



电阻器 Resistor

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ELECTRICAL TECHNOLOGY CO., LTD**

## 波纹电阻器(RSHK) Wire Wound Resistor

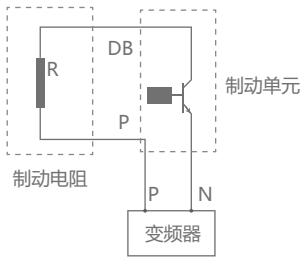
### 产品概述 (Product Introduction)

RSHK型涂料绕线电阻器是一种功率型绕线电阻器，该产品采用波状电阻合金带以侧立形式缠绕在陶瓷骨架上，表面被覆绝缘耐高温涂料，有利于散热，并配有安装支架，电阻器具有功率大，耐过载能力强，安装方便等特点。

RXHG coatings type winding resistor is a kind of power mode, the product use the wave resistance alloy in the form of side winding on the ceramic matrix The surface coating insulation resistance to high temperature coating, is conducive to heat dissipation, and is equipped with a mounting bracket, a resistor has large power, strong overload capacity resistance, convenient installation and other feature



典型电路图



### 产品应用 (Product Application)

1. 做为制动电阻保护变频器、伺服等不受电机再生电能的危害
2. 电力电子负载测试中做为阻性负载
3. 在电力电子设备中做为取样电阻、限流电阻、起动电阻、保护电阻

1. As a braking resistor to protect the inverters, servos, etc., from damage by regenerative energy of the motor;
2. As a resistive load in power electronic load tests;
3. As a sampling resistor, limiting resistor, starting resistor, or protective resistor in power electronic equipment."

### 技术规格 (Technical Specifications)

- 1.阻值及阻值允许偏差： $1\Omega \leq R \pm 5\%$  (J) ,  $1\Omega > R \pm 10\%$  (K) "
- 2.额定负荷：表面最高温度： $50 \sim 200W \leq 275^\circ C$  ,  $> 200W \leq 350^\circ C$
- 3.短时过负荷：无可见损伤， $\Delta R \leq \pm (5\%R + 0.05\Omega)$  10倍 5s
- 4.绝缘电阻： $R \geq 100M\Omega$  1min DC 1000V
- 5.耐电压：无可见损伤，无飞弧击穿  $\Delta R \leq \pm (0.1\%R + 0.05)$  AC 3000V 5S
- 6.电阻温度特性： $\pm 260PPM/^\circ C$  (小于 $5\Omega$ 以不作检测)
- 7.端子强度：无松动或机械损伤 45N 30S"
- 8.电阻体强度：无可见损伤 200N 30S
- 9.耐振性：无可见损伤， $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  f:5-200Hz  $a=1g$  X.Y.Z各2h
- 10.耐热性：除端子外无明显变色和损伤，标志清晰 $350^\circ C$  2hours
- 11.热冲击：无可见机械损伤 额定负载30分钟后- $55^\circ C$ 温度下15min
- 12.耐湿性：无可见损伤，标志清晰， $\Delta R \leq \pm (5\%R + 0.05\Omega)$   
绝缘电阻  $\geq 10M\Omega$  DC 100 40 $^\circ C$  95%RH 500hours
- 13.耐久性(额定负载)：外观无可见损伤，标志清晰， $\Delta R \leq \pm (5\%R \pm 0.05\Omega)$  100%负荷

