

# Round-Wirewound Power Resistors

## The Best Cost-Effective Power Resistor for High Energy Applications (DR)

### ► Preview

#### Features:

- Fixed, adjustable, or tapped styles are available.
- Special terminals are available for unusual applications.
- Special temperature coefficients, tolerances, and resistance value can be specified.
- Ayrton Perry type non-inductive winding formats are available. See DRS Series when required.
- Standard resistance tolerance is  $\pm 5\%$  and  $\pm 10\%$ . Closer tolerances are available upon request.
- Standard lug terminals available with or without terminal hardware.
- Single and double quick connect terminals can be specified.
- The wire is spot welded to the terminal bands and then “fastened” onto the core with a silicone, cement, or vitreous enamel coating.



#### Round Wire-wound Power Resistor Construction:

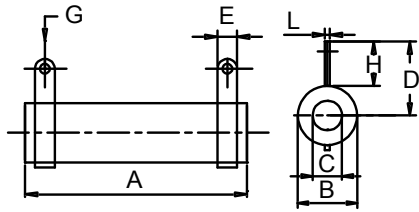
- A tubular ceramic has two terminals and is wound with copper roundwire or chromium alloy roundwire to provide the resistance.
- Coated with non-flammable resin in high temperature. Insulation is applied through a high-temperature process and the mounts are attached.
- Due to Token excellent winding technology applied, many taps can be added, impedance is low and the shape can be altered to produce many types.

#### Applications:

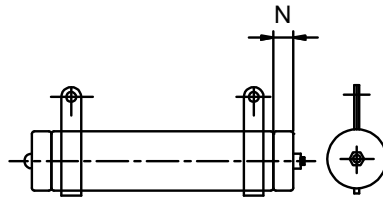
- Ideal for educational modeling applications, load testing, industrial machinery, electric power distribution, instruments, automation control installations, etc.
- Typical applications for roundwire DR series in motor/motion control include areas such as dynamic braking, motor starting, speed/torque control, industrial machinery, electric power distribution, and plugging.
- Other applications include load dumping, current limiting, elevators, UPS systems, lift trucks, and voltage dropping.

The DR Series is RoHS compliant and lead free. Order individual replacement units, entire grids with various mounting configurations, or custom specifications, please contact us to discuss the details.

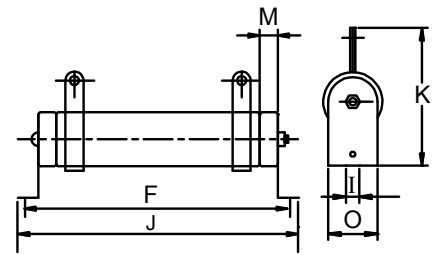
**▶ (DR-A) 10W ~ 1300W Dimensions**



Round-Wirewound Power Resistor  
(DR-A) N - No mount Dimensions



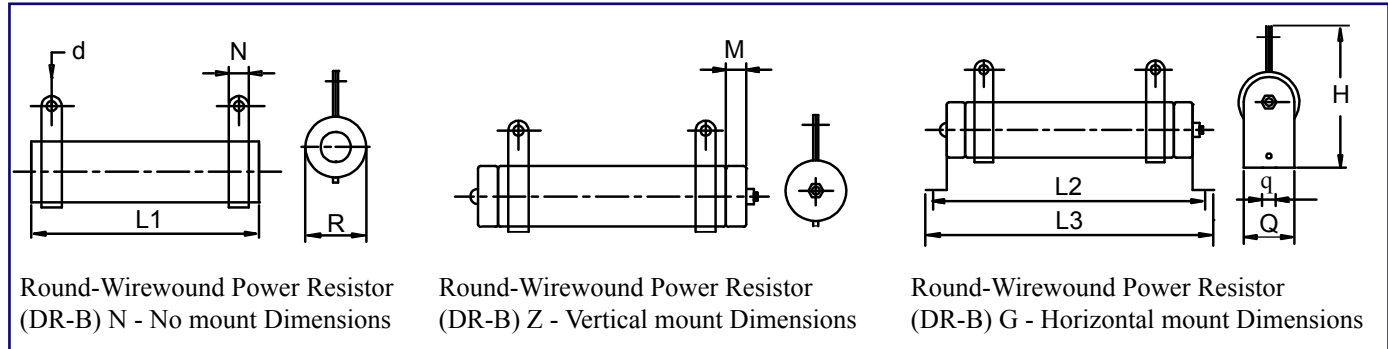
Round-Wirewound Power Resistor  
(DR-A) Z - Vertical mount Dimensions



