Wizard- 3 Controller to Optional Track 1-4 Playback Set-up

REM-CH

Header PINS

Not Used

1-Pin

G-Pin

Track 1-4 Programming Selection Switches

Momentary Push Button

(OFF) ⟷ (ON)   (OFF) ⟷ (ON)   (OFF) ⟷ (ON)   (OFF) ⟷ (ON)

Toggle Switch

Toggle Switch

CH1   CH2   CH3   CH4
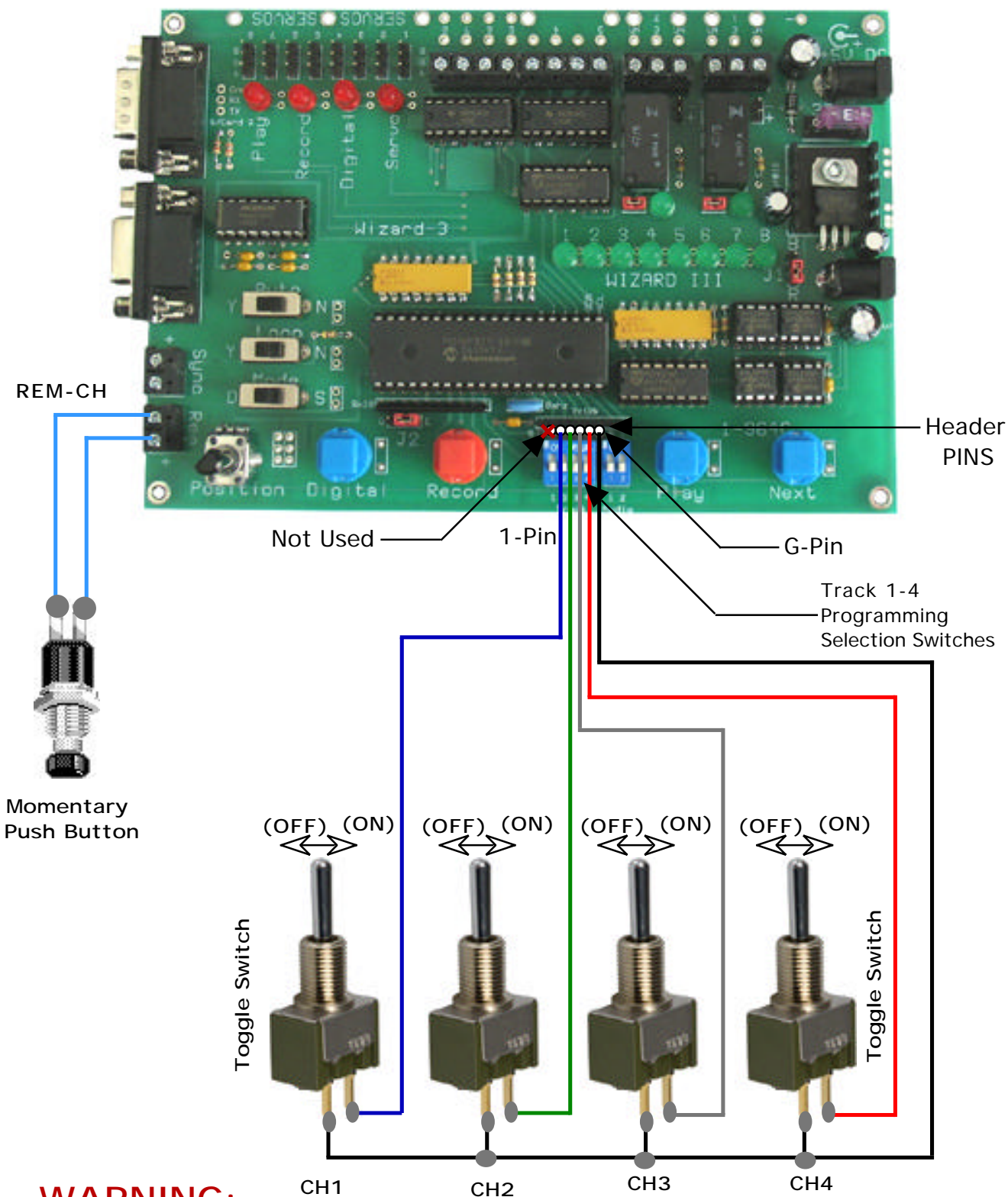
WARNING:
ONLY ONE SWITCH AT A TIME CAN BE ON

Wizard- 3 Controller to Optional
