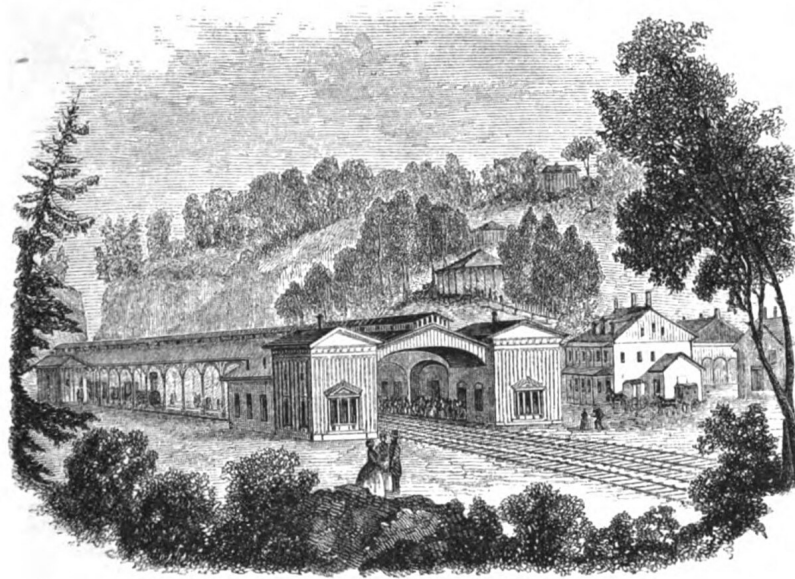


Relay Modules (1-channel and 4-channel)

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Electronics & Prototyping



II.—RELAY HOUSE, WASHINGTON JUNCTION.
Vol. XIV.—No. 83.—P P

Photo: Brantz Mayer — Public domain — via Wikimedia Commons (Relay_Station,_Maryland.jpg)

A relay module is an electrically operated switch that lets a low-voltage microcontroller control high-voltage or high-current devices like lamps, pumps and motors, with full isolation between the two sides. Common modules have 1, 2, 4 or 8 channels driven by transistors and LEDs.

Key Features

- 1, 2, 4 or 8 channel options
- Switching up to 250 V AC / 10 A typical
- Opto-isolated inputs on quality modules
- LED indicators per channel
- Trigger selectable high or low level

Typical Uses in the Workshop

- Switch mains lamps and heaters in demos
- Control pumps, motors and solenoids
- Automate greenhouses and aquariums
- Build queued machine and timer controls

Safe Operation

1. Wire the control side to the microcontroller
2. Connect the device between the relay COM and NO/NC
3. Set the trigger level jumper correctly
4. Test switching without the load first
5. Keep high-voltage wiring short and insulated

SAFETY NOTES

- Mains switching is dangerous - supervised tests only
- Always use an ELCB/RCD with mains circuits
- Keep low and high voltage wiring separated
- Do not exceed the relay contact rating
- Disconnect the load before rewiring

Maintenance & Consumables

- Check contacts for pitting and wear
- Listen for the click during tests
- Check the input transistors and LEDs
- Keep the module free of dust
- Replace relays that fail after switching inductive loads

Specification & Buying Notes

4-channel opto-isolated modules with screw terminals suit most class projects. Choose relays rated above the switched load. Quality modules have clear labels and covers for the mains side.