In the UK motorists are warned that the barrier is about to descend at level crossings with a amber light, this is followed by two red flashing lights. Most of the rest of the world dispenses with the amber warning lamp and has only the two red flashing lights. In the USA these two lights are called a wigwag. The Grade Crossing Controller operates the non UK type of crossing. The grade crossing can either work automatically with the approach of trains on single or double track or be operated as manually with an on off switch. As well as operating two sets of paired red flashing lights it switches contacts whilst the crossing lights are flashing. The contacts can be used to switch the mechanism to raise and lower the barrier. The contacts can also be used to stop faller cars when trains are approaching. This can be done either by switching on an electromagnet or by moving a permanent magnet (using servo motor controller board and servo motor). The Faller road vehicles are designed to stop when they encounter a magnet. The contacts are located at terminals c,b1,b2 and consist of a spdt contact.

Wiring Connections

Terminals D1 and D2 are used for automatic operation of single track crossings either reed switches or IRDOT-1 infra red detectors can be used. A detector is located at either side of the crossing at a distance from the crossing where you wish the crossing to start operating. For double track an extra pair of detectors is located on the second track. These connect to terminals D3 and D4.

For a 12 volt DC supply connect supply positive to the "+" and supply negative to the "o" terminals of the crossing controller. The IRDOT-1s are wired to the same power supply as shown in the diagram. Connect the terminal 1s to positive and the terminal 6s to negative. Now check that each IRDOT-1 is working correctly. The LED supplied fitted to the IRDOT-1 should light when your hand moves over the IRDOTs infra red sensors. If the LED does not light recheck the power wiring. If the LED is permanently lit check for infra red reflections off sleepers etc. The wiring is identical for AC.

CROSSING LIGHTS

Two pairs of LEDs are provided for the crossing lights. Different sized LEDs may be substituted. One pair of LEDs connects to both RB terminals the other to both RA terminals. The board causes the crossing lights to flash by alternating the polarity of each set of terminals. This allows the LEDs to light alternately with only two wires connecting to the LEDs. (LEDs only light when their long leg is positive short leg negative). The LEDs are connected with the long leg of one to the short leg of the other.

MANUAL SWITCH

For manual operation an on off switch can be used. This is wired to make a connection between terminal "o" and terminal "SW".

Faller crossing

The Faller crossing controller is designed to operate the faller kit automatically with the approach of trains. The only difference from the Grade Crossing board is in the operation of the contacts connected to terminals c,b1 and b2. These give a momentary connection to the Faller kit motor to initiate the barrier rising or falling. As the Faller kits motor requires AC it may be more convenient to use the same AC supply as the Faller motor.