



## Wizard 13- Digital/Analog Board

The Wizard 13 board provides up to 6 minutes of recording and playback time for up to 6 digital outputs, 2 PWM and 4 DAC outputs.

The Wizard 13 incorporates looping play with variable delay between loops and Voltage outputs selectable between 0- 5V and 0-10V .

### Connections

#### Power supply-

12V DC at up to 1 amp (current requirement depends on loads). 2.1mm socket, centre positive.

### Outputs

Data is logged and updated during playback every 50msecs

#### Digital

Six buffered digital outputs, 0/5V DC at up to 100mA each. Connections via 2-way terminal blocks

#### PWM

Two channels of buffered PWM , 0/5V DC at up to 100mA each. PWM frequency is 15.6kHz with 8-bit resolution. Connection via 2-way terminal block.

#### DAC

Four channels of variable voltage at up to 25mA each. Range jumper to select either 0-5V or 0-10V Dc range both with 8-bit resolution

#### Sync

Normally high line goes low for 50msec at the start of a recording or playback session- used to trigger other Wizard boards. Connection via 2-way terminal block

#### Rem

REM -Remote connection point for triggering playback- normally high. Connection via 2-way terminal block.

## **Controls**

### **Analog**

Used to adjust the value of the currently selected analog channel during recording. When in loop play mode, sets the delay between subsequent plays- range 0 to 120 seconds.

### **Digital**

Used to toggle the currently selected digital output line.

### **Record**

The jumper must be set to the "E"nable position for the Record button to function

Press to start recording (the red recording light will illuminate)

Press to stop recording (the red recording light will extinguish)

If pressed when power switched on, will erase all previously stored data.

### **Play**

Press to start playback. Playback will continue until the end of the recording session is reached. Playing is indicated by the green led

### **Next**

Press to select the next channel- the current channel is indicated by the green leds numbered 1 to 6. The amber leds marked D and A indicate whether Digital or Analog channels are being accessed.

### **Mode Switch**

Set to D to access the digital channels, set to A to access the Analog channels (ie PWM and DAC).

### **Loop Switch**

Set to Y for looping play- at the end of the playback session, the controller waits for a time determined by the Analog control (0-120 seconds) before starting playback again.

### **Auto Switch**

When set to the Y position, the controller will begin playback when power is switched on.

### **Range Jumper**

Set to 5V for a DAC output of 0 to 5V and set to 10V for a DAC range of 0 to 10V.

## Operation

### Erasing all previous data:

Depress the Record button when switching on. All previously recorded data will be erased. Erasing progress is demonstrated by the green leds 1-6.

### First Recording

Digital channel 1 determines the overall length of the recording session and hence must be recorded first.

(If you are not recording any digital information, then Digital 1 must still be recorded to determine the recording length).

Set the Mode switch to D (digital)- the D led will light

Press the Next button until green led 1 is lit (channel 1 is selected)

Press and release the record button- the red record led will illuminate.

Press the Digital button to activate the Digital 1 output as required.

The green leds 1-6 will indicate recording progress. The green leds will initially all be extinguished and will light as data memory is used. The total recording time is approximately 6.5 minutes (ie an led will light every 50 seconds).

At the end of the session, press the Record button to stop recording- the red led will extinguish.

Press and release the Play button to playback the recorded data.

### Adding further channels

Press the next button until led2 is lit (channel 2 selected)

Press and release the Record button.

Press the digital button to activate the Digital 2 output.

Digital 1 output will be playing back the data just previously recorded at the same time.

Recording will automatically stop when the end of the recording session is reached (red led will extinguish) – this time is determined by the Digital channel 1.

Add further digital channel data in a similar manner.

To add an Analog channel, set the Mode switch to A

Press Next until the required Analog channel is required (1 and 2 PWM, 3 to 6 Voltage)

Press and release the Record button.

Adjust the analog output in real time using the Analog potentiometer.

Recording will cease automatically at the end of Digital channel1.

Press Play to play back the recorded digital and analog data.

Add further analog channels as required.

**PCB- 167x 86mm**