SimpleIO™

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# TriacOut4

1799-001-xx

This 4-channel triac output board has everything you need for just about any AC output interfacing. The board features an optoisolated triac per channel, providing a 4-point solid-state-relay circuit for AC control. It has terminal block connectors, a fuse with snap-in cover/holder for easy replacement, and optoisolators and triacs to drive each output point.

**Package Contents:**

- Description and Specifications
- Schematic
- Assembly Drawing
- Bill of Material
- Warning Statement

Thank you for your interest in our SimpleIO products, and we hope your project is successful. If you have any questions, comments, or suggestions, we're happy to help. We would appreciate any reviews or comments you wish to email or post on your favorite forums. Let us know what you think!

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**TriacOut4 Description**
The triac output board has inputs common to all channels, and an output circuit for each channel. The individual channels are a circuit made up of a logic input connector, optoisolator, triac, and AC output connector.

The logic input has connectors with a pin for a common 5 VDC supply, and a pin for each channel. Enable an output by sinking the input pin to ground. There are two connectors in parallel, a terminal block and right-angle header, for flexibility with wiring or board-to-board connections.

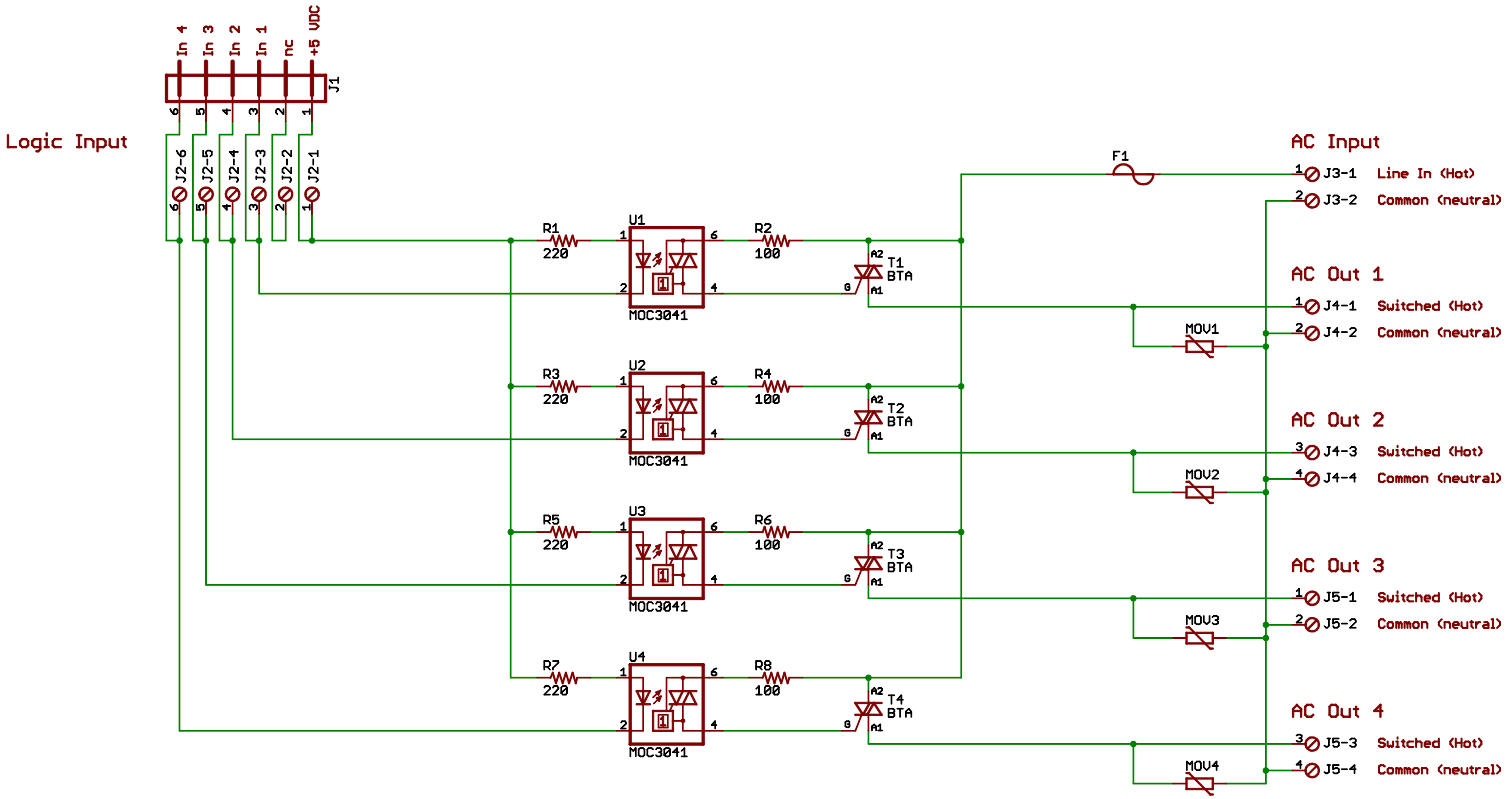
The inputs connect to a zero-crossing optoisolator for each channel, with triac driver outputs. The optoisolators drive the triacs, switching the AC input to the output connectors. The triacs are lined up on one side of the board, to make it easy to connect to a heat sink. They have isolated tabs to avoid making the heat sink live. Each triac is spec'ed for 8A, but typically limit each channel to 1A at 120 VAC.