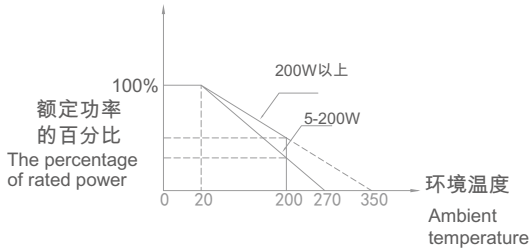
1. Resistance value and the change range :  $1\Omega \leq R \pm 5\%$  (J) ,  $1\Omega > R \pm 10\%$  (K)
2. Rated load: The maximum surface temperature,  $50 \sim 200W \leq 275^\circ C$  ,  $> 200W \leq 350^\circ C$
3. Short-time overload: No visible damage  $\Delta R \leq \pm (5\%R + 0.05\Omega)$  10 times 5s
4. Insulation resistance:  $R \geq 100M\Omega$  1min DC 1000V
5. Withstanding voltage: No visible damage, no arcing breakdown  $\Delta R \leq \pm (0.1\%R + 0.05)$  AC 3000V 5S
6. Resistance-temperature characteristic:  $\pm 260PPM/^\circ C$  ((less than  $5\Omega$  don't test
7. Terminal strength No looseness or mechanical damage 45N 30s
8. Resistance strength No visible damage 200N 30s
9. Withstanding vibration: No visible damage  $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  f:5-200Hz  $a=1g$  X.Y.Z/2h
10. Heat resistance: In addition to the terminal no obvious discoloration and damage, marked clearly  $350^\circ C$  2hours
11. Heat shock No visible mechanical damage, after 30miniate rated overload
12. Waterlogging resistance: No visible mechanical damage, marked clearly  $\Delta R \leq \pm (5\%R + 0.05\Omega)$   
Insulation resistance  $\geq 10M\Omega$  DC 100 40 $^\circ C$  95%RH 500hours
13. Durability(rated overload): No visible damage, marked clearly  $\Delta R \leq \pm (5\%R \pm 0.05\Omega)$  load 100%
8. Withstanding vibration: No visible damage  $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  f:5-200Hz  $a=1g$  X.Y.Z/2h
9. Resistance : In addition to the terminal no obvious discoloration and damage, marked clearly.  $350 \pm 5^\circ C$  , 120 $\pm 5$

■ 执行标准 (Applicable Standards)

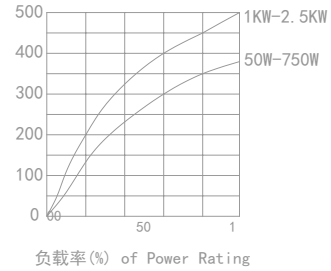
GB/T5729-1994 Fixed resistor used in electronic equipment

■ 降额曲线 (Rundown Curve)

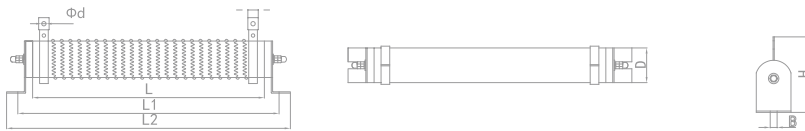
环境温度 Ambient temperature	0-20°C	>20°C
功率损耗 Power loss	100%	See figure



■ 表面温升 (Surface Temperature Rise)



■ 产品尺寸图 (Product Size)



规格 Type	额定功率(W) Rated Power	尺寸Dimension (±1mm)							
		L	L1	L2	D	B	H	N	φ d
RSHK	50	90	132	146	28	6.5	62	10	4.5
RSHK	60	90	132	146	28	6.5	62	10	4.5
RSHK	80	140	182	198	28	6.5	62	10	4.5
RSHK	100	170	212	198	28	6.5	62	10	4.5
RSHK	150	192	222	238	40	8	90	12	5.5
RSHK	200	192	222	238	40	8	90	12	5.5
RSHK	300	280	310	326	40	8	90	12	5.5
RSHK	400	280	310	326	40	8	90	12	5.5
RSHK	500	316	346	360	50	8	107	16	6
RSHK	600	316	346	360	50	8	107	16	6
RSHK	750	316	346	360	50	8	107	16	6
RSHK	1000	300	334	350	60	8.5	127	16	6
RSHK	1200	415	449	465	60	8.5	127	16	6
RSHK	1500	415	449	465	60	8.5	127	16	6
RSHK	2000	510	544	560	60	8.5	127	16	6
RSHK	2500	600	636	652	60	8.5	127	16	6

备注：其他规格尺寸，可根据用户要求制造。Remark：Dimension can be customization

■ 成品识别码 (Product Identification Code)

RSHK	—	1500W	—	40R	—	J
波纹电阻器 Wire Wound Resistor		额定功率 Rated Power		电阻阻值 Resistance Value		阻值误差 Resistance Tolerance H=±3% J=±5% K=±10%

## 铝壳电阻器(RSLK) Aluminum Enclosure Resistor

### ■ 产品概述 (Product Introduction)

RSLK系列铝壳绕线电阻器采用铝合金外壳，外形美观，该电阻具有耐候性、耐振动、安全性优于传统瓷骨架电阻器。RXLG电阻器是用一种耐高温的有机硅树脂和硅粉作基本材料封装的功率型绕线电阻。易紧密安装，易附加散热器。

RXLG series aluminum shell winding resistor using alloy enclosure, beautiful shape, beautiful shape, the resistance have the weather resistance, vibration resistance security is superior to the traditional porcelain skeleton resistor resistor .