Round-Wirewound Power Resistor  
(DR-A) G - Horizontal mount Dimensions

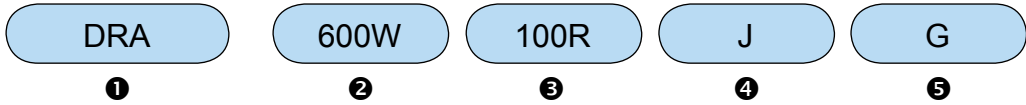
Wattage Rating	Dimensions (mm)															Resistance Range
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
10W	45	12	6	15	4	54	2	9	3	62	28	1.0	-	6	10	1~3KΩ
20W	60	17	8	22	5	78	2	12	4	90	36	1.0	-	6	16	1~7KΩ
30W	80	17	8	22	5	100	2	12	4	112	36	1.0	-	6	16	1~10KΩ
40W	110	17	8	22	5	128	2	12	4	140	36	1.0	-	6	16	1~13KΩ
50W	110	25	16	30	8	150	5	18	6	166	58	1.2	6	-	27	0.1~25KΩ
60W	90	28	18	32	8	130	5	19	6	146	60	1.2	6	-	27	0.1~30KΩ
80W	110	28	18	32	8	150	5	19	6	166	60	1.2	6	-	27	0.1~40KΩ
100W	140	28	18	32	8	180	5	19	6	196	60	1.2	6	-	27	0.1~50KΩ
120W	160	28	18	32	8	200	5	19	6	216	60	1.2	6	-	27	0.1~60KΩ
150W	195	28	18	32	8	235	5	19	6	251	60	1.2	6	-	27	0.3~75KΩ
160W	185	35	24	36	10	225	5	19	8	245	76	1.6	6	-	34	0.3~80KΩ
200W	210	35	24	36	10	250	5	19	8	274	76	1.6	6	-	34	0.3~100KΩ
250W	210	40	25	38	12	250	5	20	8	274	78	1.6	6	-	34	0.5~125KΩ
300W	260	40	25	38	12	300	5	20	8	320	78	1.6	6	-	34	0.5~150KΩ
400W	330	40	25	38	12	370	5	20	8	395	78	1.6	6	-	34	0.5~200KΩ
500W	330	50	35	50	12	380	6	25	9	400	100	1.6	8	-	40	0.5~250KΩ
600W	400	50	35	50	12	450	6	25	9	470	100	1.6	8	-	40	0.8~300KΩ
700W	460	50	35	50	12	510	6	25	9	530	100	1.6	8	-	40	0.8~350KΩ
800W	460	60	40	55	15	515	6	30	10	535	110	1.6	10	-	50	0.8~400KΩ
1000W	540	60	40	55	15	595	6	30	10	615	110	1.6	10	-	50	1~500KΩ
1300W	650	65	42	62	15	702	6	30	10	722	115	1.6	10	-	50	1~750KΩ

**(DR-B) 15W ~ 20000W 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

## How to Order



❶ Part Number: DRA  
DRB  
DRAN  
DRBN

❷ Rated Power (W): 10W~1300W  
15W~20000W  
50W~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.

*Back to 1st Page - Round-Wirewound Power Resistors (DR)*

# Non-Inductive Round Wirewound Power Resistors

▶ **Preview**

DR-\*N round-wire resistor applies Ayrton Perry non-inductive winding method to compensate residual inductance and to allow for efficient heat dissipation at higher temperature ranges.

