

Individual Resistor Value (R_1):

s/no.	Voltage (V) [0 to 200 20 V]	current (I) (mA) [0 to 200 mA]	R_1
	5.00		
1.	0	0	
2.	0.50	10.7	
3.	1.00	21.9	
4.	1.50	32.9	
5.	2.00	43.2	
6.	2.50	54.2	
7.	3.00	65.7	
8.	3.50	76.1	
9.	4.00	87.5	
10.	4.50	97.8	
11.	5.00	109.9	
12.	5.50	120.5	
13.	6.00	132.4	
14.	6.50	141.7	
15.	7.00	153.4	
16.	7.50	165.0	
17.	8.00	177.6	
18.	8.50	189.2	
19.	9.00	199.7	

S1 Individual Register Value: (R_2)
no.

	(Am) V	I
1	0	0
2	0.5	4.7
3	1.00	10.1
4	1.50	15.3
5	2.00	20.8
6	2.50	25.5
7	3.00	29.8
8	3.50	36.2
9	4.00	40.8
10	4.50	46.0
11	5.00	50.7
12 98	5.50	56.1
13	6.00	62.0
14	6.50	66.5
15	7.00	72.4
16	7.50	77.1
17	8.00	82.8
18	8.50	87.6
19	9.00	93.1

Individual Resistor value: (R_3)

Sl no.	V	I
1	0	0
2	0.50	2.4
3	1.00	4.4
4.	1.50	6.9
5.	2.00	9.3
6.	2.50	11.7
7	3.00	13.7
8	3.50	16.4
9.	4.00	18.5
10.	4.50	20.9
11.	5.00	23.0
12.	5.50	25.6
13.	6.00	27.8
14.	6.50	30.1
15.	7.00	32.8
16.	7.50	35.0
17.	8.00	37.4
18.	8.50	39.6
19.	9.00	42.1

Series resistance: ~~$R_1 + R_2$~~ ($R_1 \& R_2$)

Sl no.	V(V)	I (mA)
1	0	0
2	0.50	3.6
3	1.00	7.3
4	1.50	10.7
5	2.00	14.1
6.	2.50	17.7
7.	3.00	20.6
8.	3.50	24.2
9.	4.00	27.8
10.	4.50	31.1
11.	5.00	34.6
12.	5.50	38.5
13.	6.00	41.8
14.	6.50	45.3
15.	7.00	49.0
16.	7.50	52.2
17.	8.00	55.4
18.	8.50	59.6
19.	9.00	63.1

Series Resistance (R_1 & R_2):

Sl no.	$V(V)$	$I(mA)$
1	0	0
2	0.50	1.9
3	1.00	3.8
4	1.50 1.50	5.7
5	2.00	7.5
6	2.50	9.7
7	3.00	11.6
8	3.50	13.4
9	4.00	15.3
10	4.50	17.2
11.	5.00	18.8
12.	5.50	20.9
13.	6.00	22.8
14.	6.50	24.8
15.	7.00	26.7
16.	7.50	28.6
17.	8.00	30.5
18.	8.50	32.4
19.	9.00	34.5

Series Resistance (~~R_3~~): (R_2 & R_3):

Sl no.	V(V)	I (mA)
1.	0	0
2.	0.50	1.6
3.	1.00	3.2
4.	1.50	4.8
5.	2.00	6.5
6.	2.50	7.8
7.	3.00	9.5
8.	3.50	11.0
9.	4.00	12.6
10.	4.50	14.3
11.	5.00	15.7
12.	5.50	17.3
13.	6.00	19.2
14.	6.50	20.7
15.	7.00	22.3
16.	7.50	23.8
17.	8.00	25.6
18.	8.50	27.2
19.	9.00	28.8

Parallel Resistance (R_1 & R_2):

S/no.	V(V)	I(mA)
1.	0	0
2.	0.50	15.4
3.	1.00	33.4
4.	1.50	48.4
5.	2.00	62.9
6.	2.50	78.5
7.	3.00	96.0
8.	3.50	110.9
9.	4.00	128.8
10.	4.50	143.4
11.	5.00	161.1
12.	5.50	177.8
13.	6.00	192.3

For series R_1, R_2 :

$$\frac{0.01}{6} + \frac{0.1}{41.8} = 0.41\% \leftarrow \text{Max \% error}$$

$$\text{Max error} = 0.41\% \times 143.47 = 0.59$$

For series R_1, R_3 :

$$\frac{0.01}{6} + \frac{0.1}{22.8} = 0.61\%$$

$$\text{Max error} = 0.61\% \times 261.78 = 1.60\Omega$$

For series R_2, R_3 :

$$\frac{0.01}{6} + \frac{0.1}{19.2} = 0.69\%$$

$$\text{Max error} = 0.69\% \times 313.48 = 2.09\Omega$$

Parallel Resistance (R_1 & R_3):

Sl no.	V(V)	I (mA)
1.	0	0
2.	0.50	12.5
3.	1.00	27.5
4.	1.50	39.1
5.	2.00	52.3
6.	2.50	65.1
7.	3.00	78.4
8.	3.50	92.1
9.	4.00	106.4
10.	4.50	118.7
11.	5.00	133.2
12.	5.50	146.8
13.	6.00	158.4

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Parallel Resistance ($R_2 \parallel R_3$):

Sl no.	V (V)	I (mA)
0	0	0
2	0.50	6.9
3	1.00	15.7
4	1.50	21.8
5	2.00	30.2
6	2.50	37.0
7	3.00	44.3
8	3.50	51.4
9	4.00	60.3
10	4.50	66.3
11	5.00	73.7
12	5.50	81.4
13	6.00	90.1

for $R_1 \parallel R_2$:

$$\frac{0.01}{6} + \frac{0.1}{112.3} = 0.22\%$$

$$\text{Max error} = 0.22\% \times 32.15 = 0.07 \Omega$$

For $R_1 \parallel R_3$:

$$\frac{0.01}{6} + \frac{0.1}{158.4} = 0.23\%$$

$$\text{Max error} = 0.23\% \times 37.62 \Omega = 0.09 \Omega$$

For $R_2 \parallel R_3$:

$$\frac{0.01}{6} + \frac{0.1}{90.1} = 0.28\%$$

$$\text{Max error} = 0.28\% \times 67.25 \Omega = 0.18 \Omega$$