### ■ 产品应用 (Product Application)

1. 做为制动电阻保护变频器、伺服等不受电机再生电能的危害
2. 电力电子负载测试中做为阻性负载
3. 在电力电子设备中做为取样电阻、限流电阻、起动电阻、保护电阻

1. As a braking resistor to protect the inverters, servos, etc., from damage by regenerative energy of the motor;
2. As a resistive load in power electronic load tests;
3. As a sampling resistor, limiting resistor, starting resistor, or protective resistor in power electronic equipment.

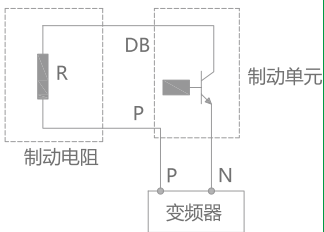
### ■ 技术规格 (Technical Specifications)

1. 电阻值以及变化范围:  $1\Omega \leq R \pm 5\%$  (J),  $1\Omega > R \pm 10\%$  (K)
2. 温度系数:  $R > 20\Omega, \pm 260 \text{ ppm}/^\circ\text{C}$   $R \leq 20\Omega, \pm 400 \text{ ppm}/^\circ\text{C}$  在  $-25 \sim 200^\circ\text{C}$  温度下实验
3. 额定负荷: 表面温度  $\leq 375^\circ\text{C}$  放在  $300 \times 300 \times 3\text{mm}$  铝板上
4. 短时过载:  $\Delta R \leq \pm (2\%R + 0.05\Omega)$  无异常同样环境下 10倍额定电压, 5秒
5. 绝缘电阻:  $R \geq 100\text{M}\Omega$  1min 无异常 DC 1000V, 焊片和外壳之间的绝缘电阻要求大于或等于  $100\text{M}\Omega$
6. 耐电压:  $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  无异常 无破坏焊片与外壳之间加 AC 3000V 5S
7. 端子强度: 无松动无异常 100N力加在焊片引出方向, 30秒
8. 耐振性: 无可见损伤,  $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  f: 10-55Hz a=1.5g X.Y.Z各2h
9. 耐热性: 除端子外无明显变色和损伤, 标志清晰加热至  $350 \pm 5^\circ\text{C}$ ,  $120 \pm 5$ 分钟
10. 热冲击:  $\Delta R \leq \pm (2\%R + 0.05\Omega)$  无异常 额定电压30分钟, 常温, 8-12秒放到  $-40 \pm 2^\circ\text{C}$  环境下, 15+5分钟. 再在常温下放置2小时
11. 耐湿性: 无可见损伤, 标志清晰,  $\Delta R \leq \pm (3\%R + 0.05\Omega)$ , 绝缘电阻  $\geq R \geq 25\text{M}\Omega$  直流电压100V,  $40 \pm 2^\circ\text{C}$ , 相对湿度90-95%, 60分钟开, 30分钟关, 持续500+24小时
12. 负载寿命: 外观无可见损伤, 标志清晰,  $\Delta R \leq \pm (5\%R \pm 0.05\Omega)$  放置在  $300 \times 300 \times 3\text{mm}$  铝板上,  $20 \pm 7^\circ\text{C}$ , 额定直流电压, 90分钟开, 30分钟关, 循环500+24小时

