

SimpleIO™  
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## TriacOut12

1799-003-xx

This 12-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 12-point solid-state-relay circuit for AC control, perfect for an octave. It has terminal block connectors, a fuse with snap-in cover/holder for easy replacement, and optoisolators and triacs to drive each output point. Connector and drive options provide a flexible interface to control systems.

### 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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## **TriacOut12 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.

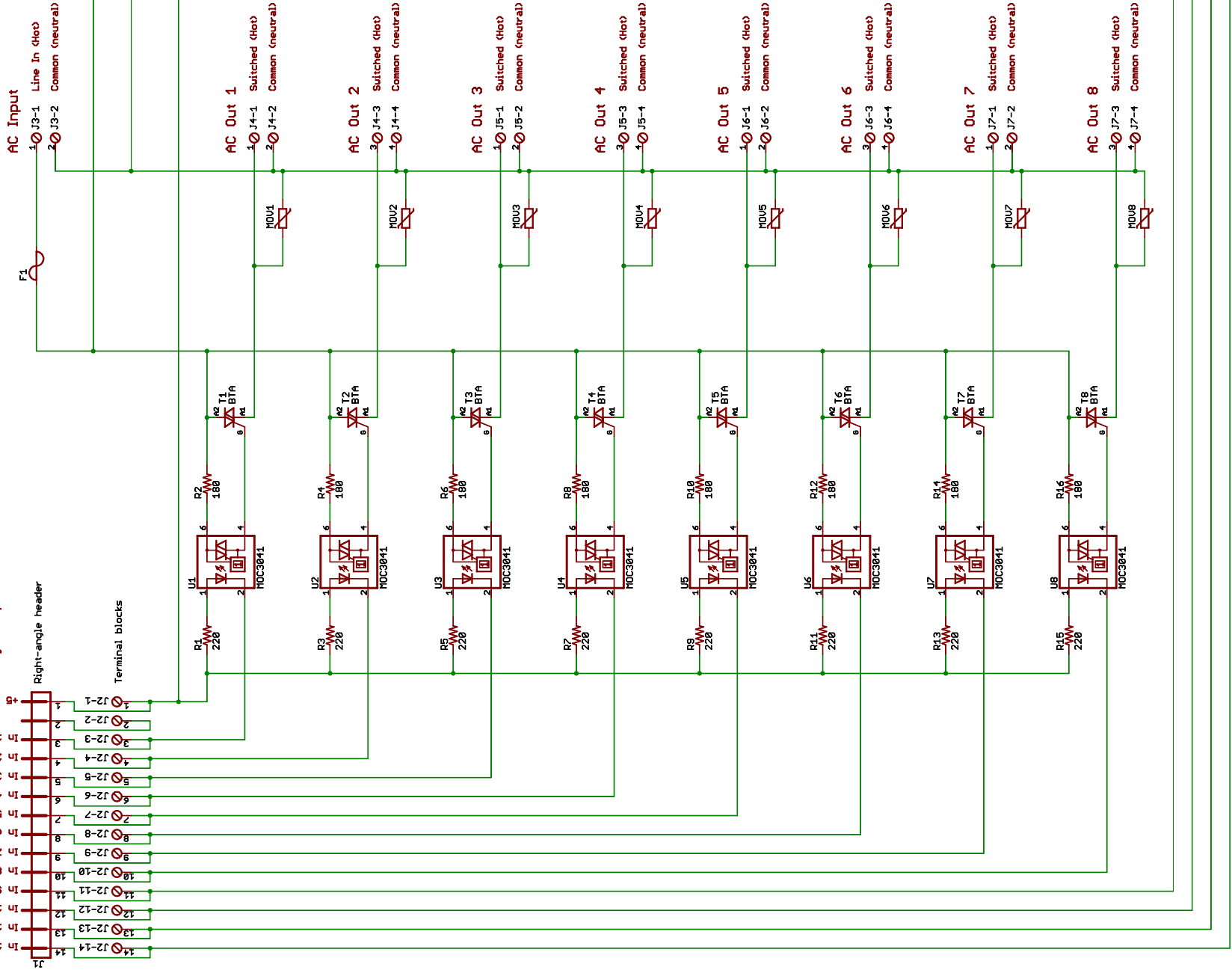
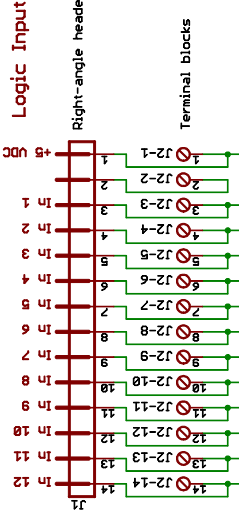
The AC input is a 2-pin connector, and a fuse with a snap-in cover/holder for easy replacement. The AC output connectors are 2-pin pairs for each channel, with pins for the switched and common (hot and neutral) for wiring convenience.