PIR 4-Ch SS Relay Sensor Set-up

03/17/09

Header PINS

Not Used

1-Pin

G-Pin

Track 1-4 Programming Selection Switches

CH1   CH2   CH3   CH4   REM-CH

PIR Sensor 4-Ch Controller

ON

OFF

S⬚⬚R

ON

PIR Sensor

Sensor Direction

PIR

- + S

PIR Sensor Connection

9 -12 VDC
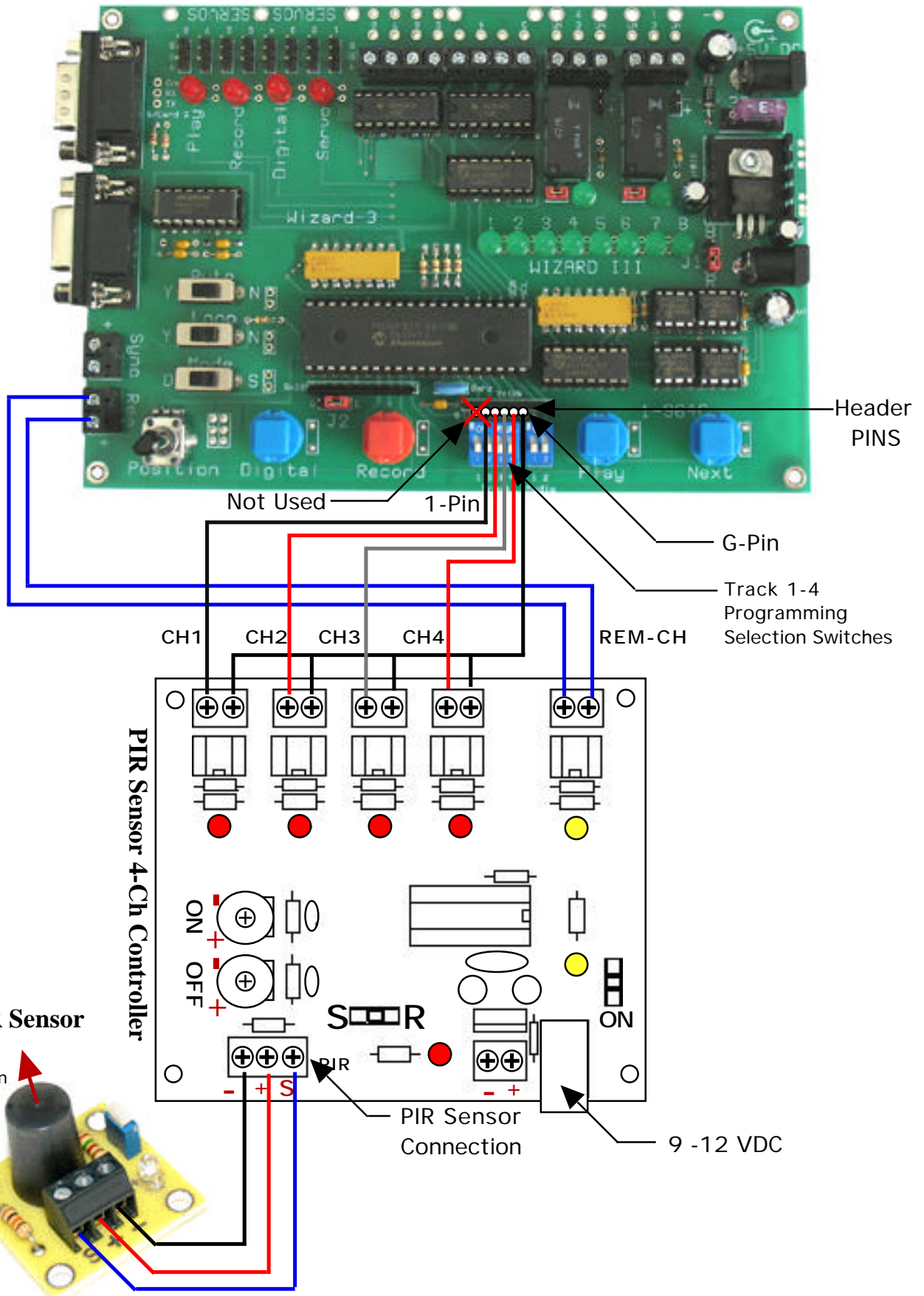
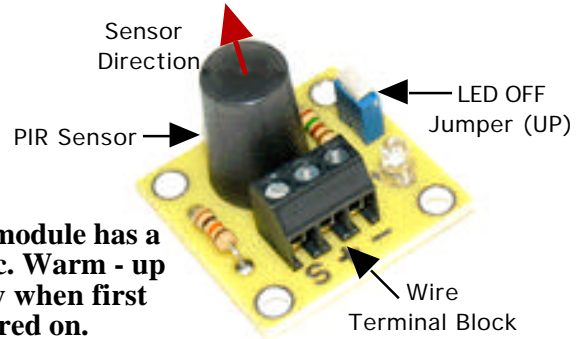# Optional PIR Sensor to 4-Channel SS Relay Controller