The AC input is a 2-pin connector, and a fuse with a snap-in cover/holder for easy replacement. The AC output connectors are 2-pin pairs for each channel, with pins for the switched and common (hot and neutral) for wiring convenience.

The wiring connectors are terminal blocks, to balance convenience and cost. The connectors are placed in consistent locations among all the SimpleIO triac output boards, extending the number of pins and connectors based on the number of channels. For your flexibility, we also have a no-connector version of the board without the terminal blocks, for assembling with your specific style of connectors.

The board also has locations to solder MOVs or other snubber components, if driving inductive loads. The footprint on the board avoids having to wire them onto the connectors.

**Specifications**
- 4 opto-isolated Triac AC output points.
- Triacs: 8A max, typically for 1A, 120 VAC on each point.
- Optoisolators: zero-crossing, triac-driver, 120/240VAC typical, input +5 VDC at 15 mA.
- Logic input: Supply +5 VDC, ground each point to enable.
- Connectors:
    - Logic input right-angle header on 0.1" centers.
    - Logic input terminal block on 0.1" centers.
    - AC input and output terminal blocks on 0.2" centers.
    - AC outputs have hot and neutral pins for each channel.
- Fuse: 6A common to all outputs, 5x20mm in a snap-in holder.
- MOV footprint, for driving inductive loads.
- PC Board: 2-sided, 0.062", with solder-mask and silkscreen.
- 3.5" long x 2" wide. Height of triacs are less than 1".






| | | |
|---|---|---|
| B | 11/01/2004 | Production release.<br>Change pull-ups to 220 ohm.<br>No board change. Still A. |
| A | 10/20/2004 | Production release.<br>Add logic header.<br>Rename opto to MOC3041. |
| A2 | 08/25/2004 | Small resistors, no pin 2 tp,<br>trace clearance |
| A1 | 08/24/2004 | Initial version |

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SimpleI/O - TriacOut4

TITLE: TriacOut4

Document Number: 1799-001-xx REV: B

Date: not saved! Sheet: 1/1

## Notes:

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1. Assy part number 1799-001-xx. See order and BOM for specific -xx assembly.
2. Not all parts are populated. See specific -xx BOM for parts list.
3. Leave white silkscreen part number blocks blank.

