

Force Sensitive Resistors (FSRs)

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

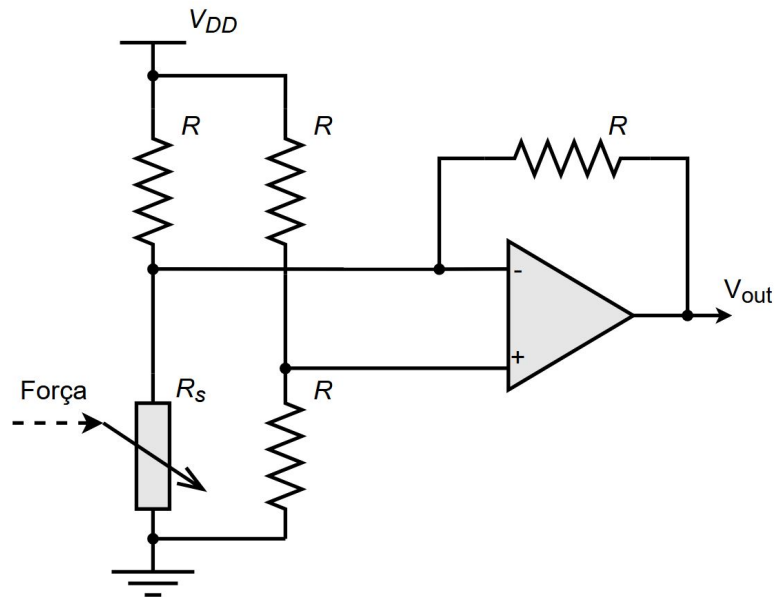


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A force sensitive resistor (FSR) changes its resistance as pressure is applied, making it a simple and cheap way to sense touch, weight, squeezes and pressure in projects. The sensing area is usually a thin film pad connected to a voltage divider.

Key Features

- Force range typically 0.2-10 N
- Thin film flexible pads, 0.5-25 mm circles
- Resistance drops from M ohm to k ohm under load
- Works with a simple voltage divider
- 3.3-5 V interface

Typical Uses in the Workshop

- Detect finger presses on interactive models
- Build pressure pads and weigh simple loads
- Trigger responses when objects are placed
- Create squeeze sensors for controllers

Safe Operation

1. Wire the FSR in a voltage divider with a fixed resistor
2. Read the analog voltage and map to force
3. Calibrate with known weights
4. Mount on a rigid surface for stable readings
5. Test the output range in the project setup

SAFETY NOTES

- Do not bend or kink the FSR tail sharply
- Keep away from heat, water and sharp objects
- Do not exceed the rated force range
- Protect the active area from scratches
- Check the connector is not shorting

Maintenance & Consumables

- Clean the pad surface gently
- Check the connector and wires
- Retest the calibration regularly
- Store flat, not folded
- Keep spares in the sensor stock

Specification & Buying Notes

Buy FSRs with connector tails and a few fixed resistor values for dividers. Small round 5-10 mm sensors suit button projects, long strips suit edge detection. Quality sensors last longer than cut-rate film.