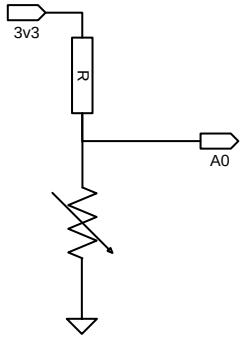
* Potentiometer mounting

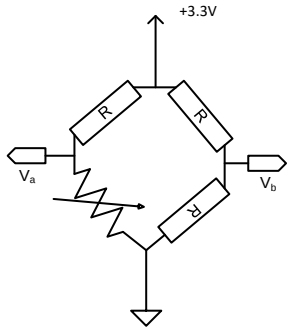


Advantages:
- Simple
- Inexpensive

Disadvantage:
- Not always accurate enough

Conclusion:
To be preferred whenever possible, as it's simple and inexpensive, but may not be precise enough in some cases.

* Wheatstone bridge with thermistor



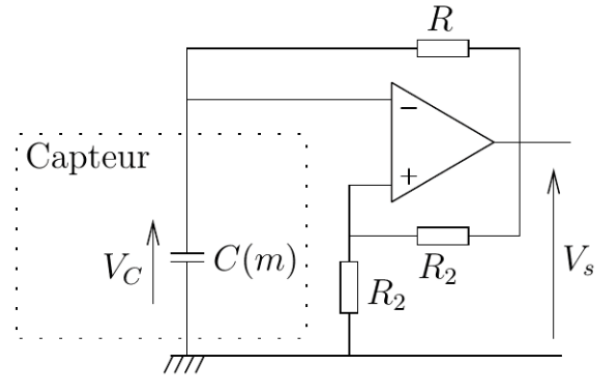
$V_m = V_a - V_b$

Advantages:
- Possibility of adding a gain in order to have a more relevant voltage range.

Disadvantage:
- + Complex

Conclusion:
Good solution if you have analog inputs and you're not satisfied with the voltage range provided by your transducer.

* Relaxation oscillator



Advantages:
- Very useful if you don't have a DAC, as the output signal can be analyzed by a digital input.

Disadvantage:
- Requires very precise capabilities
- Requires an external power supply for -3.3V.

Conclusion:
Very useful if your microprocessor is not equipped with a DAC.

Conclusion:
In our case, the Wheatstone bridge seems the most appropriate, since the voltage range provided by our default sensor is unsatisfactory, we have a microcontroller equipped with analog inputs, and we don't have a high-precision capacitor.

ÉCOLE NATIONALE D'INGÉNIEURS DE BREST

Title : Thermistor Conditioning

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