

Gr:	<i>First Name:</i>	
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TP-1

WHEATSTONE BRIDGE IN CONTINUOUS MODE (Resistance Measurement)

Assembly Schematics

AOIP box bridge	Wire bridge

I. AOIP Resistance Bridge

The resistance to be measured has the following colors:
The relative uncertainty of AOIP resistors is 0,2%

This means that $\frac{\Delta R_a}{R_a} = \frac{\Delta R_b}{R_b} = \frac{\Delta R_c}{R_c} = 0,2\%$

Complete the following table:

	R_a ()	R_b ()	R_c ()	R_x ()	ΔR_x ()	$R_{Ohmmeter}$ ()	$R_{Color Code}$ ()	$R_x \pm \Delta R_x$ ()
R_x ()								

Calculation procedure:

$R_{x0} = R_{Color code} = \dots\dots\dots$

$R_x = \dots\dots\dots$

$\frac{\Delta R_x}{R_x} = \dots\dots\dots$

$\Delta R_x = \dots\dots\dots$

1- Graphical method (zero method)

Experimentally we determine the coordinates of the points $A \begin{pmatrix} R_1 = R_a + p \\ h_1 \end{pmatrix}$ and $B \begin{pmatrix} R_2 = R_a - p \\ h_2 \end{pmatrix}$

We choose: $R_a = \quad \Omega \quad p = \quad \Omega$ this leads to:

$$A \left(\quad \right) \quad B \left(\quad \right)$$

Represent points A and B on the coordinate system below, then determine R_x graphically.



Give the expression for R_x and as a function of R_a and the step p

$R_x =$

2- Analytical method

$R_x =$

3- Comparison and interpretation

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II. Wire bridge

Complete the following table:

	R_a ()	l_1 ()	l_2 ()	R_x ()	ΔR_x ()	$R_{Ohmmeter}$ ()	$R_{Color Code}$ ()	$R_x \pm \Delta R_x$ ()
R_x ()		0,99	0,99					
		0,66	1,32					

Calculation procedure of R_x and ΔR_x (We give $\Delta l = 1 \text{ mm}$):

$R_x = ?$

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$\Delta R_x = ?$

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Interpretation

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III. Conclusion

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