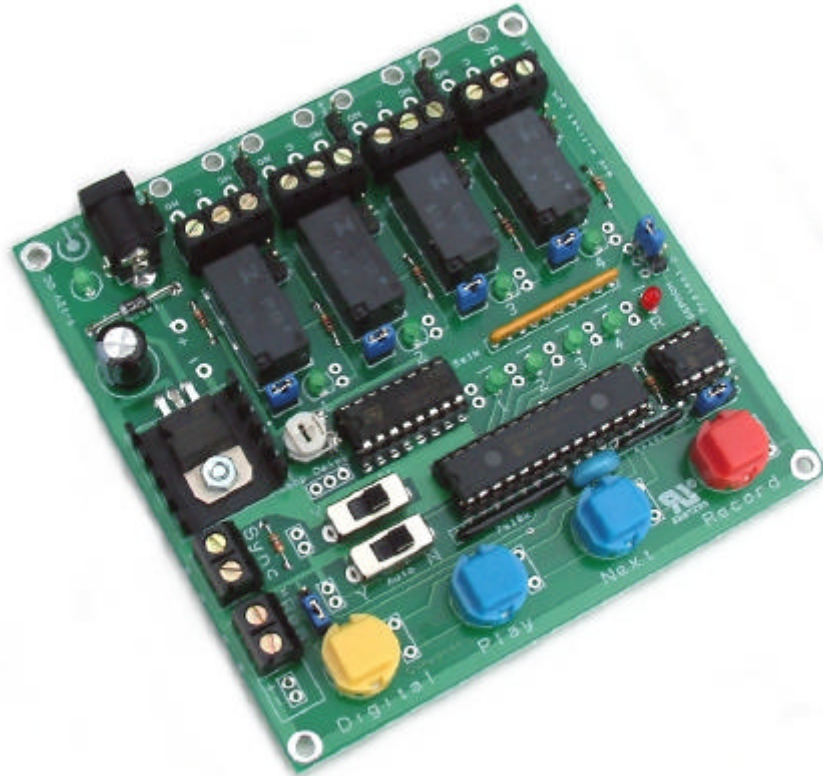


# MILFORD INSTRUMENTS Ltd

---

## Wizard 4 Card (Part Number 1-965)



The **Wizard 4 Card** will record and playback up to 25 minutes of action for up to 4 digital outputs. The card also incorporates features such as looping action with variable delay between loops, auto start-up on power up and a connection interface for a PIR, remote switch or pressure pad to initiate playback. Recording sessions are built up on a track-by-track basis- no programming is required. During recording, all previously recorded tracks are re-played to aid synchronisation.

### Wizard 4 Card

4 Digital channels- either 0/5V @ 100mA outputs or changeover relay rated 30V @ 2Amps .  
Potentiometer to determine the time delay between play loops during automatic loop play- adjustable between 0 and 65 seconds.  
Digital ON-OFF, NEXT, PLAY and RECORD buttons  
Record enable/disable jumper  
Eeprom protect jumper  
AUTO-PLAY and LOOP-PLAY switches  
Sync output for multicard operation  
REMote start option- for interfacing to pressure pads/PIRs etc  
REM polarity select jumper- start on either +5v or 0V condition.

**Reg Office:** Milford House, 120 High Street, South Milford, LEEDS LS25 5AQ United Kingdom  
**Reg Number:** 4222329 tel: 01977 683665 fax: 01977 681465 www.milinst.com

### ON-OFF KEY

Pressing the ON-OFF key will action the currently selected channel output- action is momentary.

### NEXT-channel-key

Changes the current active channel for manual movement and recording.

Each key-press selects the next digital channel 1 through 4.

### PLAY-key

Replays a set of recorded moves.

During playback the channel LEDs will form a bargraph indicating the amount of time used.

A switch may be connected to the REMOTE connector and this will function in the same way as the PLAY-key.

When the moves have finished playing the bargraph-LEDs will go out.

### RECORD-Enable link

If the jumper is set at the "E"nabled position, recording will be permitted. Remove to "D"isable recordings

### RECORD-key

The RECORD-key has no effect unless enabled by using the RECORD-Enable link.

Press and release the RECORD key to commence recording. Press and release the RECORD key to stop recording.

If the RECORD key is held down during power up, all memory will be erased (takes approximately 20 seconds)

During recording the channel LEDs will form a bargraph indicating the amount of time used. When the moves have finished playing the bargraph-LEDs will go out.

**The recording on channel 1 will set the maximum available recording time for all other channels.**

Always record channel 1 first. Recording periods for channels cannot be longer than that set for servo channel1.

#### Examples

##### 1. A Short recording

Select channel 1 by pressing NEXT-channel-key until the LED1 is lit.

Press and release the RECORD-key.

Action the channel output by pressing the ON-OFF button.

