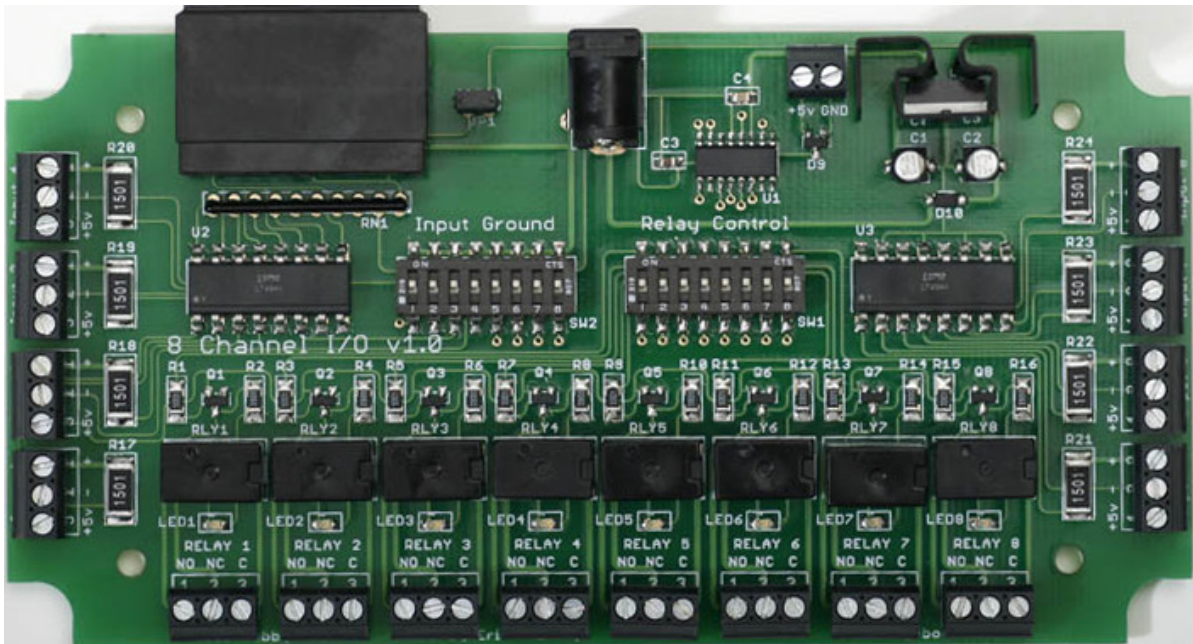




**HOBBY
BOARDS**
Complete 1-Wire Solutions



8 Channel I/O

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Thank you for your interest in Hobby Boards' 8 Channel I/O device. We hope that you will find this device to be a useful addition to your 1-Wire network.

Description

Hobby Boards' 8 Channel I/O device allows your 1-Wire system to control a total of eight channels which can be configured as any combination of eight inputs or outputs. In other words, this device supports up to eight relays, which in turn can control external systems such as sprinklers, garage doors, coffee maker, etc. In addition, this device offers the ability to accept up to eight external inputs such as from magnetic door contacts.

Features

- Eight I/O channels
 - Up to eight input channels
 - Up to eight SPDT relays
- External inputs can also be used to directly activate the relays
- Dual RJ45 jacks for easy connectivity to your 1-wire network
- Simple, flexible wiring options

Optional 4-relay 4-input version

- Also available in a four relay , four input version
- Still supports eight channels, but only provides four input connectors and four relays
- All other features remain the same

Technical Specs

Controller Chip

- The Hobby Boards' 8 Channel I/O uses the Dallas DS2408 1-Wire chip.

Connections

- 1-Wire connections are made through a dual RJ45 jack with pass-through capability.
- Power is supplied through a 2.1mm center pin positive power connector.
- Inputs and outputs are connected through screw terminals.
- 2 pin screw terminal provides +5v DC and ground connections.

Outputs

- The 8 Channel I/O device uses SPDT relays with normally open and normally closed connections.
- The relays are rated for 60W and 62.5VA which is 2A @ 30VDC or 0.25A @ 250VAC.
- Each output has an LED to indicate relay state.
- Each output has 3 connections

- Common (marked C on the board)
- Normally Open (marked NO on the board)
- Normally Closed (marked NC on the board)

Inputs

- All inputs are opto-isolated and accept AC or DC voltages.
- Inputs are rated from 5 volts to 34 volts AC or DC.
- Each input has 3 connections (for more information on input connections see the operation section)
 - Positive (marked + on the board)
 - Negative (marked – on the board)
 - +5v (marked +5v on the board)

Power Requirements

- The maximum power draw is @250mA at +5v DC.

Operation

Connecting Outputs

Each relay can be connected to be normally open, normally closed, or both.

- For a normally open relay, connect one lead to the common screw terminal marked “C”, and connect the other lead to the normally open screw terminal marked “NO”.
- For a normally closed relay, connect one lead to the common screw terminal marked “C”, and connect the other lead to the normally closed screw terminal marked “NC”.
- In some cases, you may want a single relay to connect one circuit while also disconnecting another circuit. In this case, the relay can be connected as both a normally open and normally closed relay following the instructions above.

The 8 Channel I/O supports eight channels of input or output. By default all eight output relays are enabled. If a channel is used for input the output relay can be disabled by sliding the appropriately numbered relay control DIP switch (marked “Relay Control”) to the off position. If desired, the relay can be enabled when using the input so that the relay will be automatically energized when the input goes high, without using the 1-Wire controls.

Each relay has an adjacent LED. This LED lights up to indicate when a relay is energized.

Connecting Inputs

The 8 Channel I/O supports either powered or non-powered input channels.

To connect a non-powered input channel, connect one lead in the positive screw terminal (marked “+”), and the other lead in the powered screw terminal (marked “+5v”).

- The appropriately numbered input ground DIP switch (marked “Input Ground”) must be turned to the on (or up) position.

To connect a powered input channel, connect one lead in the positive screw terminal (marked “+”), and the other lead in the negative screw terminal (marked “-”).

- Either AC or DC can be connected, with no external components necessary.
- For normal operation, polarity does not matter.
- The appropriately numbered input ground DIP switch (marked “Input Ground”) must be turned to the off (or down) position.

Input Ground: This device has a convenience feature, which will optionally tie the negative screw terminal (marked “-”) to ground. While this feature can simplify wiring, it can cause problems particularly in externally powered DC circuits when connections are inadvertently reversed. By default, the input ground switches are on.

Connecting 1-Wire and Power

To connect the 8 Channel I/O device to your 1-Wire network, simply use a standard network cable and connect to the provided RJ45 jack. The second jack is provided to allow pass-through connections. The two jacks can be connected interchangeably.

The 8 Channel I/O should be powered locally using the 2.1mm center positive input. Alternatively, it can get its power from the RJ45 jack. When locally powered, the 8 Channel I/O will supply power to other nearby devices. If this operation is not desired then JP1 should be removed.

When power is applied to the 8 Channel I/O, all relay outputs default to off.

Software Requirements

The 8 Channel I/O is compatible with software which supports the DS2408 1-Wire chip. Please note that this is a different configuration than the precursor, Hobby Boards 4 Channel Relay device (no longer sold), which used four DS2405 1-Wire chips.