

# Grade Crossing Controller (GCC) Interface Application Notes

The outputs available on terminal block X6 are for use with loads that require 5 volts with current up to 25 mA. The instructions has a diagram (Figure 6) showing the use of a resistor and transistor for driving a higher current load, but this is still limited to the 5 volt level of the V+ terminal, and about 75 mA of current.

This document provides additional information for driving higher current and voltage loads as well as driving a sound generator to provide crossing bell sound effects.

## Loads Using the 8-16 Volt Supply

The GCC can control a load that requires a voltage higher than the 5 volts available on the V+ terminal of X6. Using the output needed (F1, F2, HI, or LO), a transistor and resistor may be used as shown in Figure 1. In this example, the HI output is used, which turns on the load when the crossing signals are active. A transistor such as the 2N3904 allow up to 200 mA load current with a 40 volt maximum. In Figure 1, the load is powered by the 8-16 volt supply that powers the GCC.

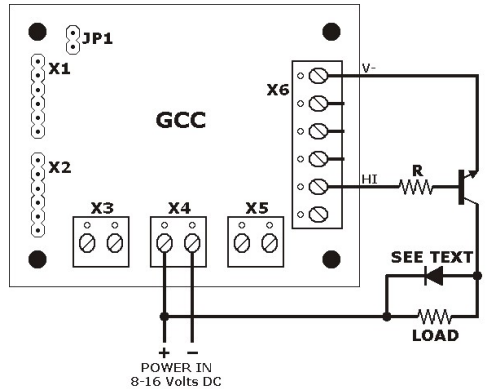


Figure 1

The value of the resistor, R, can be 1k ohm, though any value from 270 ohm to 1k8 ohm will work fine. The diode is only necessary if the load is inductive, such as a relay coil. A diode such as the 1N4148 or 1N4001 will work fine.

## Sound Effects with an ITT Products' Sound Effects Module

ITT Products (<http://ittproducts.com>) makes the HQ Enhanced sound effects module that is available with a number of different sounds, including five different crossing bells.

The simplest way to interface the GCC with the HQ is to use the method shown above to power on and power off the module.

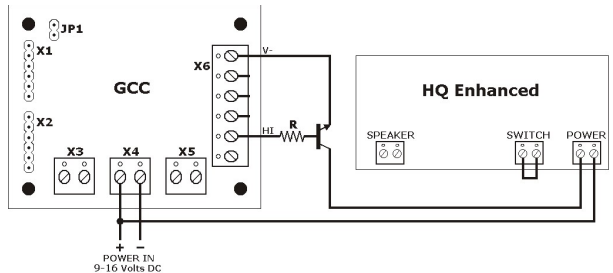


Figure 2

The full circuit can be seen in Figure 2. The HQ works with a power supply voltage of 9 to 16 volts, which can power the GCC as well. Testing this arrangement has shown that a 1k ohm resistor for R works well.

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