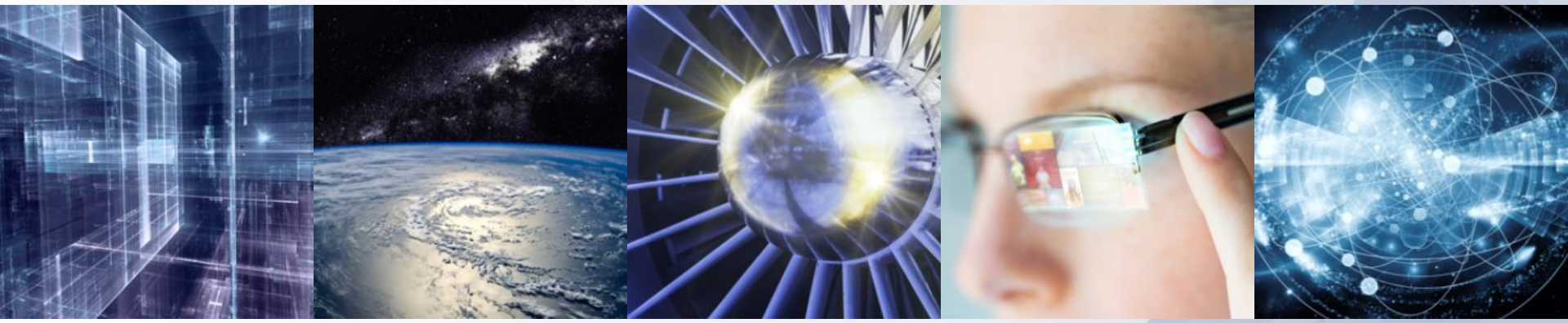


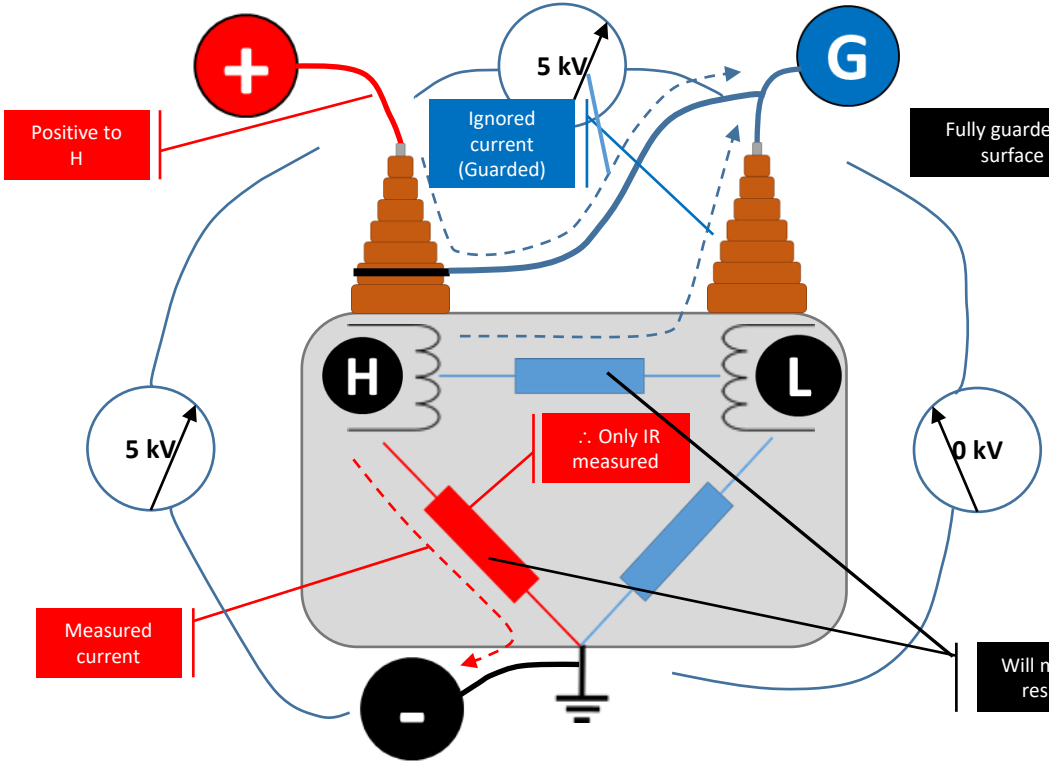
Task Force

Core Ground and Winding Insulation Resistance Performance and Interpretation

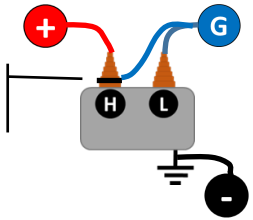
IEEE
Advancing Technology for Humanity

DC IR testing measurements

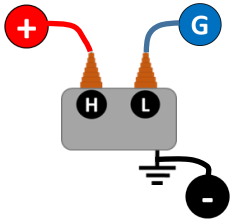
IR – H to Ground measurement



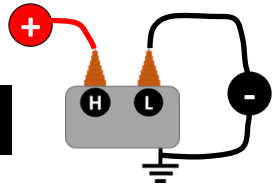
Measurement connections required



Recommended



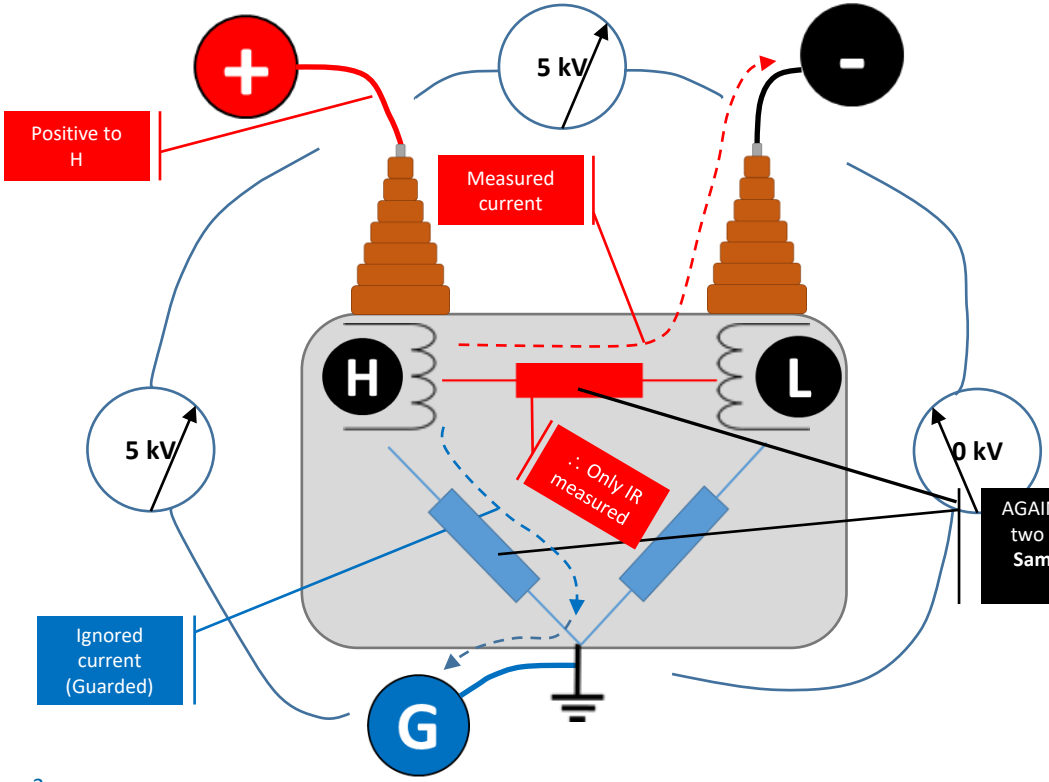
Typical



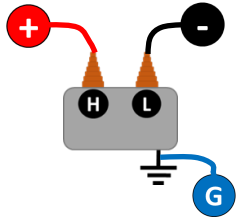
Alternative

DC IR testing measurements

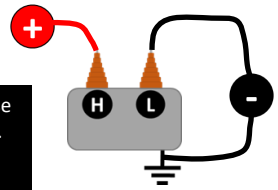
IR – H to L measurement



Measurement connections required



