

Photoelectric Beam Sensors

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

The energy of the light beam evaporates water molecules from the surface of pollen pores (jet thrust).

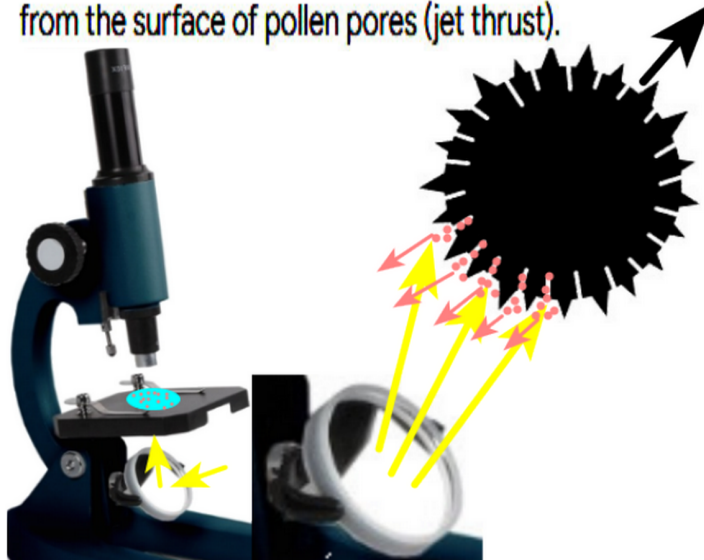


Photo: ??????? ?????? ???????????? — CC0 — via Wikimedia Commons (The_logic_of_the_laws_of_physics_contradicts_the_kinetic_theory_of_gas_pressure._Questions_about_the_energy_of_“eternal”_Brownian_motion._The_role_of_light_beam_energy_in_microscope_illumination.

Photoelectric sensors detect objects with light: through-beam pairs interrupt a beam, retro-reflective sensors bounce light off a reflector, and diffuse sensors detect reflected light from the target. They sense at distance without contact.

Key Features

- Through-beam, retro and diffuse types
- Ranges from 0.1 to 20 m through-beam
- Light or dark-on outputs
- NPN/PNP and relay outputs
- Waterproof housings for outdoors

Typical Uses in the Workshop

- Count parts on conveyors
- Detect presence across openings
- Level control in hoppers
- Safety and access detection

Safe Operation

1. Align the emitter and receiver for through-beam
2. Set the sensitivity for the target
3. Test detection with the real object
4. Adjust the angle and gap
5. Confirm the output reacts correctly

SAFETY NOTES

- Do not look directly into bright through-beam LEDs
- Check the beam does not reach eyes at laser models
- Mount the pair rigidly to keep alignment
- Keep lenses clean
- Check the range under ambient light

Maintenance & Consumables

- Clean the lenses with a soft cloth
- Check the alignment each session
- Verify the sensitivity setting
- Tighten mounts and brackets
- Replace faulty units

Specification & Buying Notes

Diffuse sensors are easiest for school rigs; through-beam gives longer ranges. Buy with brackets and guard against sunlight interference indoors. Quality sensors reject ambient light.