Smoke Generator Control Options

The standard G3 smoke generator output uses a fixed 2 minute timer to protect the external smoke generator from burnout. Once activated, the smoke generator will automatically turn off in 2 minutes. If you want more time, or if you would prefer manual control of the smoke generator, this application note shows a couple of different options.

A Relay Will Be Needed

Because of the high current needed by the smoke generator, you must use an external relay for controlling the smoke generator. A simple SPST relay will work. In addition, the relay coil voltage must be matched to the battery voltage. If you are using CVP Products' 14.8V battery, a 12V relay will work just fine. If using a different battery voltage, purchase a relay that will sustain the battery's voltage.

Select A G3 Elite Outputs

For simple on/off control, use any of the ELITE outputs - E1 to E4.

If you want the smoke generator to have the safety of an automatic shutoff, but you want to set your own shutoff time, use ELITE4 which has a user specified shutoff timer.

Assign The ELITE Special Effect

The ELITE output needs to be set for "ON 100%." To do this, lookup the CV number for the desired ELITE output. For example, the CV number for ELITE4 is CV51. The value to put into CV51 is selected from the table of "Special Lighting Effects" which is on the back cover of the G3 manual. A value of 4 is what's needed.

Set CV51 to a value of 4 by using either SERVICE or OPS mode programming. The G3 will chirp when it accepts the new value.

Set The ELITE4 Timer - If Used

The ELITE4 auto-off timer is CV52. The timer can be set to any value from 1 to 255. The units are in seconds so 255 is equal to about 255 seconds which is a bit more than 4 minutes.

Select The Function Control Key

The last step is to decide which throttle function key will control the ELITE output. Throttle function-10 (abbreviated F10) is already defined to control the dedicated smoke controller. You can use F10 or any other of the available function keys. For this example, F10 will be changed to control ELITE4 instead of the dedicated smoke generator output.

First step is find which CV controls what F10 does. From the table on the rear cover of the G3 user's guide, F10 is associated with CV44. The value stored in CV44 determines what is controlled when F10 is activated. From the Function Key Action table, a CV value of 6, controls ELITE4. In summary, CV44 needs to be set to a value of 6.

Using either SERVICE or OPS mode programming, set CV44 to a value of 6. The G3 will chirp when the CVP is programmed to the new value.
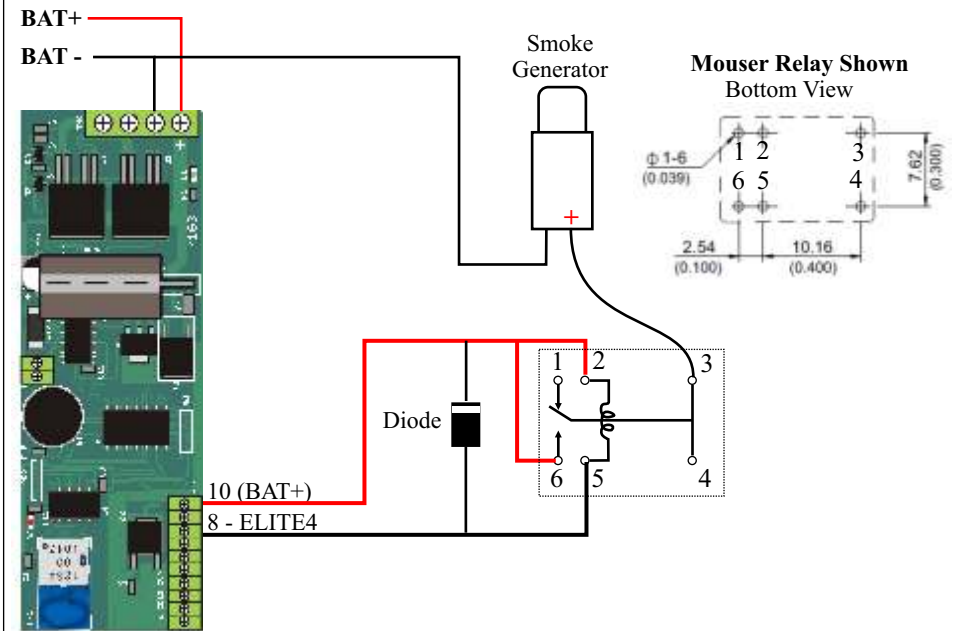
Hookup Diagrams

The next page shows how to hookup the relay to the G3's ELITE output. Do not forget the diode across the relay coil - without the diode, the ELITE output will be damaged.

Diode Orientation, Symbol and Physical Appearence

The diode used on the relay coil must be oriented correctly, If the diode is not oriented properly, the ELITE output will be damaged.
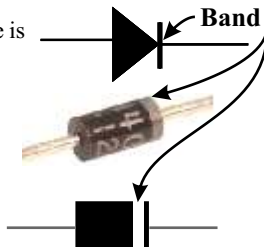
Hookup Diagram and Relay Source

In this hookup diagram, the generic smoke generator is shown as connecting to the "normally open [NO]" relay terminals. Since the smoke generator will likely be off more than on, this will minimize the battery drain.

When the relay is activated, the contact closes and completes the circuit from pin 10 (BAT+) to BAT- which is at the connection where BAT- is connected to the G3.

If your smoke generator is polarized, the plus terminal connects to the relay pin 3 and the other connection goes to BAT-.

Mouser Electronics - www.mouser.com

Relay	SPST, 12VDC	893-842-1C-S-12VDC	~$1.00
Diode	1N4002	512-1N4002	~$0.13