

Configuring the GCC

The Grade Crossing Controller (GCC) has three configurable parameters, each with four possible value choices:

- Automatic Shut-off Time: 20, **40**, 60, or 80 seconds
- Clear Delay Time: **0 (disabled)**, 2.4, 4, or 5.6 seconds
- Crossing Signal Flash Rate: 480, **640**, 800, or 960 milliseconds

Automatic shut-off is enabled/disabled by installing/removing a jumper on **JP1**.

Configuration Procedure

The procedure for configuring the GCC's parameters has some complexity, as it needed to co-exist with the limited number of inputs and outputs that exist for normal operations. However, changing these values is not a regular activity, and it is likely that most users who need to change values will only do so at time of installation.

The six occupancy inputs (three for each track) on connectors **X1** and **X2** are used to select a value for each parameter. The six inputs are divided into three pairs, with each pair being used to select one of four possible values for each parameter. It is necessary to configure all three parameters at the same time. Leaving both inputs for a parameter when configuring will select the default for that parameter.

If both tracks are used, the easiest way to set values is to use track occupancy to set or clear an input. Alternatively, it is possible to attach short jumper wires from the connectors to set the appropriate values, see Figure 1. Each header, **X1** and **X2**, has six pins. Three of them are the occupancy inputs and one is the V- (or ground) connection. An occupancy detector effectively connects an input pin to ground when the track is occupied.

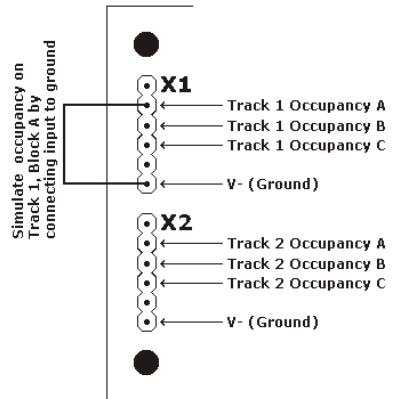


Figure 1

To confirm the steps when configuring the GCC, a LED (and its current limiting resistor) should be connected between the **H1** output and ground. This LED will blind during configuration to indicate what has taken place.

During the configuration procedure, you will need to connect outputs **F1** and **F2** together. Under normal operation, **F1** and **F2** should not be connected together as they are both outputs. However, when the GCC initially powers up, a check is performed to see if they are connected together. If they are, the GCC will go into configuration mode. If they are not, it will operate as usual.

Configuration Steps

Follow these steps to configure new parameter values:

- 1) Shut off or disconnect power from the GCC.
- 2) Remove any connections to outputs **F1** and **F2**.
- 3) Connect a wire between **F1** and **F2**. If something is not connected to the **HI** output, connect an LED with a current limiting resistor. See Figure 2.
- 4) Power up the GCC. If it detects the connection between **F1** and **F2**, the LED on the **HI** output will blink three times to confirm configuration mode.
- 5) Set or clear the occupancy inputs to obtain the desired values for each of the three parameters. Refer to the three tables on page 3.
- 6) When inputs have been set, remove the connection between **F1** and **F2** while the GCC remains powered. 1.5 seconds after removing the connection, the LED will blink three sequences to confirm the three parameters. Each of the sequences will correspond to what is shown in the "Blink Confirmation" column of each table on page 3. Between each sequence will be a pause of 0.75 seconds.
- 7) Shut off or disconnect power from the GCC. Replace normal connections before powering up the GCC for operation.

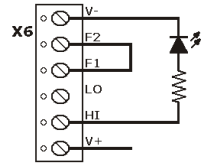


Figure 2

Configuration Example

The following parameter values are to be set:

- Automatic Shut-off Time: 20 seconds
- Clear Delay Time: 0 seconds, the default
- Crossing Signal Flash Rate: 960 milliseconds

From the Automatic Shut-off Time table, Track 1 Occupancy A and Track 1 Occupancy B must be grounded (or be occupied if using a detector for the input).

From the Clear Delay Time table, both of the inputs used can remain ungrounded (or vacant if using a detector for the input).

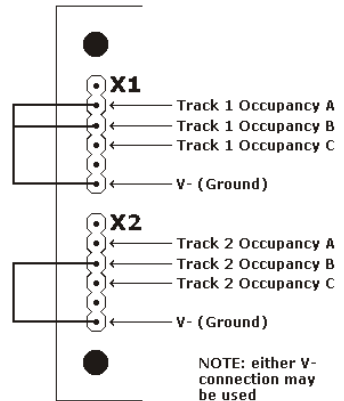


Figure 3

From the Crossing Signal Flash Rate table, only Track 2 Occupancy B must be grounded (or be occupied if using a detector for the input).

If connecting to ground, the inputs should be connected as shown in Figure 3.

When the connection between F1 and F2 is removed, the LED will flash the following sequence:

• • • – • •

Configuration Input Settings

For each parameter, the default value is the first row.

Automatic Shut-off Time			
To obtain value of...	Track 1, Occupancy A	Track 1, Occupancy B	Blink Confirmation
40 seconds	vacant or ungrounded	vacant or ungrounded	–
60 seconds	vacant or ungrounded	occupied or grounded	•
80 seconds	occupied or grounded	vacant or ungrounded	••
20 seconds	occupied or grounded	occupied or grounded	•••

Clear Delay Time			
To obtain value of...	Track 1, Occupancy C	Track 2, Occupancy A	Blink Confirmation
0 seconds (disabled)	vacant or ungrounded	vacant or ungrounded	–
2.4 seconds	vacant or ungrounded	occupied or grounded	•
4.0 seconds	occupied or grounded	vacant or ungrounded	••
5.6 seconds	occupied or grounded	occupied or grounded	•••

Crossing Signal Flash Rate			
To obtain value of...	Track 2, Occupancy B	Track 2, Occupancy C	Blink Confirmation
640 ms	vacant or ungrounded	vacant or ungrounded	–
800 ms	vacant or ungrounded	occupied or grounded	•
960 ms	occupied or grounded	vacant or ungrounded	••
480 ms	occupied or grounded	occupied or grounded	•••

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