

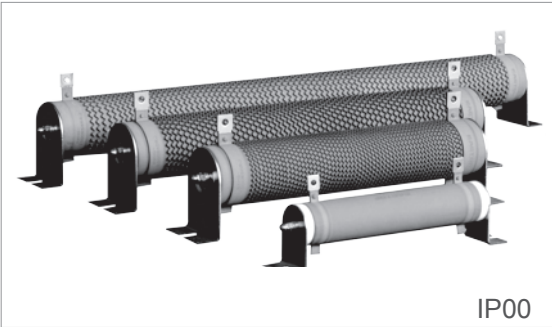
波纹电阻器

Wire Wound Resistor

产品简述 (Product Profile)

在圆柱形的陶瓷管上固定了两个引出端子，瓷管表面上缠绕了扁带波浪形状的合金电阻丝，并在其表面涂覆一层具有阻燃，耐高温特性的涂层，涂料为无机材料，环保、无烟、无异味。陶瓷管作为电阻丝骨架的同时，又具有散热器的功效。本品可按照客户的要求定制。本品适用于模拟负荷实验，设备放电，自动控制，变频器能耗制动等。

Two terminal extensions are fixed on both ends of a ceramic tube on whose surface winds wave-shaped alloy resistance wire and a high temperature-resistant and fireproof coating are applied. The coating made of inorganic materials are environmentally friendly, without smoke or undesirable odor. The ceramic tube can function as resistance wire skeleton and heat radiator as well . This product can be customized to meet special needs of customers and applicable to simulation load test, equipment discharge, automated control and inverter's energy loss brake.



产品特点 (Product Features)

1. 额定功率范围：50W~2500W

2. 工作电压范围：<1.2kV

3. 额定阻值范围：1R~10KR

4. 耐压范围：AC3KV 50Hz/5S

5. IP等级：IP00

6. 载流体材料：0Cr25AL5

7. 优势：可做高电压等级

8. 劣势：抗震性较差
1. Rated power range: 50W-2500W

2. Operating voltage range: <1.2kV

3. Rated resistance range: 1R-10KR

4. Dielectric strength: AC3KV 50Hz/5s

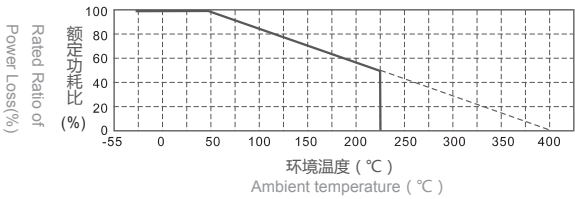
5. IP rating: IP00

6. Element material : 0Cr25AL5

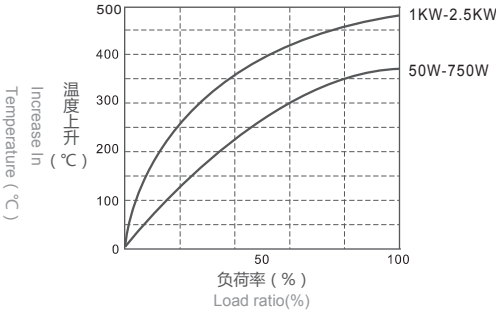
7. Advantage: high voltage application

8. Disadvantage: low vibration resistance level

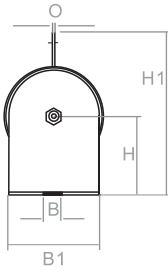
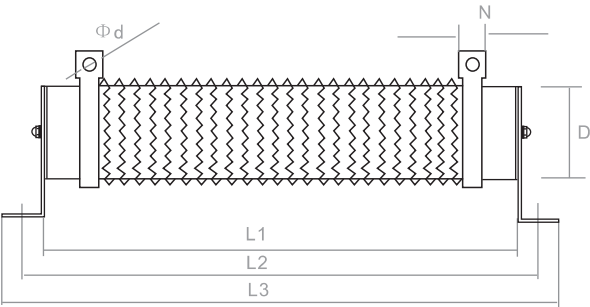
降额曲线 (Derating Curve)