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**

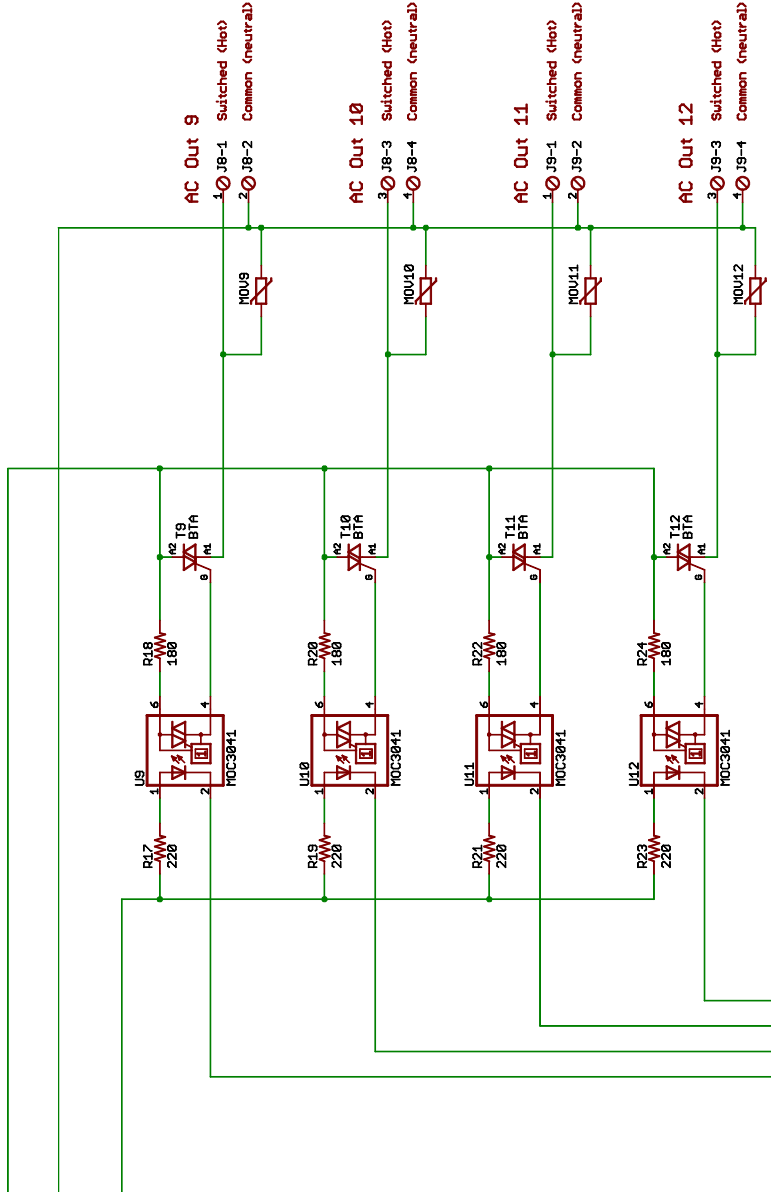
- 12 opto-isolated Triac AC output points.
- Triacs: 8A max, typically for 1A, 120 VAC on each point.
- Optoisolators: zero-crossing, triac-driver, 120/240 VAC typical, input +5 VDC at 15 mA.
- Logic input: Supply +5 VDC, ground each point to enable.
- Connectors:
  - Logic input right-angle header on 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: 10A 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.
- 8.5" long x 2" wide. Height of triacs are less than 1".