1. Resistance value and the change range :  $1\Omega \leq R \pm 5\%$  (J),  $1\Omega > R \pm 10\%$  (K)
2. Temperature coefficient:  $R > 20\Omega, \pm 260 \text{ ppm}/^\circ\text{C}$   $R \leq 20\Omega, \pm 400 \text{ ppm}/^\circ\text{C}$  Test when the temperature is  $-25 \sim 200^\circ\text{C}$
3. Rated load: The surface temperature  $\leq 375^\circ\text{C}$  on the  $300 \times 300 \times 3\text{mm}$  aluminum plate
4. Short-time overload:  $\Delta R \leq \pm (2\%R + 0.05\Omega)$  No abnormal environment also 10 times the rated voltage, 5second
5. Insulation resistance:  $R \geq 100\text{M}\Omega$  1min Without abnormal DC 1000v, insulation resistance between welding plate and shell is no less than  $100\text{M}\Omega$
6. Withstand voltage:  $\Delta R \leq \pm (0.1\%R + 0.05\Omega)$  No abnormal damage welding piece between the shell and AC 3000V 5S
7. Terminal strength : Without loosing without exception 100n force on welding lead direction, 30second
10. Thermal:  $\Delta R \leq \pm (2\%R + 0.05\Omega)$  No abnormal voltage rating for 30 minutes, room emperature, 8-12seconds into  $-2 \sim -40$  environment, 15+5minutes, then place 2hours at room temperature
11. Wetresistance : No visible damage, marked clearly  $\Delta R \leq \pm (3\%R + 0.05\Omega)$ , Insulation resistance  $\geq R \geq 25\text{M}\Omega$  DC voltage 100v,  $40 \pm 2^\circ\text{C}$ , Relative humidity 90-95%, 60minutes on 30 minutes off for 500+24
12. Overload: No visible damage, marked clearly  $\Delta R \leq \pm (5\%R \pm 0.05\Omega)$  on the  $300 \times 300 \times 3\text{mm}$  aluminum plate  $\pm 7^\circ\text{C}$ , Rated Dc voltage, 90 minutes on 30 minutes off for 500+24 hours



典型电路图

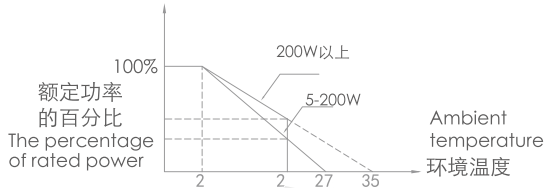


■ 执行标准 (Applicable Standards)

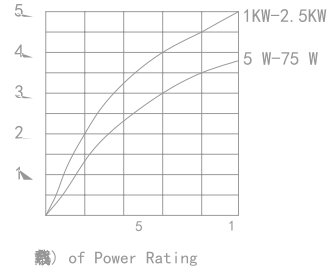
GB/T5729-1994 Fixed resistor used in electronic equipment

■ 降额曲线 (Rundown Curve)

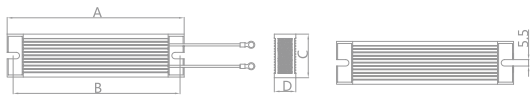
环境温度 Ambient temperature	0-20℃	>20℃
功率损耗 Power loss	100%	See figure



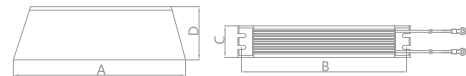
■ 表面温升 (Surface Temperature Rise)



■ 产品尺寸图 (Product Size)



Picture A



Picture B

规格 Type	图号 Product Picture	额定功率(W) Rated Power	尺寸Dimension (±1mm)				配线 (mm) Connecting Wire	引线长度 (mm) Lead Length	端子 Terminal
			A	B	C	D			
RSLK	图 A Picture A	60	115	102	40	20	1.5	250	2-5S
RSLK		80	140	127	40	20	1.5	250	2-5S
RSLK		100	165	152	40	20	1.5	250	2-5S
RSLK		120	190	177	40	20	1.5	250	2-5S
RSLK		150	215	202	40	20	2.5	250	2-5S
RSLK		200	165	152	60	30	2.5	250	2-5S
RSLK		300	215	202	60	30	2.5	250	2-5S
RSLK		400	265	252	60	30	2.5	250	2-5S
RSLK		500	335	322	60	30	2.5	250	2-5S
RSLK		800	400	41*387	60	59			M6
RSLK	图 B Picture B	1000	400	30*387	50	107			M6
RSLK		1200	450	30*437	50	107			M6
RSLK		1500	485	30*472	50	107			M6
RSLK		2000	550	30*537	50	107			M6
RSLK		2500	550	30*537	50	107			M6

备注：其他规格尺寸，可根据用户要求制造。Remark: Dimension can be customization

■ 成品识别码 (Product Identification Code)

RSLK	—	2500W	—	40R	—	J
铝壳电阻器 Aluminum Enclosure Resistor		额定功率 Rated Power		电阻阻值 Resistance Value		阻值误差 Resistance Tolerance H=±3% J=±5% K=±10%