STEREOSWITCH

3 INPUT STEREO AUDIO SWITCHER

DESCRIPTION

StereoSwitch is a three-input stereo audio switcher. It accepts up to three stereo balanced audio sources, selecting one source that is routed to the stereo balanced output. It can be used as a line-level audio source selector, or "in reverse" as an audio router, sending an audio source to one of three destinations. Audio switching is via sealed relays; there is no active circuitry in the audio path. The unit can be controlled by any switch or contact closure, TTL/CMOS logic, or DC voltage. Internal power-up programming permits the user to determine which input is automatically selected when AC is applied. An optional Auto-Return mode automatically selects Input #1 if no other input is selected. Tally outputs are provided to drive remote status LEDs. Inputs that are not selected can be automatically terminated.

INSTALLATION

All audio inputs and outputs are connected via plug-in eurblocks connectors. Remove about 1/8" of insulation, insert wire into the plug, and tighten the screw. Be sure that no bare wires are exposed.

Connect all audio inputs and outputs to the appropriate connectors. For best performance, audio circuits should be at professional line level, low impedance and balanced.

StereoSwitch can be controlled with any contact closure, open-collector, or by applying a DC voltage (5 - 24 VDC) from an external source, e.g., the TTL-level output of a computer interface or a logic circuit. Control inputs can be either momentary or maintained.

Control logic programming: Before connecting control inputs, the user must determine the type of control that will be used, and configure internal programming jumpers accordingly. There are 3 Control inputs, one for each audio source. Each Control input can be set to accept one of 3 types of control input: (1) a contact closure that switches to <u>ground</u>, (2) a contact closure that switches to a <u>positive voltage,</u> or (3) a DC voltage between 5 and 24 VDC.

The programming jumpers are located within the unit just behind the front panel. They and are marked JP1, JP2, and JP3, for Control inputs #1, #2 and #3. Each set of programming jumpers has pin-pairs labeled **A, B, and P.**

To configure an input for control via **any circuit that switches to a positive voltage, or to control by applying a DC voltage:** Install two jumpers in the **A** positions. To configure an input for control via **any circuit that switches to ground:** Install two jumpers in the **B** positions. (StereoSwitch is shipped with this configuration preset.)

Connect Control inputs via the 9-pin D connector as follows:

Pin 1	Control #1 input	Pin 4	Ground	Pin 7	Tally #1 output
Pin 2	Control #2 input	Pin 5	+12 VDC source	Pin 8	Tally #2 output
Pin 3	Control #3 input	Pin 6	Remote Disable	Pin 9	Tally #3 output

Connect all control input signals between pin 4 (ground) and the desired Control input pin. For open-collector interface, connect the <u>emitter</u> to pin 4 (Ground), and connect the open-collector to the appropriate Control input.

Power-up programming: Each set of programming jumpers has a **P** option to set the power-up programming. The input that is selected with the **P** jumper will be automatically selected upon power-up. Install a **P** jumper in **one input only.** StereoSwitch is shipped from the factory with the Input #1 **P** jumper set for power-up.

Auto-Return mode: StereoSwitch can be configured to <u>return to Input #1</u> if no other input is selected. This would be applicable if external equipment provides a *maintained* closure when switching should occur, and the *release* of this closure is used to <u>return to input #1</u>. To use the Auto-Return mode, 4 components must be installed on the StereoSwitch PC board: Two 1N4004 diodes (D6, D7), one 10K resistor (R3), and one 35uf/25v capacitor (C2). Install these components on the PC board where indicated. Observe polarity.

To use the Auto-Return mode, ALL Control inputs **must be configured for ground-closure use,** with jumpers in the **B** positions. Control inputs to #2 and/or #3 must be ground closures. Connect between pin 4 (ground) and the appropriate Control input. DO NOT connect anything to Control input #1 (pin 1).

When either Input #2 or #3 is selected with a *maintained* closure, StereoSwitch will switch to that input. When the closure is *released,* StereoSwitch will return to Input #1.