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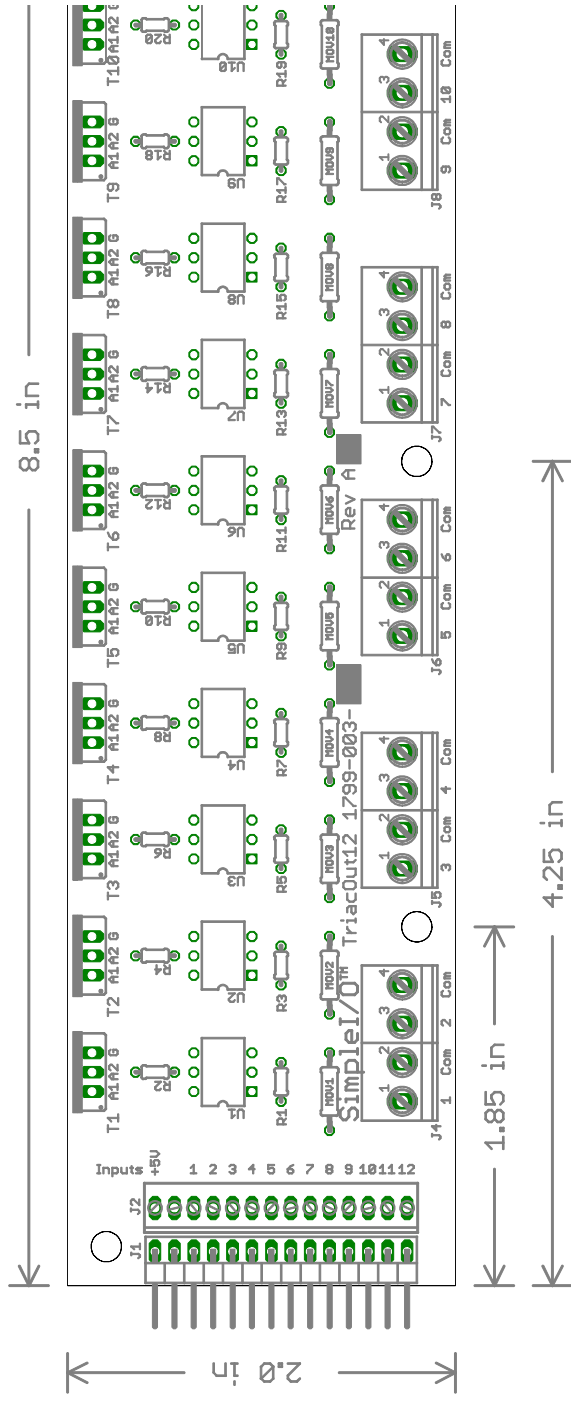
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A	05/31/2005	Initial version. Merge of TriacOut4 B, TriacOut8 A. Single pullup, sink only, MOC3041, 180 ohm gate resistor, No RJ45.
<b>SimpleI/O - TriacOut12</b>		
TITLE: TriacOut12		
Document Number:	1700-003 / 1799-003-XX	REV: A
Date:	05/31/2005	Sheet: 1/1

