

## 0.1 Resistivity Measurements

### 0.1.1 Resistance Measurement

Assuming  $R_{load} \gg R_{sample}$  then,

$$I_{in} = \frac{V_{SR830}}{R_{load} + R_{sample}} \approx \frac{V_{SR830}}{R_{load}} \quad (1)$$

To stay within 1% of error, we can make sure that  $R_{load} > 100 \times R_{sample}$ .

Consequently, the resistance of the sample between the voltage probes can be calculated:

$$R_{sample} = \frac{V_{A-B}}{I_{in}} \approx \frac{V_A - V_B}{V_{SR830}} R_{load} \quad (2)$$