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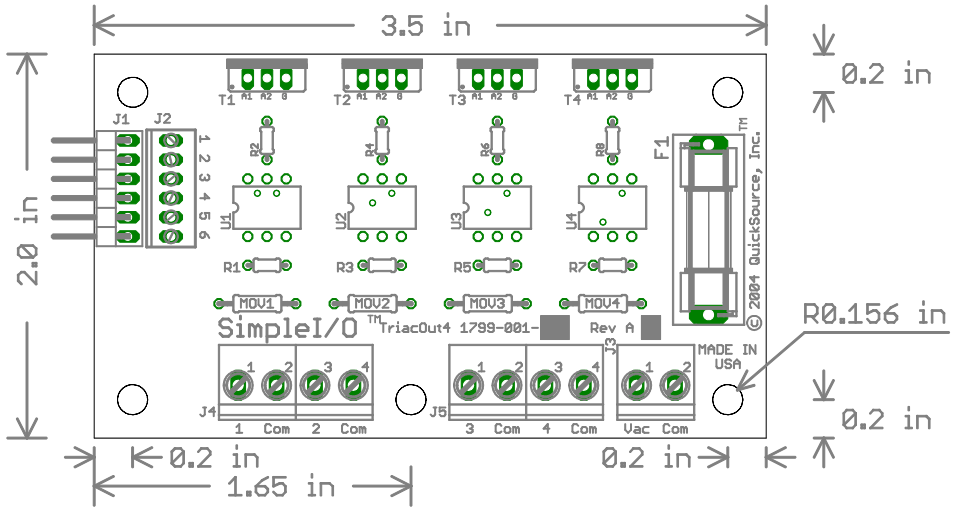


B 11/01/2004
Change R1,3,5,7 values.
Board still rev. A


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SimpleI/O - TriacOut4-xx

TITLE: TriacOut4-xx

Document Number: 1799-001-xx

REV: B

Date: 11/01/2004

# Simple I/O

**QuickSource, Inc.**
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## Bill of Material

| Product Name | Part No. | Version | Date |
|---|---|---|---|
| **TriacOut4** | **1799-001-01** | **B** | 11/1/2004 |

| Description | Part No. | Mfr | Mfr No. | Qty Each | Ref Des |
|---|---|---|---|---|---|
| PCB, TriacOut4 | 1700-001 | QuickSource | | 1 | |
| Conn, Header, 0.100, 6-pin, Rt Angle | 2100-002 | Samtec | TSW-106-08-T-S-RA | 1 | J1 |
| Conn, Term Block, MPT, 0.100, 6-pin | 2150-001 | Phoenix Contact | 1725698 | 1 | J2 |
| Conn, Term Block, MKDSN, 0.200, 2-pin | 2150-002 | Phoenix Contact | 1729128 | 1 | J3 |
| Conn, Term Block, MKDSN, 0.200, 4-pin | 2150-003 | Phoenix Contact | 1729144 | 2 | J4-J5 |
| IC, Opto, triac, zero-crossing, 15mA, 400V | 3130-001 | Fairchild | MOC3041M | 4 | U1-U4 |
| Fuseholder, 5x20, PC mount | 4300-001 | Keystone | 4527 | 1 | F1 |
| Fuseholder, 5x20, cover | 4300-002 | Keystone | 4527C | 1 | F1 |
| Fuse, 5x20, 250V, 6.3A | 4300-003 | Littlefuse | 21706.3 | 1 | F1 |
| Resistor, 100, 5%, mini | 4700-001 | Panasonic | ERDS2TJ101V | 4 | R2, R4, R6, R8 |
| Resistor, 220, 5%, mini | 4700-003 | Panasonic | ERDS2TJ221V | 4 | R1, R3, R5, R7 |
| Triac, 8A, 400V, insulated | 4800-002 | STMicroelectronics | BTA08-400B | 4 | T1-T4 |
| Unpopulated | | | | | MOV1, MOV2, MOV3, MOV4 |

**NOTE:**
This is a reference Bill of Material for a TriacOut board.
These parts are just suggestions for how the assembled boards may be produced.
Please use this as a reference, but evaluate parts and assemble the boards as you see fit, and at your own risk.

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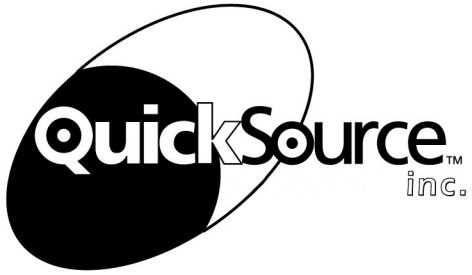


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