表面温升 (Surface Temperature Rise)



产品尺寸图 (Product Size)



选型表 (Selection Table)

额定功率(W) Rated power(W)	尺寸 Dimension(mm)											重量 Weight(kg)	阻值范围 Resistance range(Ω)
	L1 (±2)	L2 (±5)	L3 (±3)	D (±2)	B	B1	H	H1 (±3)	N	Φ d	O		
50	102	124	146	28	6.5	28	28	62	9.5	4.5	1.2	0.15	1Ω-10KΩ
60	102	124	146	28	6.5	28	28	62	9.5	4.5	1.2	0.15	1Ω-10KΩ
80	152	174	196	28	6.5	28	28	62	9.5	4.5	1.2	0.2	1Ω-10KΩ
100	182	204	226	28	6.5	28	28	62	9.5	4.5	1.2	0.24	1Ω-10KΩ
120	182	204	226	28	6.5	28	28	62	9.5	4.5	1.2	0.24	1Ω-10KΩ
150	197	219	241	40	8	40	41	86	12	5.5	2.0	0.43	1Ω-10KΩ
200	197	219	241	40	8	40	41	86	12	5.5	2.0	0.43	1Ω-10KΩ
300	284	306	328	40	8	40	41	86	12	5.5	2.0	0.62	1Ω-10KΩ
400	284	306	328	40	8	40	41	86	12	5.5	2.0	0.62	1Ω-10KΩ
500	318	340	362	40	8	50	45	99	16	6.5	2.0	0.7	1Ω-10KΩ
600	347	369	391	40	8	40	41	86	12	5.5	2.0	0.72	1Ω-10KΩ
750	318	340	362	50	8	50	45	99	16	6.5	2.0	0.72	1Ω-10KΩ
1000	302	327	352	60	8.5	60	60	119	16	6.5	2.0	1.04	5Ω-10KΩ
1200	417	442	467	60	8.5	60	60	119	16	6.5	2.0	1.04	5Ω-10KΩ
1500	417	442	467	60	8.5	60	60	119	16	6.5	2.0	1.72	5Ω-10KΩ
2000	512	537	562	60	8.5	60	60	119	16	6.5	2.0	2.02	5Ω-10KΩ
2500	602	627	652	60	8.5	60	60	119	16	6.5	2.0	2.45	5Ω-10KΩ

ROHS规格品需在定单中描述(其他技术参数要求, 请垂询我司业务)

ROHS request should be noted in the orders.(For other parameter requirements, please consult our salespeople)

电气、机械特性 (Mechanical And Electrical Properties)

特性 Property	检查方法 Inspection method	性能要求 Performance requirements	试验标准 Test method
稳态湿热 Constant humidity-heat	40℃ 相对湿度90% 96h Temperature 40℃, RH90% 96h	$R \leq \pm(5\% \pm 0.05\Omega)$	GB5729.2.24
温度快速变化 Temperature change	-55℃ +55℃ 3次循环 -55℃ to +55℃, 3 Circles	$R \leq \pm(2\% \pm 0.05\Omega)$	GB5729.4.19
短时过负荷 Transient overload	10倍Pr 5S 10 Time Pr 5s	无可见损伤 No visible destruction $R \leq \pm(1\% \pm 0.05\Omega)$	GB5729.4.13
绝缘电阻 Insulation resistance	DC 1000V	$R \geq 100M\Omega$	GB5729.4.6
耐电压 Voltage resistibility	AC3000V 50Hz 5s	无击穿或飞弧 Free of breakage or flying arc	GB5729.4.7
负荷寿命 Life	25℃ Ur 1000h	$R \leq 20\%$	
端子强度 Terminal strength	45N 30S	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	GB5729.4.16
电阻体强度 Resistor strength	200N 30S	无可见损伤 Free of visible destruction	GB5729.4.15
耐振性 Vibration resistibility	f:5-200HZ a=1g X.Y.Z各2h	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	GB5729.4.22