StereoSwitch provides TALLY outputs to drive external indicator LEDs. The Tally outputs are open collectors, which go LOW when the input is active. Connect status LEDs between each TALLY output and +12V (pin 5) on the D connector.
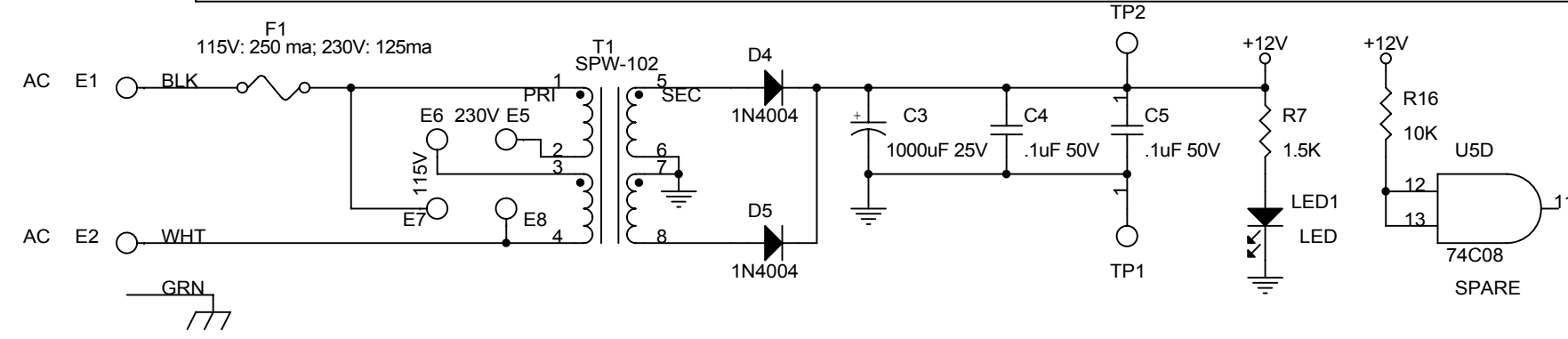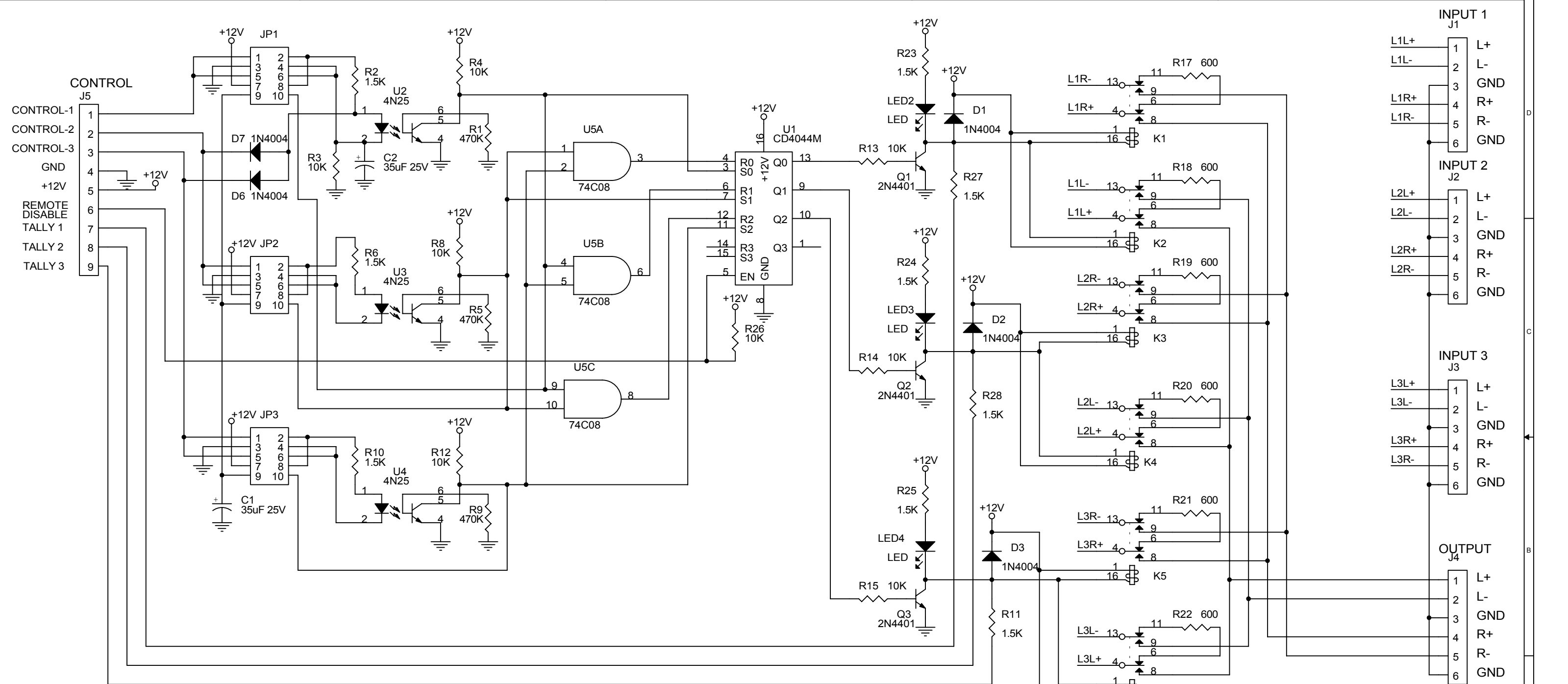
Termination: StereoSwitch is supplied with terminating resistors installed. Inputs that are not selected are terminated with 600 ohms. To defeat this feature, remove the terminating resistors:
INPUT #1: R17, R18   INPUT #2: R19, R20   INPUT #3: R21, R22

