



## Wizard 14- 6 DC Motor Control Card

The Wizard 14 allows the forward/reverse control of up to 6 small 3-4.5V DC motors. The board incorporates loop play with variable time delay and auto play back at power up. Up to 6 minutes of motor action may be recorded. Actions are recorded in real time and a recording session built up on a channel by channel basis.

### Connections

#### Power

5 – 6 VDC only centre positive 2.1mm socket. The supply should be capable of delivering 0.5 amps for each motor connected.

#### Motors

Connections via 2-way terminal blocks for up to 6 small DC motors with current requirements of up to 250mA each.

#### Sync

Normally high output goes low for 50msecs at the beginning of each playback and record action- may be used to trigger other Wizard boards.

#### Rem

Initiates Remote playback. This input is pulled high internally and is compared to the status of the Rem-pol setting. If the two settings match then playback is initiated- eg if the you want to connect a simple switch to the Rem terminals, the Rem contacts would normally be high (pulled high internally) so you would set the Rem-pol jumper to the Low position. When the

switch is made, the Rem contact is pulled Low when it matches the state of the rem-pol jumper and initiates playback.

## **Controls**

### **CCW**

Turns the selected motor counterclockwise

### **CW**

Turns the selected motor clockwise

### **Play**

Initiates playback of recorded moves

### **Record**

Jumper J2 must be set at the E position for the Record button to be active. Pressing Record starts recording- Press again to stop recording.

If the Record button is pressed at switch on, then all data is erased- erasing progress is indicated by the 6 green leds.

### **Next**

Selects the next motor for recording. The currently selected motor is indicated by the 6 green leds.

### **Auto**

Switch to the Y position for automatic playback at power up.

### **Loop**

Switch to Y to initiate looping playback. Once a playback session has ended, the board will wait a time determined by the Loop Delay trimmer before starting playback again.

### **Play Led**

Lights when playback is in progress and flashes when waiting between plays if looping play is selected.

### **Record Led**

Lights when recording is in progress.

### **Rem-Pol**

Sets the logical active state for the REM terminals.

## **Operation**

Connect up to 6 small dc motors to the terminal blocks

Connect a suitable power supply between 5 and 6V DC.

Hold down the Record button and switch on- release the record button.

The board will erase all previous data- erase progress is indicated by the 6 green leds.

At the end of erasing, led1 will light.

Motor 1 may now be controlled (forwards or reverse) by pressing either CW or CCW buttons.

The overall duration of a recording session is set by the Motor 1 recording so that Motor 1 must be recorded first!

Press and release the record button- the record led will light.

Press the CW or CCW buttons as required- these actions will be recorded in real time.

Press and release the record button to stop recording.

If you wish, press the Play button to playback and check the recording.

Press the Next button to select the next motor channel.

Press and release the record button to start recording.

Press the CW and CCW buttons as required.

The duration of the recording is automatically determined by motor 1.

Recording will cease at the end of motor 1. Motor 1 will be played back whilst motor 2 is being recorded so that moves may be synchronised.

Add further motor actions in a similar way.

Motor channels may be re-recorded at any time.

## **Miscellaneous**

**PCB Size** 135x85mm

### **Power supply**

Small DC motors can demand a significant start-up current so ensure you use a power supply with enough current capacity. If the controller board works predictably with 1 or 2 motors and then starts to behave erratically as more motors are added this will be due to insufficient current capacity in the power supply- use smaller motors or a larger power supply.