成品识别码 (Product Identification Code)

RXHG	2K00	0032	9999M	K
产品类别 Product Type	功率 Rated power 50W-2500W 0020-20W 2K00-2KW	电阻阻值Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω/ 0032-32Ω/8K00-8KΩ	接线 Connection M=端子 Terminal	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%

RXHG.2K00.0032.9999M(“9999M”表示常规品, 此款产品为常规品2kW/32 R 波纹电阻器 9999M means standard product, 2kW/32R Wire Wound Resistor)

RXHG.2K00.0032.6218A(“6218A”表示客户代码, 此款产品为客户定制的2kW/32 R 波纹电阻器

6218A means customer code, customer non-standard product 2kW/32R Wire Wound Resistor)

铝壳电阻器

Aluminum Enclosure Resistor

产品简述 (Product Profile)

RXLG系列电阻器其耐候性，耐振动，安全性，优于传统瓷骨架电阻器。广泛应用于电源，变频器，伺服系统等高要求的电气回路中，并能够用于恶劣的工控环境。易紧密安装，易附加散热器。外型美观，是电力电子理想的配套产品。

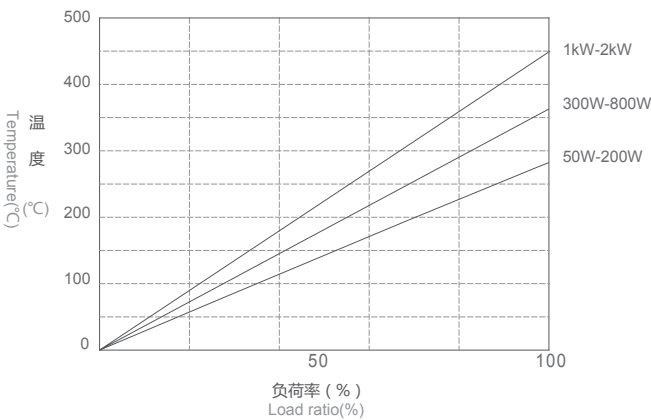
RXLG series resistors are superior to conventional ceramic-skeleton resistors in terms of weatherproof , oscillation-resistant and safety , and are widely applied to electrical circuits demanding high adaptability to bad industrial operating conditions such as power supply , inverters and servo systems. They can be easily fixed in an airtight manner and with an additional radiator. With neat appearance, it is an ideal auxiliary product for power and electronic products.



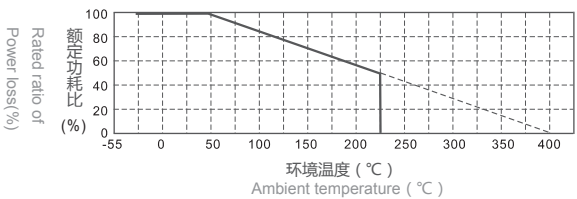
产品特点 (Product Features)

1. 额定功率范围：60W~2000W
 2. 工作电压范围：<1.2kV
 3. 额定阻值范围：1R~10kR
 4. 耐压范围：AC3KV 50Hz/5s
 5. IP等级：IP00/IP33
 6. 振动：1.5g
 7. 温漂范围：≤400ppm/°C
 8. 载流体材料：0Cr25AL5
 9. 优势：较恶劣工作环境
 10. 劣势：工作电压不是很高
1. Rated power range: 60W-2000W
 2. Operating voltage range: <1.2kV
 3. Rated resistance range: 1R-10kR
 4. Dielectric strength: AC3KV 50Hz/5s
 5. IP rating: IP00/IP33
 6. Vibration: 1.5g
 7. Temperature coefficient: ≤400ppm/°C
 8. Element material: 0Cr25AL5
 9. Advantage: for harsh environment
 10. Disadvantage: low operating voltage

