

SHUTTLE TRAIN CONTROLLER

INSTALLATION:

- install sensors and connect them to board (photo 2)
- connect sensor board to main board (photo 1)
- connect power supply and test sensors (if you cover them, the LEDs must be light)
- connect rails to OUT terminal (photo 1)
- install 1N4007 diodes to the end of the track (diode stops the train - photo 3) - optional
- set potentiometers to the middle position
- connect power supply (choose the voltage depends on the used motor/ locomotive). Analog locomotive needs 12V max. The minimum voltage is 8V! Do not exceed 30V!
- check connection once again and switch the power supply on
- train goes Forward, LED5 (red) lit
- **IMPORTANT:** the train has to move toward to Sensor 3! If moves to opposite direction, turn the train or change voltage polarity to the track (OUT terminal)

USING:

- if you change the values with potentiometer the new values will be accepted after the station delay is ended
- press microswitch for a few seconds to decrease or a bit longer to cancel the station delay
- if you wish to install Middle station, connect another sensor (Sensor2 terminal). You can add how many you need, just connect all station sensors to the same terminal. If train covers Sensor2, starts decelerate to zero. After the delay is ended goes toward to the same direction.

Potentiometers:

Speed - speed of train, Acc - acceleration, Dcc - deceleration, Time - station delay (1-10 min), pushbutton - cancel station delay

ATTENTION: The Sensor 1 activates the deceleration of the train in Backward direction (Green - LED4) and the Sensor 3 activates the deceleration of the train in Forward direction (Red LED5) only!

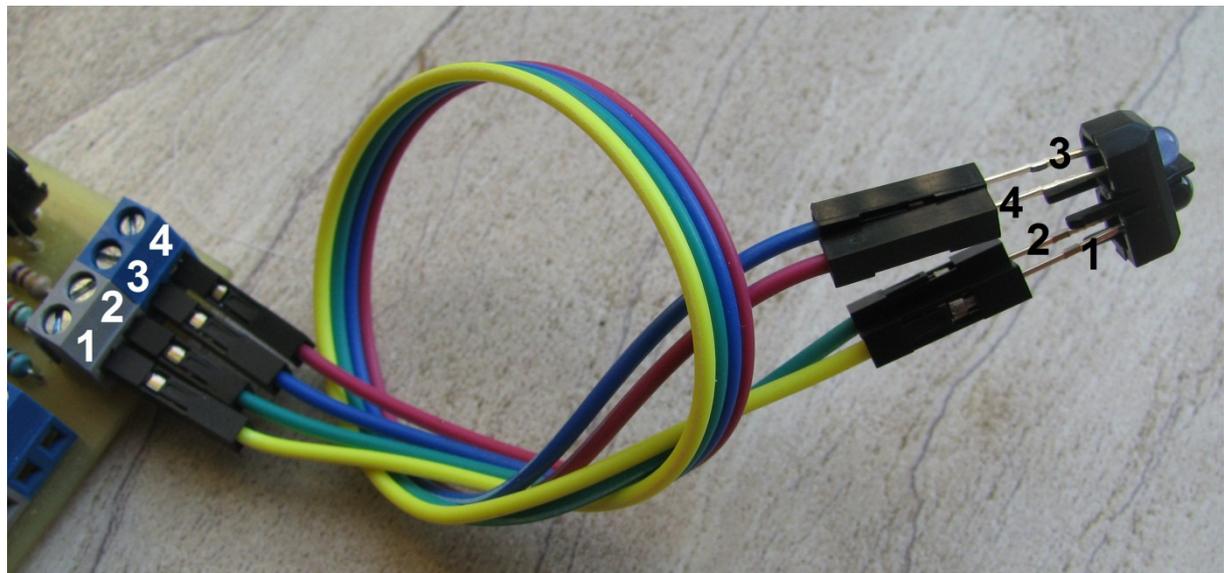
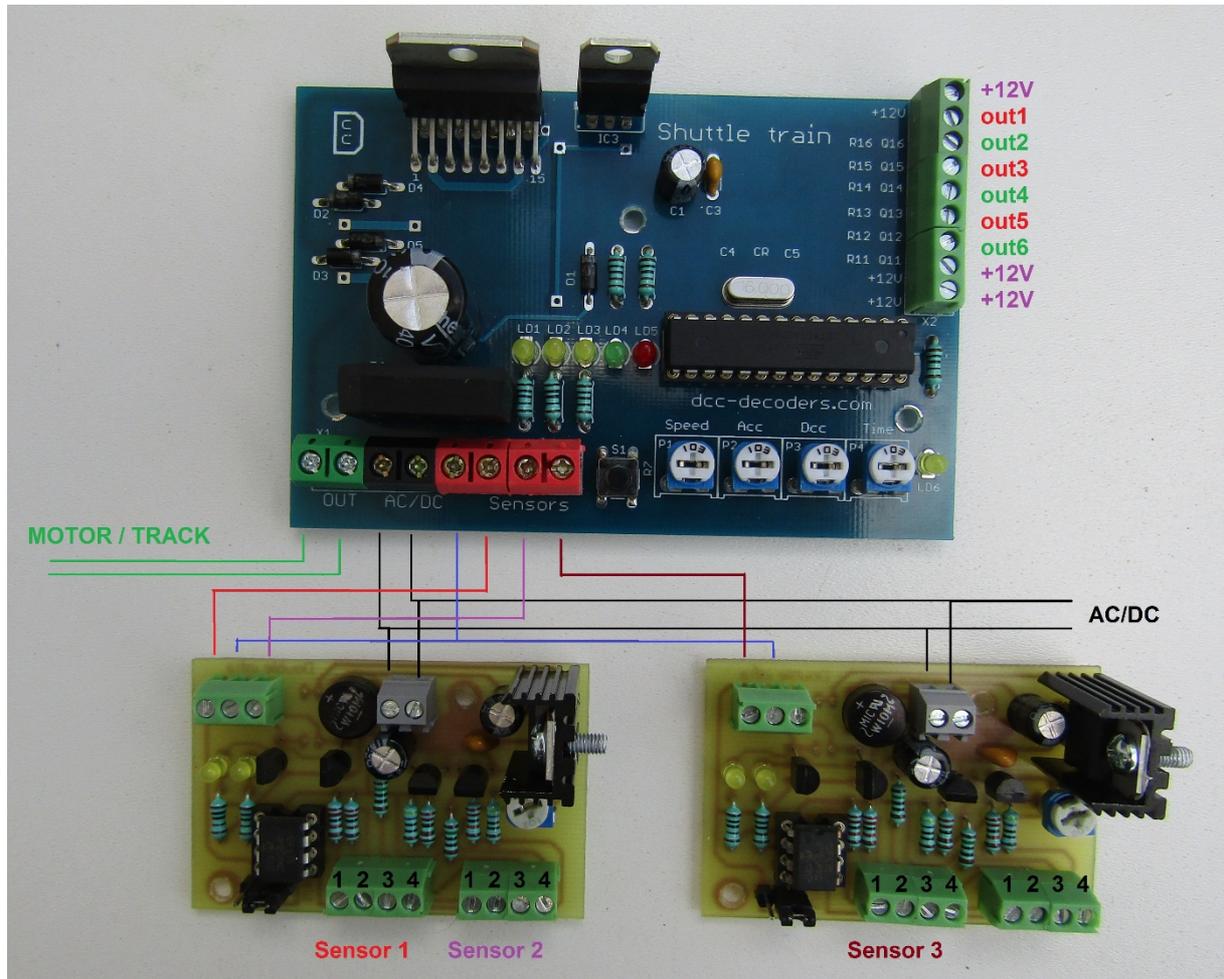
TRAIN DIRECTION AFTER POWER ON:

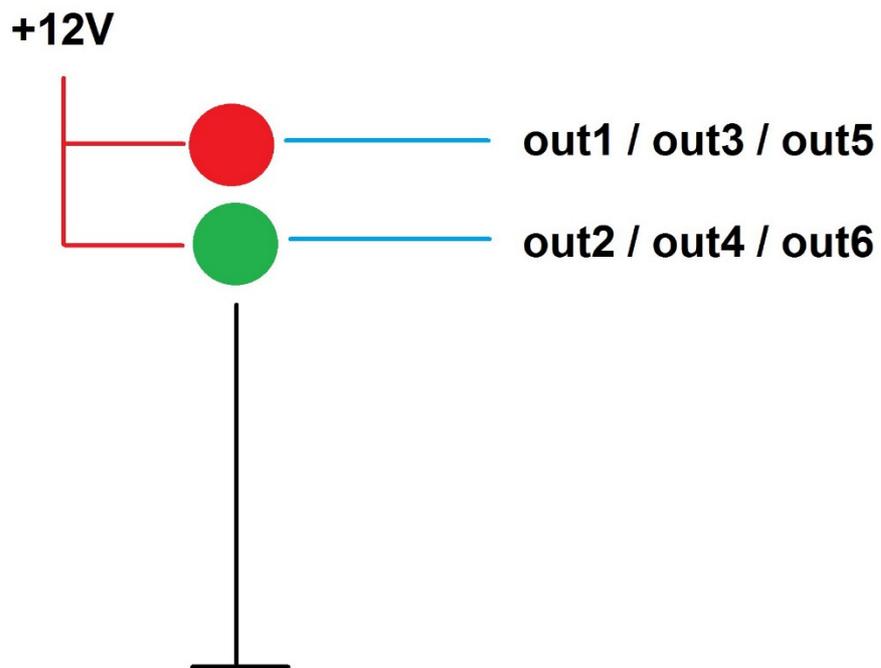
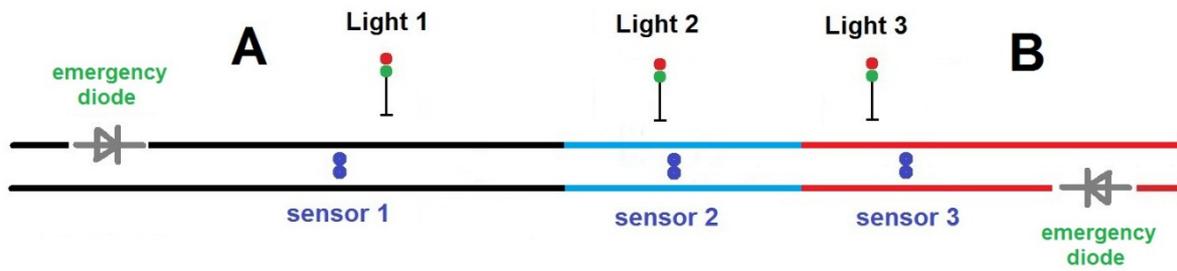
Sensor 1	Sensor 2	Sensor 3	Direction
1	0	0	Forward - red LED
0	1	0	Forward - red LED
0	0	1	Backward - green LED
0	0	0	Forward - red LED

0 - uncovered sensor / 1 - covered sensor

PARAMETERS:

- power supply: 10-20V AC/DC
- output current: 3 amperes
- station delay between 1 - 10 minutes
- signal light output: 12V DC - 100mA / output
- recommend to use aluminium heatsink in case if power output modules are very hot (over 50 degrees Celsius). Both power modules can be connected to the same heatsink.





ATTENTION:

If you connect LEDs to the output, use adequate serial resistors to reduce voltage!