

Sound Detection Sensor Modules

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Sensors & Modules



Photo: NASA/JPL-Caltech — Public domain — via Wikimedia Commons (Plasma_Detection_Instrument.jpg)

Sound sensor modules use a microphone and amplifier to detect sound levels, outputting a digital trigger when noise passes a set threshold or an analog level for the sound intensity. Projects use them for clap switches, noise meters and responses to sound.

Key Features

- Electret microphone modules
- Analog and digital outputs
- Adjustable sensitivity pots
- Comparator threshold circuits
- Power and signal LEDs

Typical Uses in the Workshop

- Clap-activated switches
- Sound-reactive light displays
- Noise level monitors
- Trigger robots and cameras by sound

Safe Operation

1. Set the sensitivity for the ambient level
2. Wire the analog or digital output
3. Calibrate the threshold in code or the pot
4. Filter noise spikes in software
5. Test with the actual sound source

SAFETY NOTES

- Do not place the sensor near speakers that feedback
- Keep the module dry
- Check the supply voltage
- Mount away from vibration
- Keep the mic opening clean

Maintenance & Consumables

- Clean the microphone opening
- Re-tune sensitivity after room changes
- Check the wiring and connectors
- Keep spares in stock
- Test the response each session

Specification & Buying Notes

Sound modules with both outputs and a sensitivity pot suit the range of sound projects. Quality modules amplify cleanly; noisy cheap boards false-trigger.