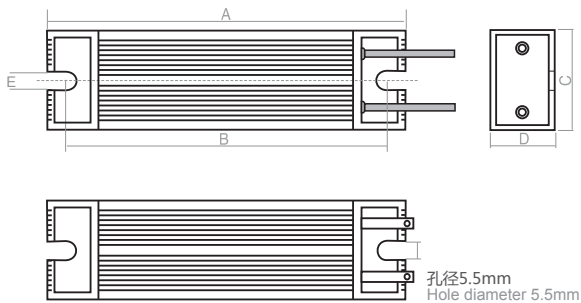
表面温升 (Surface Temperature Rise)



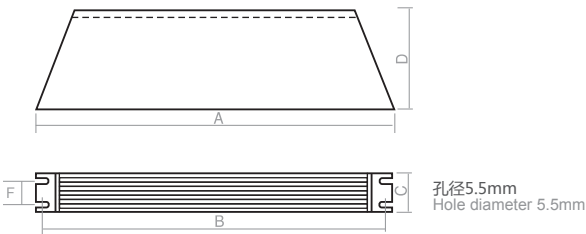
降额曲线 (Derating Curve)



产品尺寸图 (Product Size)



图A Picture A



图B Picture B

产品尺寸表 (Product Size)

规格 Type	功率 Rated power(W)	外型图 Product picture	尺寸 Dimension(mm)						配线 Connecting wire(mm)	引线长度 Lead length (mm)	接线端子 Terminal	重量 Weight(Kg)	阻值范围 Resistance range(Ω)	出线方式 Connection
			A	B	C	D	E	F						
RXLG	60	图 A Picture A	115	98	40	20	5.5		1.5	500	2-5S	0.165	1Ω-10KΩ	引线 Cable
RXLG	80		140	123	40	20	5.5		1.5	500	2-5S	0.2	1Ω-10KΩ	
RXLG	100		165	148	40	20	5.5		1.5	500	2-5S	0.24	1Ω-10KΩ	
RXLG	120		190	173	40	20	5.5		1.5	500	2-5S	0.28	1Ω-10KΩ	
RXLG	150		215	198	40	20	5.5		1.5	500	2-5S	0.32	1Ω-10KΩ	
RXLG	200		165	147	60	30	5.5		1.5	500	2-5S	0.464	1Ω-10KΩ	
RXLG	300		215	198	60	30	5.5		1.5	500	2-5S	0.62	1Ω-10KΩ	
RXLG	400		265	247	60	30	5.5		1.5	500	2-5S	0.8	1Ω-10KΩ	
RXLG	500		335	317	60	30	5.5		1.5	500	2-5S	1.03	1Ω-10KΩ	
RXLG	800	图 B Picture B	400	382	61	59		40.5	5.5		M6	2.2	1Ω-10KΩ	端子 Terminal
RXLG	1000		400	384	50	107		30	5.5		M6	3.6	5Ω-10KΩ	
RXLG	1200		450	434	50	107		30	5.5		M6	4	5Ω-10KΩ	
RXLG	1500		485	469	50	107		30	5.5		M6	4.35	5Ω-10KΩ	
RXLG	2000		550	534	50	107		30	5.5		M6	4.9	5Ω-10KΩ	

ROHS规格品需在定单中描述(其他技术参数要求, 请垂询我司业务)
ROHS request should be noted in the orders.(For other parameter requirements, please consult our salespeople)

电气、机械特性 (Mechanical And Electrical Properties)