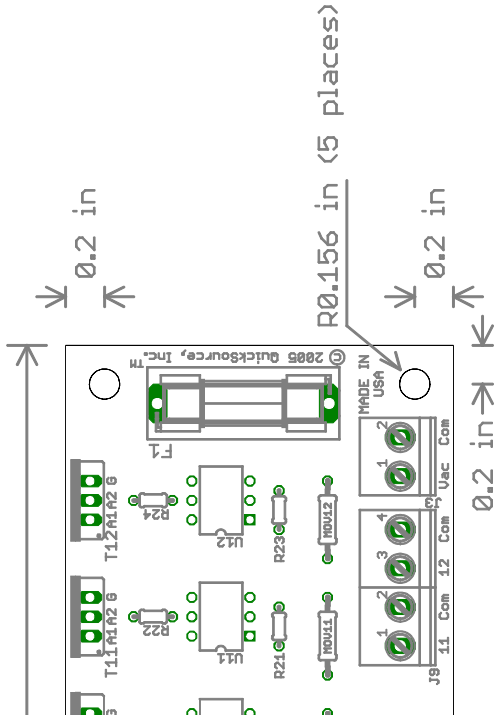
## Notes:

1. Assy part number 1799-003-xx. See order and BOM for specific -xx assembly.
  2. Not all parts are populated. See specific -xx BOM for parts list.
  3. Leave the assembly -xx number and revision letter boxes blank until shipping.
  4. J2 is made up of three connectors: 6-pin, 4-pin, and 4-pin for availability and common i
- The fit is not exact, due to outside plastic edges. Install all three before soldering, st



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Inventory parts.  
 starting with center connector.



A	05/31/2005	Initial version. Merge of TriacOut4 B, TriacOut8 A. Single pullup, Sink only, no RJ45.
QuickSource, Inc. mailing address: Phone: 858-268-2841 5663 Balboa Ave. #377 Fax: 661-885-9549 San Diego, CA 92111 support@quicksource.com		SimpleI/O - TriacOut12-xx TITLE: TriacOut12-xx
Document Number: 1799-003-xx		REV: A
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# Simple I/O

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## Bill of Material

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Product Name	Part No.	Version	Description	5/31/2005	
<b>TriacOut12</b>	<b>1799-003-01</b>	<b>A</b>	TriacOut12 full assembly.		
Description	Part No.	Mfr	Mfr No.	Qty Each	Ref Des
PCB, TriacOut12	1700-003	QuickSource		1	
Conn, Header, 0.100, 14-pin, Rt Angle	2100-004	Samtec	TSW-114-08-T-S-RA	1	J1
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	6	J4-J9
Kit, Conn, Term Block, MPT, 0.100, 14-pin	2157-006			1	J2
Conn, Term Block, MPT, 0.100, 6-pin	2150-001	Phoenix Contact	1725698	1	Connector made up of three individual connectors
Conn, Term Block, MPT, 0.100, 4-pin	2150-004	Phoenix Contact	1725672	2	
IC, Opto, triac, zero-crossing, 15mA, 400V	3130-001	Fairchild	MOC3041M	12	U1-U12
Fuseholder, 5x20, PC mount	4300-001	Keystone	4527	1	F1
Fuseholder, 5x20, cover	4300-002	Keystone	4527C	1	F1
Fuse, 5x20, 125V, 10A	4300-004	Bussman	GMA-10	1	F1
Resistor, 220, 5%, mini	4700-003	Panasonic	ERDS2TJ221V	12	R1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23
Resistor, 180, 5%, mini	4700-004	Panasonic	ERDS2TJ181V	12	R2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24
Triac, 8A, 400V, insulated	4800-002	STMicroelectronics	BTA08-400B	12	T1-T12
<b>Unpopulated</b>					
MOV / Snubber pads					MOV 1-12

### 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.

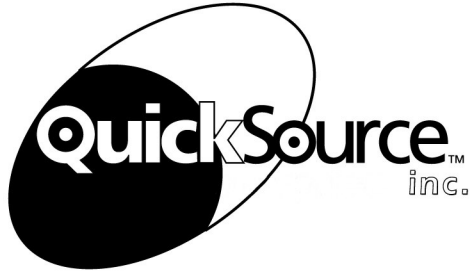
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