PIR Sensor

General Description:

This module is a pyroelectric sensor module (PIR), developed for human body detection. The PIR detector combine with a fresnel lens is mounted on a compact PCB together with an analog IC, and limited components to form the circuit.

Power, (+) , (-) Sensor / Relay connections.
9-12 Vdc power required.

Sensor Data:

Operation Voltage 5Vdc @ 300 mAmp.
Operation Current 400mA at 5V Output TTL.
PIR Input Gain 68dB.
Output Pulse Width 0.5 sec min. - Pulsed
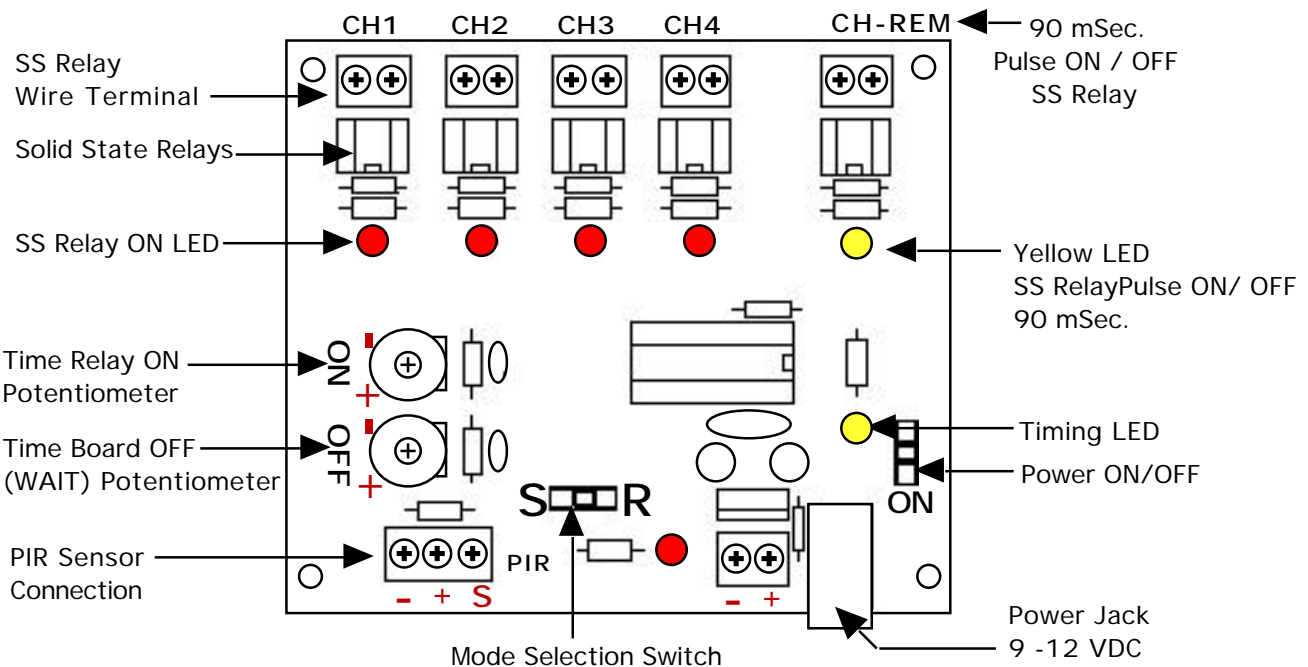Operation Temperature -20 Deg C to +50 Deg C.

