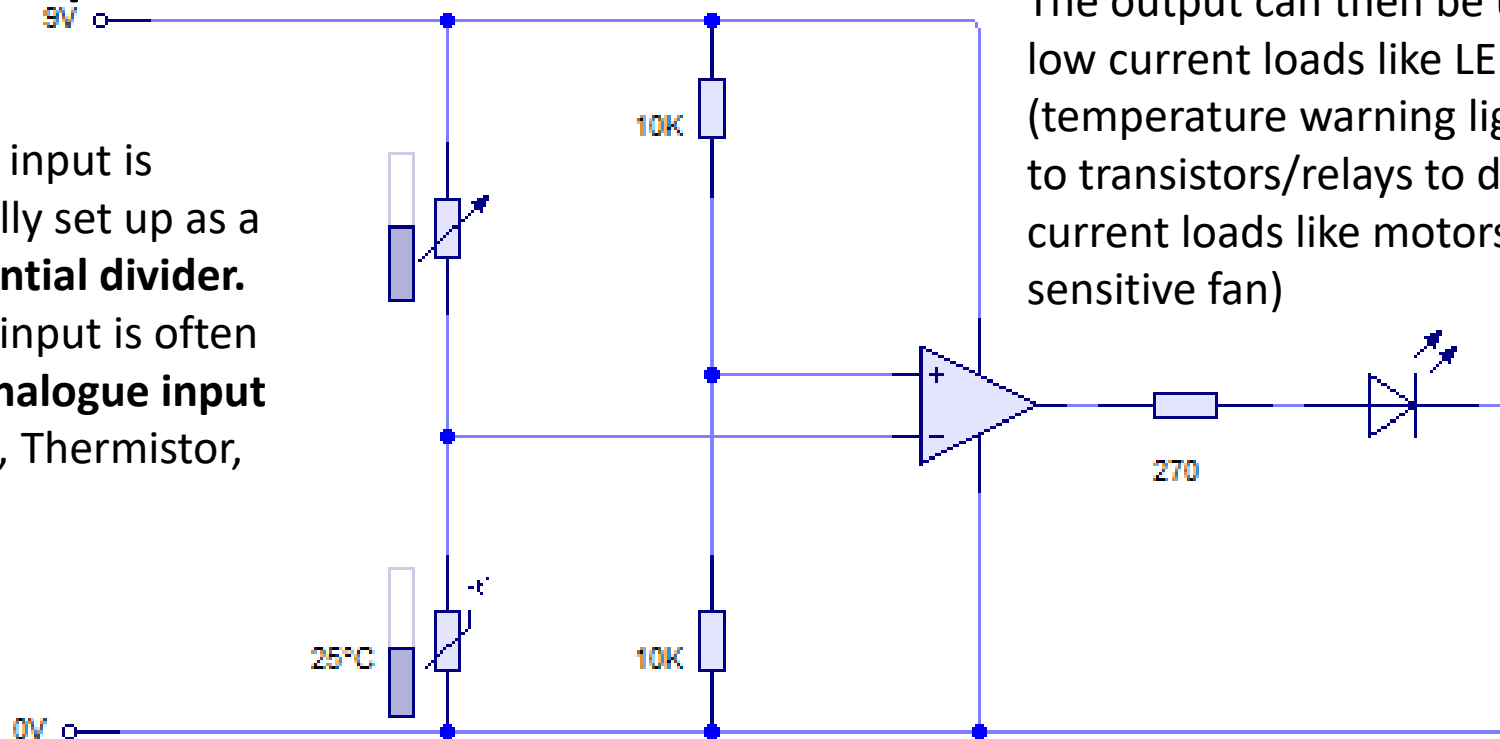


Operational Amplifiers: Comparator Circuit

- An Operational Amplifier (Op-Amp) is an Integrated Circuit (IC) that can be used to amplify small voltage signals and make them larger.
- However they are more commonly used as a **COMPARATOR** where the voltages on the two inputs are **COMPLARED** with on another to see which is highest.
- If the voltage on The *inverting input (-)* is HIGH then the output is LOW. If the voltage on the *non-inverting input (+)* is HIGH then the output is HIGH too!