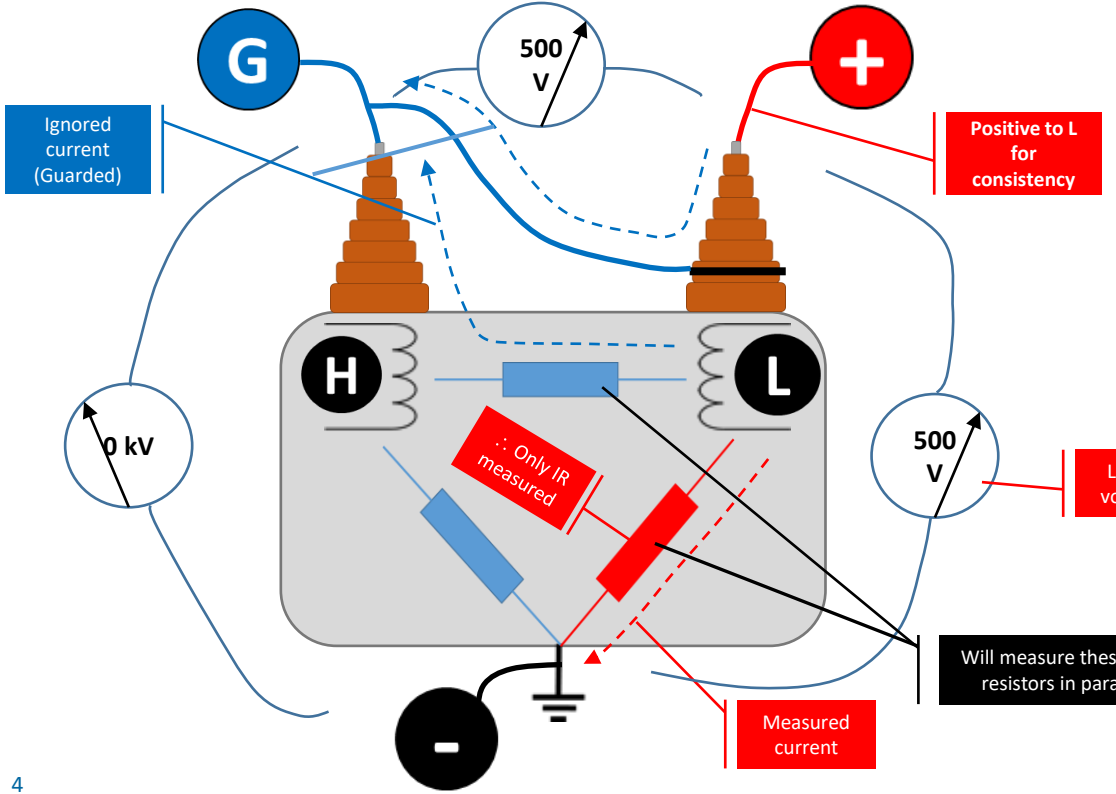
Recommended



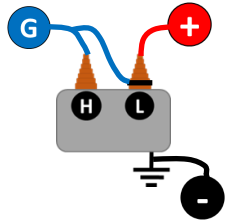
Alternative

DC IR testing measurements

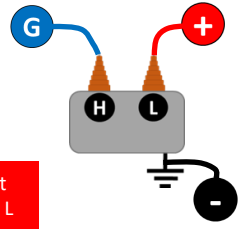
IR – L to Ground measurement



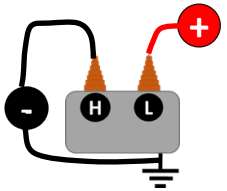
Measurement connections required



Recommended



Typical



Alternative

DC IR testing measurements

Instrument basic requirements / recommendations

- Must haves
  - Guard terminal
    - Without guarding out unwanted leakage current huge additional variation is measured
  - Guard terminal maximum error introduced specification
    - Can introduce considerable additional errors
    - Use of guard highly recommended
  - Overall service accuracy
    - Basic accuracy + environmental additional uncertainties
  - Maintaining set output voltage
    - Guarded surface leakage can be high enough to load test voltage
    - Variations in test voltage can change test result

DC IR testing measurements

Test result recorded information

- Must record:
  - Were screened test leads used or not?
  - Ambient temperature
    - Change or 10^{o}C can half or double IR value
    - Need to apply temperature correction
  - Humidity
    - If surface leakage has not been guarded, an increase in humidity can greatly increase surface leakage and reduce measured IR value
  - Test voltage applied during test
    - To ensure test results will be comparable