Note:
PIR module has a 25 sec. Warm - up Delay when first powered on.

Sensor Direction

PIR Sensor

LED OFF Jumper (UP)

Wire Terminal Block

PIR 4-Channel SS Relay Controller

Description:

This board was designed to allow the control of 4 Solid State relays either sequentially or randomly when a single PIR sensor was activated. The SS relays are connected to the Wizard-3 track selection inputs and will select the corresponding track on the Wizard-3. The length of time that the selected relay stays ON (1 Sec to 3 Min) and then stays OFF (Waits before starting again) is controlled by 2 on-board potentiometers. When the board is triggered by the PIR, the selected relay will be activated for the time set by the ON-Time pot and the REM Relay will also be pulsed for 90 mSec, starting the Wizard-3 playback routine for the selected track. When the time expires, the relay will go OFF for the time set by the Off-Time pot (1 Sec to 10 Min). During the OFF time, a yellow LED will flash once per second until the wait time expires. This indicates that the board is in the OFF Mode and can not be re-triggered again by the PIR until the time has expired. When the board is first powered up, a 15 second period (as indicated by the Timing LED) will expire before allowing the board to be triggered by the PIR. This allows the PIR to warm up and prevents false triggering when the board is first powered ON. The board can operate in 2 different modes – Sequential and Random. The 2 modes are selected by a small slide switch on the board. When **Sequential mode** is selected, every time the board is triggered, the next relay (1-4) up will be activated. When it gets to the 4th SS relay, it will start over with the 1st SS relay. In **Random Mode**, the SS relay to be activated (1-4) is randomly picked each time the board is triggered.

CH1   CH2   CH3   CH4   CH-REM ◀ 90 mSec. Pulse ON / OFF SS Relay

SS Relay Wire Terminal

Solid State Relays

SS Relay ON LED

Yellow LED SS RelayPulse ON/ OFF 90 mSec.

Time Relay ON Potentiometer — ON +

Time Board OFF (WAIT) Potentiometer — OFF +

Timing LED

Power ON/OFF

ON

S ⊏⊐ R

PIR Sensor Connection — PIR   − + S

− +

Mode Selection Switch

Power Jack 9 -12 VDC

Using the Wizard- 3 Optional Track 1-4 Mode and Optional Switch or PIR 4-Ch Solid State Relay Board

Track Select Switch / Jumper - Set-up

The **Wizard-3 Board** will record and playback up to 4 separate tracks for up to 8 R/C type servo channels and 8 digital channels. The maximum recording time per track is **3 minutes** for multiple track operation or **6 minutes** for single track operation. The card may be connected to the optional Sound Board Pro Board to provide audio accompaniment to the tracks if needed and to the optional PIR Sensor 4-Ch Relay Control Board for automated track selection and board trigger activation.

