

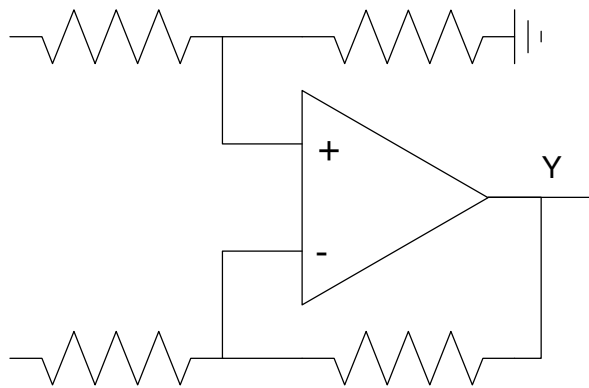
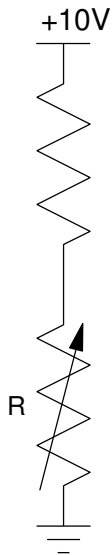
Instrumentation Amplifiers

A thermistor (temperature sensor) has a resistance - temperature relationship of

$$R = 1000 \cdot \exp\left(\frac{3905}{T+273} - \frac{3905}{298}\right) \Omega$$

where T is the temperature in degrees Celsius. Design a circuit so that

- Y = -10V when T = -20C,
- Y = +10V when T = +20C
- Y is proportional to T for -20C < T < +20C



An RTD (temperature sensor) has a resistance - temperature relationship of

$$R = 1000 \cdot (1 + 0.00043T) \Omega$$

where T is the temperature in degrees C. Design a circuit so that

- $Y = -10V$ when $T = -20C$ (258K) ,
- $Y = +10V$ when $T = +20C$ (298K)
- Y is proportional to T for $-20C < T < +20C$