**Non-Inductance :**

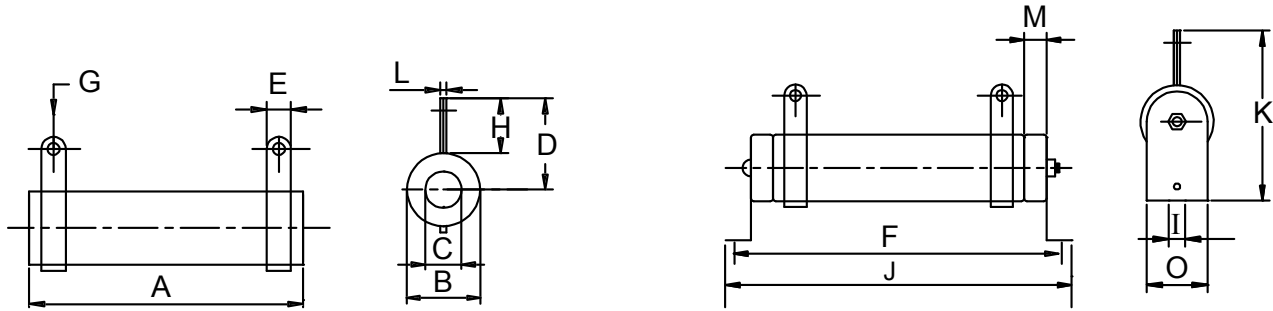
Ayrton Perry type non-inductive winding is applied. When required add “N” to the part number.

**Resistance Tolerance :**

K( $\pm 10\%$ ), J( $\pm 5\%$ )

The power DR-\*N Series is lead-free and RoHS compliant. Please contact us for details with your specific needs

**(DR-AN) 50W ~ 1300W Dimensions**

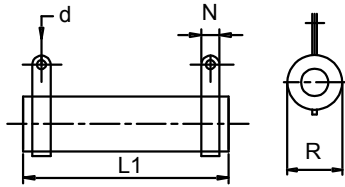


Non-Inductive Wirewound  
(DR-AN) N - No mount Dimensions

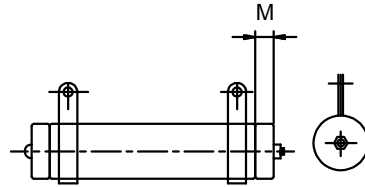
Non-Inductive Wirewound (DR-AN)  
G - Horizontal mount Dimensions

Wattage Rating	Dimensions (mm)														Resistance Range
	A	B	C	D	E	F	G	H	I	J	K	L	M	O	
50W	110	25	16	30	8	150	5	18	6	166	58	1.2	6	27	0.1~10KΩ
60W	90	28	18	32	8	130	5	19	6	146	60	1.2	6	27	0.1~12KΩ
80W	110	28	18	32	8	150	5	19	6	166	60	1.2	6	27	0.1~16KΩ
100W	140	28	18	32	8	180	5	19	6	196	60	1.2	6	27	0.1~20KΩ
120W	160	28	18	32	8	200	5	19	6	216	60	1.2	6	27	0.1~24KΩ
150W	195	28	18	32	8	235	5	19	6	251	60	1.2	6	27	0.3~3KΩ
160W	185	35	24	36	10	225	5	19	8	245	76	1.6	6	34	0.3~35KΩ
200W	210	35	24	36	10	250	5	19	8	274	76	1.6	6	34	0.3~40KΩ
250W	210	40	25	38	12	250	5	20	8	274	78	1.6	6	34	0.5~50KΩ
300W	260	40	25	38	12	300	5	20	8	320	78	1.6	6	34	0.5~60KΩ
400W	330	40	25	38	12	370	5	20	8	395	78	1.6	6	34	0.5~80KΩ
500W	330	50	35	50	12	380	6	25	9	400	100	1.6	8	40	0.5~100KΩ
600W	400	50	35	50	12	450	6	25	9	470	100	1.6	8	40	0.8~120KΩ
700W	460	50	35	50	12	510	6	25	9	530	100	1.6	8	40	0.8~140KΩ
800W	460	60	40	55	15	515	6	30	10	535	110	1.6	10	50	0.8~160KΩ
1000W	540	60	40	55	15	595	6	30	10	615	110	1.6	10	50	1~200KΩ
1300W	650	65	42	62	15	702	6	30	10	722	115	1.6	10	50	1~260KΩ