Track Memory Erase: this will ONLY wipe the moves stored for that particular track. All other tracks will be unaffected. Set the Track select switch to ON for the required track. Hold down the Record button while applying power to the board- release the Record switch once the bar-graph LED's start to light

Track Select Switch
If you are changing from multiple to single track mode (or vice versa) it is strongly recommended that you perform a FULL memory erase before using the multitrack mode.

In multiple track mode, all the control of servos / relay actions used will only affect the currently selected track.

For single track record and playback mode (recording time up to 6 minutes)- set all track select switches to OFF
For Multiple track record: (up to 3 minutes recording time per track) set the required track to the ON position

Track 1 routine : Set track switch 1 to ON, all other track switches to OFF
Track 2 routine : Set track switch 2 to ON, all other track switches to OFF
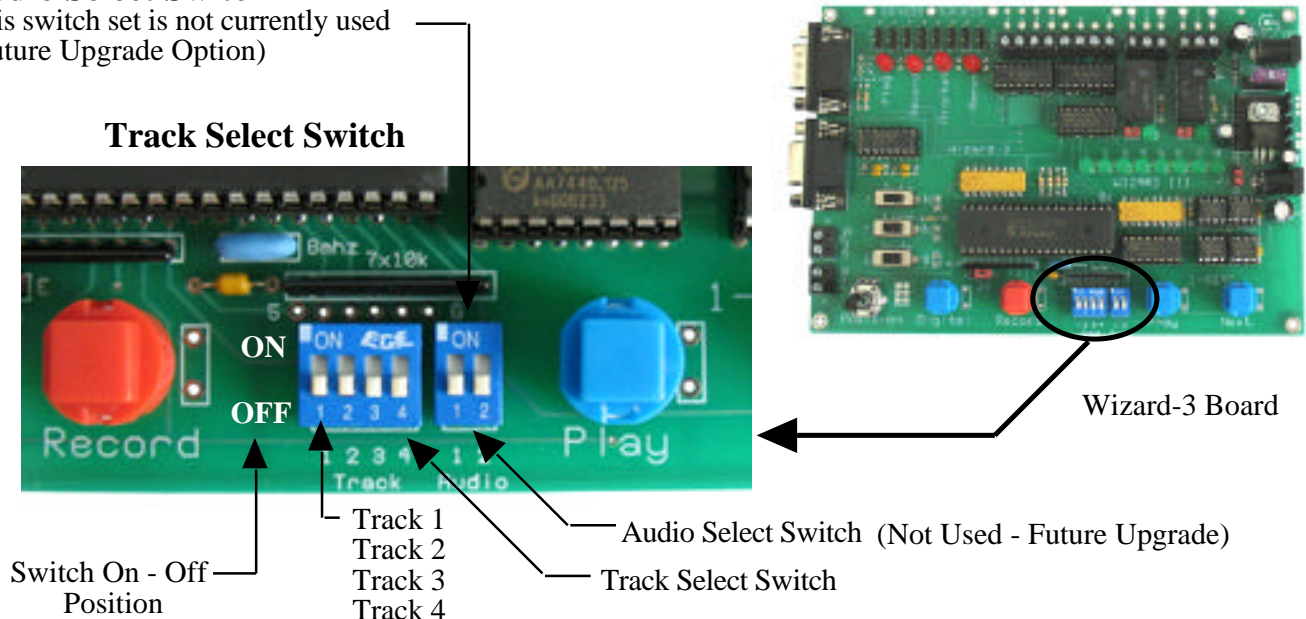Track 3 routine : Set track switch 3 to ON, all other track switches to OFF
Track 4 routine : Set track switch 4 to ON, all other track switches to OFF

For a single 6 minute programmed recording set all track switches to OFF
NOTE: To record or playback a specific track set the desired track switch to ON, others OFF

Audio Select Switch
This switch set is not currently used
(Future Upgrade Option)

Track Select Switch

Wizard-3 Board

Track 1
Track 2
Track 3
Track 4

Switch On - Off
Position

Audio Select Switch (Not Used - Future Upgrade)
Track Select Switch

Using the Wizard- 3 Track 1-4 Mode:
Programming in Track 1- Servo / Digital Program Examples

