

The ANY-maze Relay interface



Overview

The ANY-maze Relay interface has 6 output ports which can be used to turn things on and off under software control. For example, an output could switch on a shocker, turn on a light or activate a pellet dispenser.

Ports

- Six independent ports.
- Each port uses a *solid state relay*. A relay is a simple on/off switch (like a light switch) which can be activated and deactivated electronically. Solid state relays have no mechanical parts and make no noise (which could otherwise act as a cue to animals).
- Each port can switch up to 42 volts (AC or DC) at up to 2A. This is sufficient to control most equipment, except for devices that are mains-powered.
- Ports use pluggable screw terminal blocks for easy connection.

Uses

- Switch a light on and off.
- Switch a speaker on and off.
- Shockers with 'remote control' inputs can be turned on and off by connecting the input to a relay port.
- Many pellet dispensers have a 'dispense' input which, when briefly connected to the dispenser's power line, cause a pellet to be dispensed. The dispensing of pellets can therefore be controlled by connecting the 'dispense' input and power to the relay port.

Power input and output

- The interface includes a power input connector. Pins 1 and 2 of this connector are routed to pins 1 and 4 of all the port connectors.
- This power input/output feature can significantly simplify wiring when connecting to devices such as pellet dispensers.

Technical specification

Connection to PC	
Connection type	USB (USB1.1, USB2.0, USB3.0 compatible)
Power	Powered from USB
Maximum current drawn from USB	200mA
Connection indication	LED: Red=Powered; Green=Communicating (note 1)
Ports	
Number of channels	6
Connector	Pluggable screw terminal block
Relays	
Type	Solid state
Maximum voltage across inputs	42V AC or DC
Output isolation	5300 V _{RMS}
Maximum continuous current	2A
Maximum on resistance of relay	0.25Ω
Turn on time (typical)	500μs
Turn off time (typical)	50μs
Power input/output	
Maximum voltage	42V
Maximum current	8A

Notes

- Indicator LED can be suppressed, which is useful for tests performed in darkness and/or to avoid providing potential cues to the animals.