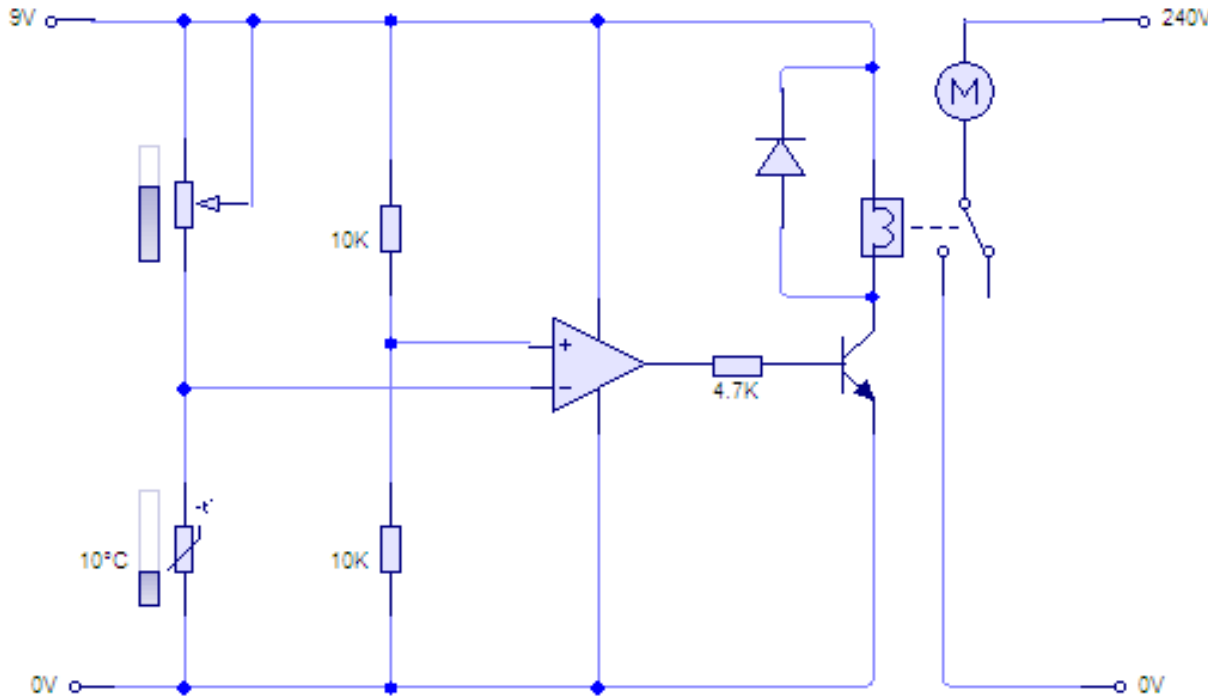
Each input is usually set up as a **potential divider**. One input is often an **analogue input** (LDR, Thermistor, etc)



The output can then be used to drive low current loads like LEDs (temperature warning light) or linked to transistors/relays to drive high current loads like motors (heat sensitive fan)

Operational Amplifiers:

Comparator Circuit



- **Operational Amplifiers (Op-Amps)** are integrated circuits

- They can be used as **amplifiers** to make small voltages (signals) bigger

- They can also be set up like this diagram with **2 Potential Dividers**

- This arrangement is called a **Comparator**

- **A comparator COMPARES the Voltages on it's 2 Potential Dividers**
- **If the voltage on the “Non-Inverting input” is the biggest, the output is ON**
- **If the voltage on the “Inverting Input” is biggest, the output is OFF (Inverted)**
- **We can fix the value of 1 potential divider and then add an analogue input to the other**