Clearing Memory / Full Memory Erase to start a new program. (Note will wipe all moves recorded)
Note: is strongly recommended when changing from single track to multiple track operation or vise versa to do an all erase to prevent any shadow recorded routines showing up. (For a single track memory erase set the Track selector switch / jumper ON for the required track section hold down the Record button while applying power to the Wizard-3 Board, release the record button once the bar-graph LED's start to light(See manual section on Track Selection for more details).
To Erase: Set all tracks to the ON position
The Enable jumper must be set at the (**E**) enabled position.
The LOOP switch and the AUTO switch must be in the "**N**" position.
The **RECORD - key** is held down during Power Up, and released after power is applied.
The LED's "1-8" will form a count down bar- graph indicating that current programmed EEPROM memory is being cleared. (This will takes approximately about 30 seconds).
After the initial 30 seconds all green LED's "1-8" will turn OFF and the current selected channel LED will turn ON, indicating the board is now ready for new programming.

Examples
1. A Short Servo Motion Recording

Servo Channel Program

If this is your first recording or you are moving from a single track mode to multiple track mode, it's recommended that you do a complete memory erase, (See erasing memory section above for instructions).
- Select the 1st (No.1) track: slide the first micro switch to the ON position. Make sure that the MODE switch has been switched to the **S**, this puts the Wizard- 3 controller into the Servo Output Mode. The Enable jumper must be set at the (**E**)
- and the LOOP and the AUTO switch must be in the "**N**" position. Power Down the Wizard-3 controller and then hold down the record key during
- re-power up, all memory will be erased (LED's will count down, aprox. 30 sec.)
- Select channel-1 by pressing NEXT-channel-key until the green number 1 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON) Rotate the Move-position-control for 4 seconds. Servo number 1 will move depending on position of MOVE-position-control motion.
- Other Servos number 2-8 may move, following moves previously recorded.
- Press and release the RECORD-key at the end of the 4 seconds to end recording.
- Select channel- 2 by pressing NEXT-channel-key until the green number 2 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON) Rotate the MOVE-position-control.
- The recording will end automatically after 4 seconds. (Set by Channel 1 Time)
- Select channel- 3 by pressing NEXT-channel-key until the green number 3 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON) Rotate the MOVE-position-control.The recording will end automatically after 4
- seconds. (Set by Channel 1 Time)
- Select channel- 4 by pressing NEXT-channel-key until the green number 4 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON) Rotate the MOVE-position-control. The recording will end automatically after 4
- seconds. (Set by Channel 1 Time)
- Press and release the PLAY-key to review sequence.

To Program the next track (2) slide the first micro switch track 1 to the OFF position and slide track, 2 micro switch to the ON position, repeat the above steps on servo recording.

To Program the next track (3) slide the second micro switch track 2 to the OFF position and slide track, 3 micro switch to the ON position, repeat the above steps on servo recording.

To Program the next track (4) slide the third micro switch track 3 to the OFF position and slide track, 4 micro switch to the ON position, repeat the above steps on servo recording.

Using the Wizard- 3 Track 1-4 Mode:
Programming in Track 1- Servo / Digital Program Examples

Examples
2. A Short Digital Output Recording

Digital
Channel
Program

- Select the 1st (No.1) track: slide the first micro switch to the ON position.
- Make sure that the MODE switch has been switched to the **"D"** this puts the Wizard- 3 controller into the Digital Output Mode. The Enable jumper must be set at the (**E**) and the LOOP and the AUTO switch must be in the "**N**" position
- Select channel-1 by pressing NEXT-key until the green number 1 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON)
- Press and hold the Digital-key for 4 seconds.
  Other Digital Channels may activate from previously recorded events.
- Release the Digital-key and then press and release the RECORD-key at the end of the 4 seconds to end recording.
- Select channel- 2 by pressing NEXT-key until the green number 2 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON)
- Press and release multiple times, or hold the Digital-key for 4 seconds. The recording will end automatically after 4 seconds. (Set by Channel 1 Time)
- Select channel- 3 by pressing NEXT-key until the green number 3 LED is lit.
- Press and release the RECORD-key. (Record LED will turn ON)
- Press and release multiple times, or hold the Digital-key for 4 seconds. The recording will end automatically after 4 seconds. (Set by Channel 1 Time)
- Select channel- 4 by pressing NEXT-key, repeat the record and activate sequence.
- Press and release the PLAY-key to review the recorded digital output sequence.

