

# Power Round-Wire Adjustable Resistors

## Adjustable Resistor for Applications Requiring Settings at Different Resistance Values

### ► Preview

Choose Token's Power DRS adjustable resistor for applications requiring settings at different resistance values. These wirewound resistors are equipped with an adjustable lug, making them ideal for adjusting circuits, obtaining unique resistance values and setting equipment to meet various line voltages.

DRS resistors feature a hollow core to permit secure fastening with thru bolts with washers or spring-type clips. They also offer the durability of lead free vitreous enamel, or silicone coating and all-welded construction.

The Power Adjustable DRS Resistor is RoHS compliant and lead free. For non-standard technical requirements and custom special applications, please contact us.

### To Calculate Max. Amperes :

- Voltage = (Watts x Ohms)<sup>1/2</sup>

### Power Rating :

- Adjustability is 10% to 90% of full resistance value.
- Wattage is proportional to this adjusted resistance value.
- Example: If the lug is set at half resistance, the wattage is reduced by approximately one-half.
- Setting the lug at an intermediate point reduces the wattage rating by approximately the same proportion.
- Based on 25°C free air rating. The stated wattage rating applies only when the entire resistance is in the circuit.

### Features :

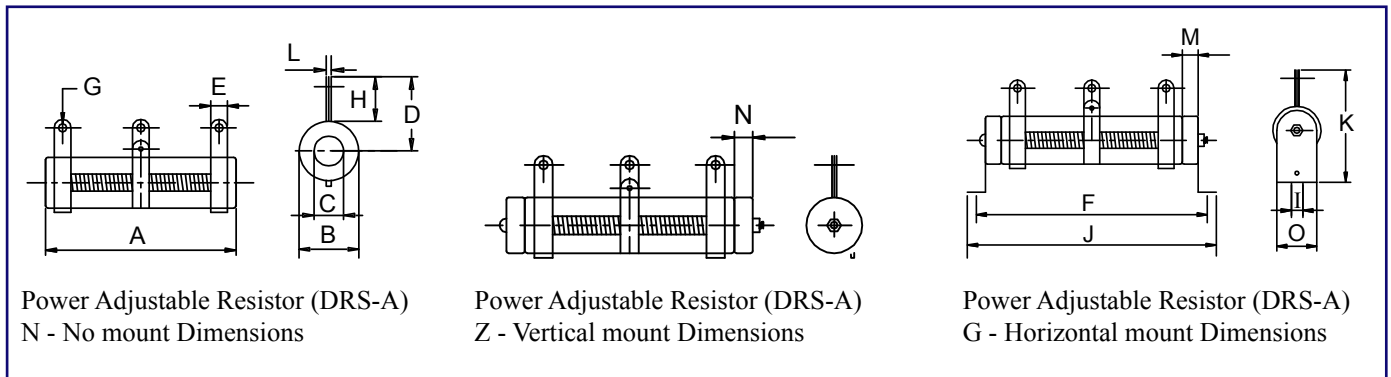
- Adjustable lug supplied.
- High wattage applications.
- Flame resistant and rugged lead coating.
- Resistance Tolerance: J(±5%), K(±10%).
- Terminals suitable for soldering or bolt connection.

### Options :

- Special temperature coefficients, tolerances
- Adjustable, fixed, or tapped styles are available.
- Non-inductive Ayrton Perry windings can be specified.
- Special terminals available for non-standard applications.
- Single and double quick connect terminals can be specified.
- Standard lug terminals available with or without terminal hardware.