OPERATION
Operation is straightforward. Activating any control input will select the corresponding audio source. Switching always occurs at the leading edge the control input. Only one source can be selected at a time. Do not "overlap" control inputs; doing so will lock-out all audio sources. The tally lights on the StereoSwitch front panel indicate which input source is active. Remote Tally indicators will follow these lights.

Remote Disable: If the REMOTE DISABLE input (pin 6) is connected to GROUND (pin 4), ALL inputs will be OFF; no audio will be sent to the OUTPUT terminals. When the ground connection is released, the input previously active will return ON. Note that input selection is still active even if the DISABLE function is used.

SCHEMATIC: STEREOSWITCH

CONTROL J5
- CONTROL-1 — 1
- CONTROL-2 — 2
- CONTROL-3 — 3
- GND — 4
- +12V — 5
- REMOTE DISABLE — 6
- TALLY 1 — 7
- TALLY 2 — 8
- TALLY 3 — 9

INPUT 1 J1
- L1L+ — 1 L+
- L1L- — 2 L-
- 3 GND
- L1R+ — 4 R+
- L1R- — 5 R-
- 6 GND

INPUT 2 J2
- L2L+ — 1 L+
- L2L- — 2 L-
- 3 GND
- L2R+ — 4 R+
- L2R- — 5 R-
- 6 GND

INPUT 3 J3
- L3L+ — 1 L+
- L3L- — 2 L-
- 3 GND
- L3R+ — 4 R+
- L3R- — 5 R-
- 6 GND

OUTPUT J4
- 1 L+
- 2 L-
- 3 GND
- 4 R+
- 5 R-
- 6 GND

JP1, JP2, JP3

U2 4N25, U3 4N25, U4 4N25

U5A 74C08, U5B 74C08, U5C 74C08, U5D 74C08 SPARE

U1 CD4044M — R0 S0, R1 S1, R2 S2, R3 S3, EN, GND, Q0 13, Q1 9, Q2 10, Q3 1, +12V 16, GND 8

Q1 2N4401, Q2 2N4401, Q3 2N4401

LED2, LED3, LED4, LED1

D1 1N4004, D2 1N4004, D3 1N4004, D6 1N4004, D7 1N4004, D4 1N4004, D5 1N4004

Relays: K1, K2, K3, K4, K5, K6

Resistors:
- R1 470K, R2 1.5K, R3 10K, R4 10K, R5 470K, R6 1.5K, R7 1.5K, R8 10K, R9 470K, R10 1.5K, R11 1.5K, R12 10K, R13 10K, R14 10K, R15 10K, R16 10K, R17 600, R18 600, R19 600, R20 600, R21 600, R22 600, R23 1.5K, R24 1.5K, R25 1.5K, R26 10K, R27 1.5K, R28 1.5K

Capacitors:
- C1 35uF 25V, C2 35uF 25V, C3 1000uF 25V, C4 .1uF 50V, C5 .1uF 50V

F1 115V: 250 ma; 230V: 125ma

T1 SPW-102 (PRI / SEC)
- AC E1 BLK
- AC E2 WHT
- GRN
- E6 230V E5, E7 115V, E8

TP1, TP2

NOTE: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE 1/4W, 5%.

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