To Program the next track (2) slide the first micro switch track 1 to the OFF position and slide track, 2 micro switch to the ON position, repeat the above steps on digital recording.

To Program the next track (3) slide the second micro switch track 2 to the OFF position and slide track, 3 micro switch to the ON position, repeat the above steps on digital recording.

To Program the next track (4) slide the third micro switch track 3 to the OFF position and slide track, 4 micro switch to the ON position, repeat the above steps on digital recording.

NOTE: To playback a programmed track, select that track number, and slide the micro switch for that track number to ON, all the other tracks need to be OFF, Pressing the playback button or triggering the board for playback will activate the selected track chosen.

If a single routine is being recorder and no multitrack routines will be used, all the micro switches can be in the OFF position. Track 1 is the default track automatically

NOTE: Always Program Channel 1 / Track 1 first to set EEprom Recording time line.

Using the Wizard- 3 Track 1-4 Mode:
Programming in Track 1- Servo / Digital Program Examples

MAKING A PROGRAM CHANGE TO A <u>SINGLE SERVO CHANNEL in Track 1</u>

Examples

**Servo
Channel
Program**

4. Making a Programming change for Servo Channel 4 in Track 1
- Select the 1st (No.1) track: slide the first micro switch to the ON position.
- Make sure tracks 2-4 are in the OFF positions
- Make sure that the MODE slide switch has been switched to the **S**, this puts the
- Wizard-3 controller into the Servo Output Mode. The Enable jumper must be set
  at the (**E**) and the LOOP and the AUTO switch must be in the "**N**" position .
- Select Servo channel "4" by pressing NEXT-key until green LED "4" is ON.
- Press and release the RECORD-key. (The red LED will light, indicating
  record mode is active)
- Rotate MOVE-position-control.
  Recording will end when EEprom memory is full.
  (During recording the green channel LED's may form a bar-graph indicating
  the amount of time being used automatically).
- Press and release the PLAY-key to review the recorded sequence.
  Recorded Servos and Digital channels will activate

*Note: Servo "1, 2, 3, 5, 6, 7 and 8" and Digital outputs "1-8" will be active from
previous recorded positions to aid in synchronization, and servo "4" will move as
POSITION- control is rotated.)
(The selected channel (4) recording will end automatically based on the Start to
Stop recorded time entered for servo channel "1" initially).
(Channel -1 sets the time available for each channel)*

MAKING A PROGRAM CHANGE TO A <u>SINGLE DIGITAL CHANNEL in Track 1</u>

Examples

**Digital
Channel
Program**

5. Making a Programming change for Digital Channel 2 in Track 1
- Select the 1st (No.1) track: slide the first micro switch to the ON position.
- Make sure tracks 2-4 are in the OFF positions
- Make sure that the MODE slide switch has been switched to the **"D"** this puts the
- Wizard-3 controller into the Digital Output Mode. The Enable jumper must be set
  at the (**E**) and the LOOP and the AUTO switch must be in the "**N**" position .
- Select Servo channel "2" by pressing NEXT-key until green LED "2" is ON.
- Press and release the RECORD-key. (The red LED will light, indicating
  record mode is active)
- Press, Release or Hold the Digital-key as needed.
  Recording will end when EEprom memory is full.
  (During recording the green channel LED's will form a bar-graph indicating
  the amount of time being used.)
- Press and release the PLAY-key to review the recorded sequence.
  Recorded Servos and Digital channels will activate