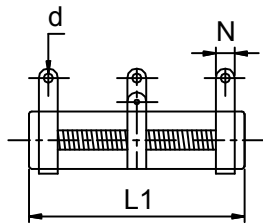


## ▶ (DRS-A) 20W ~ 1300W Dimensions

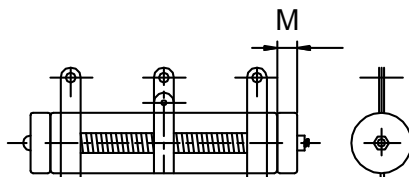


Wattage Rating	Dimensions (mm)															Max. Resistance Value(Ω)
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
20W	60	17	8	22	5	78	2	12	4	90	36	1.0	-	6	16	1~1KΩ
30W	80	17	8	22	5	100	2	12	4	112	36	1.0	-	6	16	1~1.5KΩ
40W	110	17	8	22	5	128	2	12	4	140	36	1.0	-	6	16	1~2KΩ
50W	110	25	16	30	8	150	5	18	6	166	58	1.2	6	-	27	0.1~5KΩ
60W	90	28	18	32	8	130	5	19	6	146	60	1.2	6	-	27	0.1~6KΩ
80W	110	28	18	32	8	150	5	19	6	166	60	1.2	6	-	27	0.1~8KΩ
100W	140	28	18	32	8	180	5	19	6	196	60	1.2	6	-	27	0.1~10KΩ
120W	160	28	18	32	8	200	5	19	6	216	60	1.2	6	-	27	0.1~12KΩ
150W	195	28	18	32	8	235	5	19	6	251	60	1.2	6	-	27	0.3~15KΩ
160W	185	35	24	36	10	225	5	19	8	245	76	1.6	6	-	34	0.3~16KΩ
200W	210	35	24	36	10	250	5	19	8	274	76	1.6	6	-	34	0.3~20KΩ
250W	210	40	25	38	12	250	5	20	8	274	78	1.6	6	-	34	0.5~25KΩ
300W	260	40	25	38	12	300	5	20	8	320	78	1.6	6	-	34	0.5~30KΩ
400W	330	40	25	38	12	370	5	20	8	395	78	1.6	6	-	34	0.5~40KΩ
500W	330	50	35	50	12	380	6	25	9	400	100	1.6	8	-	40	0.5~50KΩ
600W	400	50	35	50	12	450	6	25	9	470	100	1.6	8	-	40	0.8~60KΩ
700W	460	50	35	50	12	510	6	25	9	530	100	1.6	8	-	40	0.8~70KΩ
800W	460	60	40	55	15	515	6	30	10	535	110	1.6	10	-	50	0.8~80KΩ
1000W	540	60	40	55	15	595	6	30	10	615	110	1.6	10	-	50	1~100KΩ
1300W	650	65	42	62	15	702	6	30	10	722	115	1.6	10	-	50	1~130KΩ

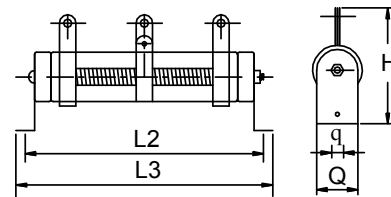
► (DRS-B) 15W ~ 20000W Dimensions



Adjustable Power Resistor (DRS-B)  
N - No mount Dimensions



Adjustable Power Resistor (DRS-B)  
Z - Vertical mount Dimensions



Adjustable Power Resistor (DRS-B)  
G - Horizontal mount Dimensions

Wattage Rating	Dimensions (mm)										Resistance Range
	R	L1	L2	L3	H	N	d	M	q	Q	
15W	15	45	65	85	40	6	3.5	3.5	4.5	15	1~1KΩ
20W	15	50	70	90	40	6	3.5	3.5	4.5	15	1~1KΩ
25W	20	50	80	100	50	6	3.5	5	5	20	2~1KΩ
30W	20	70	100	120	50	6	3.5	5	5	20	2~1KΩ
40W	20	87	115	137	50	6	3.5	5	5	20	2~1KΩ
50W	28	90	115	143	68	9	4.5	5.5	6	27	5~1KΩ
80W	28	90	115	143	68	9	4.5	5.5	6	27	5~2KΩ
100W	28	170	195	223	68	9	4.5	5.5	6	27	10~3KΩ
150W	28	215	240	268	68	9	4.5	5.5	6	27	10~3KΩ
200W	28	267	292	320	68	9	4.5	5.5	6	27	10~5KΩ
250W	28	267	292	320	68	9	4.5	5.5	6	27	10~5KΩ
300W	40	267	300	343	90	10	4.5	6	6	39	20~5KΩ
400W	40	330	365	406	90	10	4.5	6	6	39	20~5KΩ
500W	50	330	365	415	98	10	6	8.5	8	49	20~5KΩ
600W	50	330	365	415	98	10	6	8.5	8	49	20~5KΩ
700W	50	400	435	485	95	10	6	8.5	8	49	20~5KΩ
800W	70	300	320	362	138	15	8	-	8	69	40~500Ω
1000W	70	300	320	362	138	15	8	-	8	69	40~500Ω
1500W	70	415	435	477	138	15	8	-	8	69	40~500Ω
2000W	70	510	530	572	138	15	8	-	8	69	40~500Ω
2500W	70	600	620	662	138	15	8	-	8	69	40~500Ω
3000W	70	600	620	662	138	15	8	-	8	69	40~500Ω
4000W	100	430	450	521	185	15	8	-	8	99	40~500Ω
5000W	100	500	620	691	185	15	8	-	8	99	40~500Ω
6000W	100	600	720	791	185	15	8	-	8	99	40~500Ω
10000W	150	600	625	720	350	30	8	-	10	150	40~500Ω
12000W	150	660	685	780	350	30	8	-	10	150	40~500Ω
15000W	150	660	685	780	350	30	8	-	10	150	40~500Ω
20000W	150	1000	1030	1120	350	30	8	-	10	150	40~500Ω

