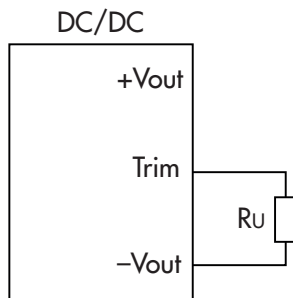


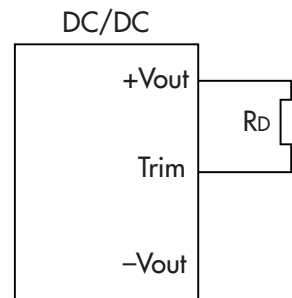
## Output Voltage Adjustment

Output voltage set point adjustment allows the user to increase or decrease the output voltage set point of the module. This is accomplished by connecting an external resistor between the Trim pin and either the +Vout or -Vout pins. With an external resistor between the Trim and -Vout pin, the output voltage set point increases. With an external resistor between the Trim and +Vout pin, the output voltage set point decreases. The external TRIM resistor needs to be at least 1/8 W of rated power.

### Connection of Trim-Up resistor



### Connection of Trim-Down resistor



### Trim-Up equation

$$R_U[\Omega] = \frac{G \times L}{V_{out\_up} - L - K} - H$$

### Trim-Down equation

$$R_D[\Omega] = \frac{(V_{out\_down} - L) \times G}{V_{out\_nom} - V_{out\_down}} - H$$

### Trim constants

Model	G	H	5K	L
TEN 20-11011WIRH	5'100	2'050	2.6	2.5
TEN 20-11012WIRH	10'000	5'110	9.5	
TEN 20-11013WIRH			12.5	
TEN 20-11015WIRH	56'000	13'000	21.5	

**Trim-Tables for single output converters**

<b>TEN 20-11011WIRH</b>										
<b>Trim-Up</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	5.15	5.20	5.25	5.30	5.36	5.41	5.46	5.51	5.56	5.61
<b>R<sub>u</sub> [kOhm]</b>	248.44	123.20	81.45	60.57	48.05	39.70	33.73	29.26	25.78	22.30
<b>Trim-Down</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	5.05	5.00	4.95	4.90	4.85	4.79	4.74	4.69	4.64	4.59
<b>R<sub>D</sub> [kOhm]</b>	253.35	123.10	79.68	57.97	44.94	36.26	30.06	25.40	21.79	18.89

<b>TEN 20-11012WIRH</b>										
<b>Trim-Up</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	12.12	12.24	12.36	12.48	12.60	12.72	12.84	12.96	13.08	13.20
<b>R<sub>u</sub> [kOhm]</b>	203.22	99.06	64.33	46.97	36.56	29.61	24.65	20.93	18.04	15.72
<b>Trim-Down</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	11.88	11.76	11.64	11.52	11.40	11.28	11.16	11.04	10.92	10.80
<b>R<sub>D</sub> [kOhm]</b>	776.56	380.72	248.78	182.81	143.22	116.83	97.96	83.85	72.85	64.06

<b>TEN 20-11013WIRH</b>										
<b>Trim-Up</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	16.50
<b>R<sub>u</sub> [kOhm]</b>	161.56	78.22	50.45	36.58	28.22	22.67	18.70	15.72	13.41	11.56
	<b>11 %</b>	<b>12 %</b>	<b>13 %</b>	<b>14 %</b>	<b>15 %</b>	<b>16 %</b>	<b>17 %</b>	<b>18 %</b>	<b>19 %</b>	<b>20 %</b>
<b>V<sub>out</sub> [V]</b>	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	18.00
<b>R<sub>u</sub> [kOhm]</b>	10.04	8.78	7.71	6.80	6.00	5.31	4.69	4.15	3.66	3.22
<b>Trim-Down</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>V<sub>out</sub> [V]</b>	14.85	14.70	14.55	14.40	14.25	14.10	13.95	13.80	13.65	13.50
<b>R<sub>D</sub> [kOhm]</b>	818.22	401.56	262.67	193.22	151.56	123.78	103.94	89.06	77.48	68.22

**Trim-Tables for single output converters**

<b>TEN 20-11015WIRH</b>										
<b>Trim-Up</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>Vout [V]</b>	24.24	24.48	24.72	24.96	25.20	25.44	25.68	25.92	26.16	26.40
<b>R<sub>u</sub> [kOhm]</b>	570.33	278.67	181.44	132.83	103.67	84.22	70.33	59.92	51.82	45.33
	<b>11 %</b>	<b>12 %</b>	<b>13 %</b>	<b>14 %</b>	<b>15 %</b>	<b>16 %</b>	<b>17 %</b>	<b>18 %</b>	<b>19 %</b>	<b>20 %</b>
<b>Vout [V]</b>	26.64	26.88	27.12	27.36	27.60	27.84	28.08	28.32	28.56	28.80
<b>R<sub>u</sub> [kOhm]</b>	40.03	35.61	31.87	28.67	25.89	23.46	21.31	19.41	17.70	16.17
<b>Trim-Down</b>										
	<b>1 %</b>	<b>2 %</b>	<b>3 %</b>	<b>4 %</b>	<b>5 %</b>	<b>6 %</b>	<b>7 %</b>	<b>8 %</b>	<b>9 %</b>	<b>10 %</b>
<b>Vout [V]</b>	23.76	23.52	23.28	23.04	22.80	22.56	22.32	22.08	21.84	21.60
<b>R<sub>p</sub> [kOhm]</b>	4'947.67	2'439.33	1'603.22	1'185.17	934.33	767.11	647.67	558.08	488.41	432.67