

# Higher Assignment Guide Sheet: Wheatstone Bridge

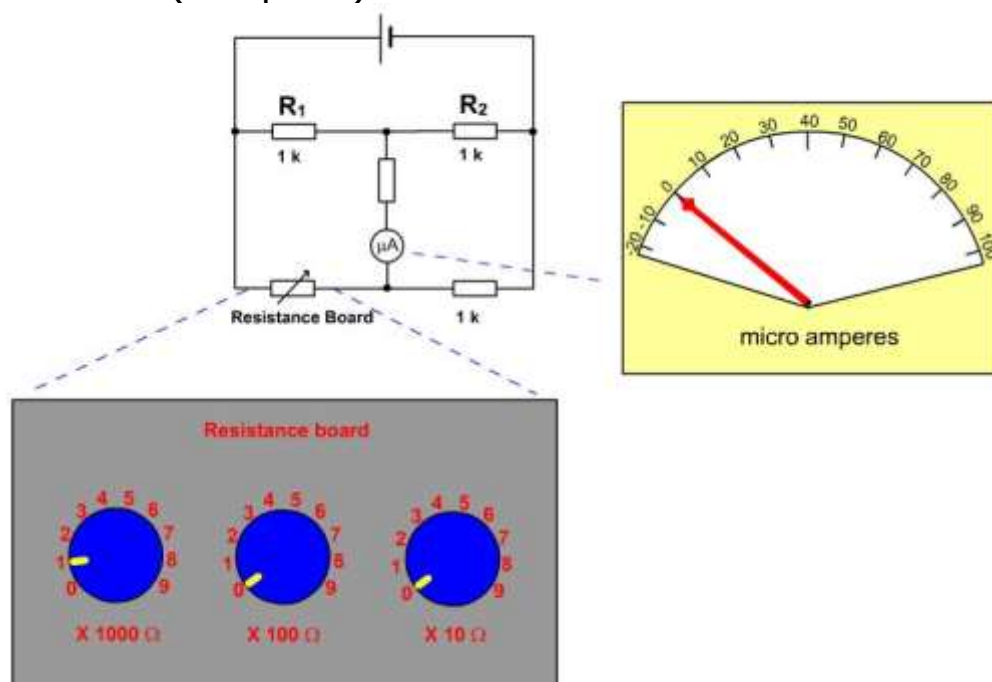
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## Out of balance Wheatstone Bridge.

### Apparatus

3 known resistors (approximately  $1000\ \Omega$ ), power supply unit, wires, decade resistance box or board, microammeter or millivoltmeter or galvanometer, resistor, ohmmeter (if required)



### Instructions:

- Set up the Wheatstone Bridge using  $1000\ \Omega$  resistors.
- The resistance box should be set to vary below and above  $1000\ \Omega$ .
- The bridge has now to be unbalanced by a known small amount and the reading on the voltmeter or ammeter noted.

### Risk Assessment

- Do a visual check on all wiring to ensure it is safe. Discuss with a teacher if you have any concerns.
- Do an electrical safety check by observing all the wires.
- Resistors and circuits can get hot, turn off the power to the circuit when not in use and do not touch the circuit.
- Be observant to those around you.
- Do not exceed the maximum voltage across the circuit, discuss the maximum value with your teacher.

## Research

- <https://ece.mst.edu/media/academic/ece/documents/classexp/ee152labs/EE%20152%20circuitslab4.pdf>
- <https://eeeproject.com/wheatstone-bridge/>
- <http://www.elcom-hu.com/Mechatronics/Transducers%20Lab/Manual.pdf>
- <http://www.bbc.co.uk/bitesize/higher/physics/elect/resistors/revision/3/>
- <https://www.electronics-tutorials.ws/blog/wheatstone-bridge.html>
- [https://nano-optics.colorado.edu/fileadmin/Teaching/phys1140/lab\\_manuals/LabManualE3.pdf](https://nano-optics.colorado.edu/fileadmin/Teaching/phys1140/lab_manuals/LabManualE3.pdf)
- [http://mrmackenzie.co.uk/tag/wheatstone-bridge/?doing\\_wp\\_cron=1543259476.7498979568481445312500](http://mrmackenzie.co.uk/tag/wheatstone-bridge/?doing_wp_cron=1543259476.7498979568481445312500)
- <https://www.physics.purdue.edu/~clarkt/Courses/Physics271L/Exp5/Exp5.html>
- [https://faculty.uoit.ca/eklund/engr2200u/ENGR2200\\_Lab\\_Manual\\_Lab2\\_.pdf](https://faculty.uoit.ca/eklund/engr2200u/ENGR2200_Lab_Manual_Lab2_.pdf)
- <https://demonstrations.wolfram.com/TheWheatstoneBridge/>