## ► Specifications

Test Item	Test Methods	Characteristics
Resistance tolerance	JIS-C-5202 5-1	Resistance Nominal Tolerance 1≤R 1>R ±5%(J) ±10%(K)
Temperature coefficient	JIS-C-5202 5-2	±200PPM/°C MAX
Load rating	JIS-C-5202 5-4	ΔR/R≤±(0.5%+0.1Ω) Surface temperature up 350°C MAX
Short-term overload	JIS-C-5202 5-5 1000% rated wattage 5 seconds	Free of appearance or structural irregularity ΔR/R≤ ±(2%+0.1Ω)
Insulation resistance	JIS-C-5202 5-6 500VDC	100MΩ min
Dielectric withstanding voltage	JIS-C-5202 5-7 1000VDC 1 minute Between terminal and anchor stand	Free of appearance or structural irregularity ΔR/R≤ ±(0.1%+0.05Ω)
Terminal strength	JIS-C-5202 6-1 8kg 30 seconds	Free of appearance or structural irregularity
Vibration	JIS-C-5202 6-3 1.5m/m 10 ~ 50 ~ 10 Hz/min X-Y-Z 2 hours each	Free of appearance or structural irregularity Surface coating crack ΔR/R≤ ±(1%+0.05Ω)
Thermal shock	JIS-C-5202 7-3 Room temp 30 minutes ON-55°C 15 minutes OFF	Free of structural irregularity ΔR/R≤ ±(2%+0.1Ω)
Humidity	JIS-C-5202 7-5 40°C 90%RH 240 hours	Free of appearance or structural irregularity Surface coating crack ΔR/R≤ ±(3%+0.1Ω)
Load life	JIS-C-5202 7-10 90 minutes ON - 30 minutes OFF 500 hours	Free of appearance or structural irregularity Surface coating crack ΔR/R≤ ±(1%+0.05Ω)
Flame retardation	JIS-C-5202 7-13-3-2 100% - 600% rated wattage load	US UL-94 flame retardation test V-0 grade noncombustible
REMARKS:	1. Resistance and resistance tolerance were tested in-house with micro resistance meter. 2. Coating refers to UL-certified data provided by supplier.	

## ► DQS - Application Notes

### Determination of End Resistance Value of FVR, DQS, DSRA, DSRB, BSR, BSQ:

- Resistance Range means you can choose one maximum resistance value (End resistance value) at one of FVR, DQS, DSRA, DSRB, BSR, BSQ VR (Variable Resistor) type.
- After End Resistance Value confirmed, the minimum resistance (start resistance value) will be determined by depending on resistance of wire and wirewound type.

### Power Rating of Variable Resistor:

The part Number formation of FVR, DQS, DSRA, DSRB, BSR, BSQ:

Product type - Rated Wattage - Resistance Value (Ω) - Resistance Tolerance

Product type means one of FVR, DQS, DSRA, DSRB, BSR, BSQ.

Rated Wattage means power rating at End Resistance Value.

Resistance Value ( $\Omega$ ) means maximum resistance value (End Resistance Value).

Resistance Tolerance means precision range of End Resistance Value.

1. Power Rating of VR (Variable Resistor) is determined by the maximum resistance value (End Resistance Value).
2. Resistance and Power Rating should be decreased while you are adjusting the screw.

### Notes:

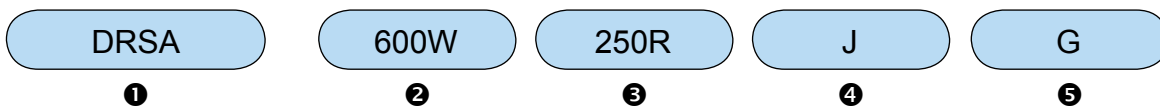
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- Wattage is proportional to this adjusted resistance value.

### Power Rating:

- Based on 25°C free air rating. The stated wattage rating applies only when the entire resistance is in the circuit.
- Setting the lug at an intermediate point reduces the wattage rating by approximately the same proportion.
- Example: If the lug is set at half resistance, the wattage is reduced by approximately one-half.

If you need current constant type or special specifications, please feel free to contact us.

### How to Order



❶ Part Number: DRSA  
DRSB

❷ Rated Power (W): 20W~1300W  
15W~20000W

❸ Resistance Value ( $\Omega$ ):

Code	Resistance Value
0R1	0.1 $\Omega$
1R	1 $\Omega$
10R	10 $\Omega$
100R	100 $\Omega$
1K	1K $\Omega$
10K	10K $\Omega$
100K	100K $\Omega$

❹ Resistance Tolerance (%)

Code	Resistance Tolerance
J	$\pm 5\%$
K	$\pm 10\%$

❺ Assembly Method

Code	Assembly Method
N	No mount.
C	Clip mount.
G	Horizontal mount.
Z	Vertical mount.

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