will be reset to 0.0 hrs if power is removed.*
- *TMOD=8 can be used if you want to disable battery low disconnect functionality.*
- *STRT and STOP/TIME should be set to a time before midnight (0.0h). If you require a solution which runs through midnight see options 5 and 6.*

(4) Push-button Triggered Night Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/MODE/BSET=2 (use battery negative sense as an input for event controller)

SET/EVNT...

STRT=4

(start) **TIME=00.0** (makes the time irrelevant so event will always start with pushbutton)

STOP=14

RUN=x minutes

EMOD=2 (it's night)

TMOD=0 (always active, but will turn off the event if battery voltage falls below LOFF).

NOTES:

- *Pushing a button turns a light on at night for x minutes (0-240 minutes).*
- *You could use a PIR to trigger the lighting event.*
- *If STOP=15 then RUN=x (runtime) changes from minutes to hours (0.0-24.0 hours).*
- *A normally open push-button should be wired between the 'B-' input (green terminal block under regulator cover) and the BAT- terminal (battery negative) ie. 'B-' input must be taken low to trigger.*
- *Pressing the button during the day will have no effect due to EMOD=2 (it's night). If you want to disable this feature then set EMOD=0 (ie. make irrelevant).*
- *TMOD=8 can be used if you want to disable battery low disconnect functionality.*

(5) From Dusk for a Set Run Time Night Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/EVNT...

STRT=1

(start) **SOLV=4V** (solar open circuit voltage is less than 4V ie. dusk)

STOP=15

(stop) **TIME=x hrs** (run time for x hours)

EMOD=0 (always active)

TMOD=0 (always active, but will turn off the event if battery voltage falls below LOFF)

NOTES:

- *For a 12V system, the open circuit solar voltage of 4V has been used as it is equal to 1/3 of the system voltage and is the threshold used by the PL when it's night. This voltage can be varied to suit your site and panels.*
- *Alternatively, run times of 0-240 mins can be programmed with STOP=14.*
- *TMOD=8 can be used if you want to disable battery low disconnect functionality.*

(6) Time Triggered for a Set Run Time Night Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/EVNT...

STRT=12

(start) **TIME=xx.x hrs (24hr clock, where 22.5 = 10:30pm etc)**

STOP=15

(stop) **TIME=x hrs** (run time for x hours)

EMOD=0 (always active)

TMOD=0 (always active, but will turn off the event if battery voltage falls below LOFF)

NOTES:

- *Remember the PL regulator time will be reset to 0.0 hrs if power is removed.*
- *Alternatively, run times of 0-240 mins can be programmed with STOP=14.*
- *TMOD=8 can be used if you want to disable battery low disconnect functionality.*

(7) From Dusk till a Set Time Night Lighting Control Setup (PROG=4):

SET/PROG=4

SET/MODE/LSET=4 if using the LOAD- terminal or **GSET=4** if using the 'G' terminal.

SET/EVNT...

STRT=12

(start) **TIME=0 h** (always active)

STOP=12

(stop) **TIME=xx.x h** (the set time after dusk you want the lights to turn off, eg. 22.5h for 10:30pm)

EMOD=2 (it's night)

TMOD=5 (active when time > setting but will turn off the event if battery voltage falls below LOFF)

(**TMOD**) **TIME=xx.x h** (see note below)

NOTES:

- ***Remember the PL regulator time will be reset to 0.0 hrs if power is removed.***
- ***TMOD=13 can be used if you want to disable battery low disconnect functionality.***
- ***For night lighting to turn on again before dawn, set TMOD/TIME to the time the lights should turn back on (eg. TMOD/TIME=5.0h for lights on from 5am till dawn). Otherwise, set TMOD/TIME to a time that is after dawn, to ensure the lights stay off for the rest of the night.***
- ***STOP/TIME should be set to a time before midnight (0.0h). If you require a solution which runs through midnight see options 5 and 6.***