Any previously recorded action on channels 2 through 4 will also play.

Press and release the RECORD-key at the end of the 4 seconds to end recording.

Select channel 2.

Press and hold the RECORD-key.

Press the ON-OFF button to action channel 2

The recording will end automatically after 4 seconds.

Select channel 3 etc.

##### 2. A Full-length recording

Select channel 1 using the NEXT-channel-key.

Press and release the RECORD-key.

Action the channel output by pressing the ON-OFF button.

Any previously recorded action on channels 2 through 4 will also play.

Recording will end when memory is full.  
Select channel 2.  
Press and release the RECORD-key.  
Press the ON-OFF button to action channel 2  
Recording will end when memory is full.  
Select channel 3 etc.

### LOOP-Play-switch

To make the **Wizard 4 Card** play the recorded moves repeatedly, move the switch to 'Y'. The moves will start to play when the PLAY-key is pressed. There will be a pause at the end of playing (determined by the position of the loop delay control) after which the moves will start again.  
To record moves, the LOOP switch must be set to 'N'.

### AUTO-Play-switch

If switched to 'Y' then the moves will be replayed automatically on power-on or Reset.  
To record moves this switch must be set to 'N'.

### Pause between play loops

When the **Wizard 4 Card** is set to looping play, the length of the pause between repeated playings may be set by the loop-delay control.  
Turn the loop-delay control anti-clockwise for the minimum delay (0 seconds) and clockwise for the maximum delay (approx 65 seconds).

### Sync Output

The Sync output enables multiple cards to be linked together. The card produces a positive going pulse of duration 50msecs every time a record or playback session is selected. This pulse can be used to trigger additional cards by connecting the SYNC output to the REM terminal of other cards.

### REMOte Input

Connection point for external pressure pad/switch/PIR etc to begin the playback action.  
To begin playback when the input line drops from +5V to ground, set the **Rem-polarity** jumper to the L position. To begin the action when the input goes from ground to +5V (ie a Sync pulse) set the **Rem-polarity** jumper to the H position.

### Eeprom Protect

Set the jumper to the centre and D pins to protect the eeprom from overwriting. Playback is unaffected.  
Set the jumper to the centre and E pins to allow recording of new actions.

### Maximum Recording time

The eeprom which stores the servo moves will store approximately 25 minutes of digital actions.

### Digital Outputs

Pressing the ON-OFF button will set high the currently selected digital channel. Select the other digital channels by pressing the NEXT button.

**Reg Office:** Milford House, 120 High Street, South Milford, LEEDS LS25 5AQ United Kingdom  
**Reg Number:** 4222329 tel: 01977 683665 fax: 01977 681465 www.milinst.com

Press and release the RECORD button to begin the recording session. Press and hold the ON-OFF button whenever you wish the digital output 1 to go active (+5V).

The jumper nearest the channel led may be used to select the required digital output:

With the jumper in place, the output will control the on-board relay. This is a change over relay rated at 30V @2A. The switch contacts are brought to the 3-way terminal block by the relay.

With the jumper removed, the relay is not activated and the output (0/5V at up to 100mA) may be taken from the 2-way jumper pins marked +/- by the side of the appropriate relay.

### Power Supply

The **Wizard Card** will work with power supplies between 9 and 12 v DC the connection is a 2.1mm socket, centre positive.

### Other Products

Other products from our show-controller range:

|                      |   |
|----------------------|---|
| <b>Servo-Check</b>   | Simple way to calibrate/ check standard R/C servos                                      |
| <b>AutoTalk</b>      | Use sound to move a servo- useful for speech applications                               |
| <b>Animate</b>       | 4 Servos and 4 digital outputs plus 20 second speech/audio chip                         |
| <b>Puppet 1</b>      | Single servo record and playback module- up to 160 seconds action                       |
| <b>Puppet 2</b>      | As the standard Puppet board but with an additional digital output and 1A relay         |
| <b>RomCopy</b>       | Produces duplicate eeproms for the above modules- suitable for multiple applications.   |
| <b>Wizard 1</b>      | 4 Servos and 4 digital outputs-with up to 4 minutes recording time                      |
| <b>Wizard 2</b>      | Extended version of the Wizard board with 8 digital outputs- each with a 2Amp/30V relay |
| <b>Wizard 3</b>      | Controller for up to 8 servos and 8 digital outputs with 12 minutes recording time.     |
| <b>Wizard 4</b>      | 4 Digital outputs with up to 25 minutes recording time.                                 |
| <b>Wizard 5</b>      | 2 Servos (1 with Autotalk facility), 2 digital outputs and 2 minutes sound chip.        |
| <b>Digital Relay</b> | Single channel digital relay with up to 4.5 hours recording time                        |

Full details of the above products can be found on our web site or contact us for special applications.