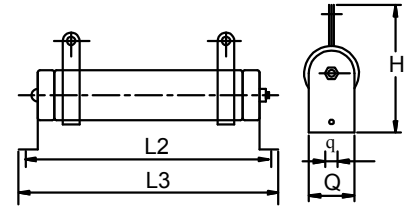
▶ (DR-BN) 15W ~ 20000W Dimensions



Non-Inductive Power Resistors  
(DR-BN) N - No mount Dimensions



Non-Inductive Power Resistors  
(DR-BN) Z - Vertical mount Dimensions



Non-Inductive Power Resistors (DR-BN)  
G - Horizontal mount Dimensions

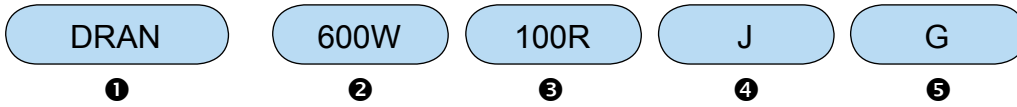
Wattage Rating	Dimensions (mm)										Resistance Range
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15W	15	45	65	85	40	6	3.5	3.5	4.5	15	1~1KΩ
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30W	20	70	100	120	50	6	3.5	5	5	20	2~1KΩ
40W	20	87	115	137	50	6	3.5	5	5	20	2~1KΩ
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100W	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
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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
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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 $1 \leq R$ $1 > R$ $\pm 5\%(J) \pm 10\%(K)$
Temperature coefficient	JIS-C-5202 5-2	$\pm 200 \text{PPM}/^\circ\text{C}$ MAX
Load rating	JIS-C-5202 5-4	$\Delta R/R \leq \pm(0.5\% + 0.1\Omega)$ Surface temperature up $350^\circ\text{C}$ MAX
Short-term overload	JIS-C-5202 5-5 1000% rated wattage 5 seconds	Free of appearance or structural irregularity $\Delta R/R \leq \pm(2\% + 0.1\Omega)$
Insulation resistance	JIS-C-5202 5-6 500VDC	100M $\Omega$ min
Dielectric withstanding voltage	JIS-C-5202 5-7 1000VDC 1 minute Between terminal and anchor stand	Free of appearance or structural irregularity $\Delta R/R \leq \pm(0.1\% + 0.05\Omega)$
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 $\Delta R/R \leq \pm(1\% + 0.05\Omega)$
Thermal shock	JIS-C-5202 7-3 Room temp 30 minutes ON- $55^\circ\text{C}$ 15 minutes OFF	Free of structural irregularity $\Delta R/R \leq \pm(2\% + 0.1\Omega)$
Humidity	JIS-C-5202 7-5 $40^\circ\text{C}$ 90%RH 240 hours	Free of appearance or structural irregularity Surface coating crack $\Delta R/R \leq \pm(3\% + 0.1\Omega)$
Load life	JIS-C-5202 7-10 90 minutes ON - 30 minutes OFF 500 hours	Free of appearance or structural irregularity Surface coating crack $\Delta R/R \leq \pm(1\% + 0.05\Omega)$
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.	



## ▶ How to Order



- ❶ Part Number: DRA  
DRB  
DRAN  
DRBN

- ❷ Rated Power (W): 10W~1300W  
15W~20000W  
50W~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.
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*Back to 1st Page - Power Non-Inductive Resistors (DRN)*