特性 Property	检查方法 Inspection method	性能要求 Performance requirements	试验标准 Test method
稳态湿热 Constant humidity-heat	40°C 相对湿度(度90-95)% 96h Temperature 40°C,RH(90-95)% 96h	$R \leq \pm(5\% \pm 0.05\Omega)$	GB5729.2.24
温度快速变化 Temperature change	-55°C +55°C 3次循环 -55°C to +55°C,3 Circes	$R \leq \pm(2\% \pm 0.05\Omega)$	GB5729.4.19
短时过负荷 Transient overload	10倍Pr 5S 10 Time Pr 5s	无可见损伤 No visible destruction $R \leq \pm(1\% \pm 0.05\Omega)$	GB5729.4.13
绝缘电阻 Insulation resistance	DC 1000V	$R \geq 100M\Omega$	GB5729.4.6
耐电压 Voltage resistibility	AC3000V 50Hz 5s	无击穿或飞弧 Free of breakage or flying arc	GB5729.4.7
负荷寿命 Life	25°C Ur 1000h	$R \leq 20\%$	
端子强度 Terminal strength	45N 30S	无可见损伤 Free of visible destruction	GB5729.4.16
耐振性 Vibration resistibility	f:5-200HZ a=1g X.Y.Z各2h	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	GB5729.4.22

成品识别码 (Product Identification Code)

RXLG	2K00	0032	9999G	J
产品类别 Product type	功率 Rated power 50W-2000W 0020-20W 2K00-2KW	电阻阻值Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω/ 0032-32Ω/8K00-8KΩ	接线 Connection G=端子 Terminal H=引线 Lead	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%

RXLG.2K00.0032.9999G(“9999G”表示常规品,此款产品为常规品2kW/32 R 铝壳电阻器 9999G means standard product, 2kW/32R Aluminum Enclosure Resistor)
RXLG.2K00.0032.6218A(“6218A”表示客户代码,此款产品为客户定制的2kW/32 R 铝壳电阻器
6218A means customer code, customer non-standard product 2kW/32R Aluminum Enclosure Resistor)

高防护铝壳电阻器

High Protective Aluminum Resistor

产品简述 (Product Profile)

RHPA系列电阻器防护等级高达IP54，散热性能好，外形美观，适用于环境要求比较高的场合。

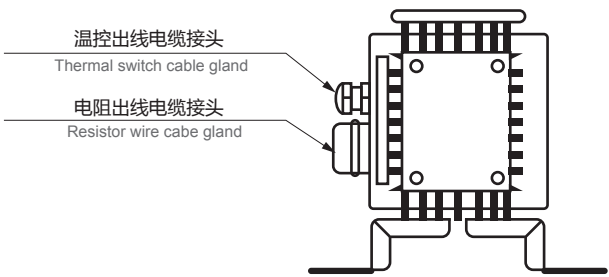
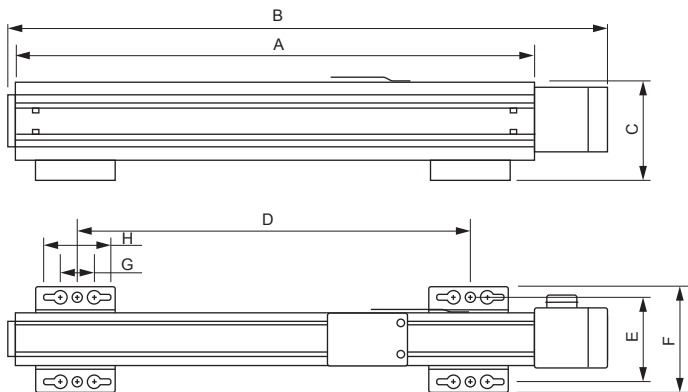
RHPA series resistors whose Ingress Protection can reach up to IP54 are designed with good dissipation and neat appearance ,applicable to environmentally demanding conditions.



产品特点 (Product Features)

- | | |
|----------------------|---|
| 1. 额定功率范围：300W~2000W | 1. Rated power range: 300W~2000W |
| 2. 工作电压范围：<690V | 2. Operating voltage range:<690V |
| 3. 额定阻值范围：1R~10KR | 3. Rated resistance range: 1Ω~10KΩ |
| 4. 散热器外壳，温升更低 | 4. Lower temperature rise due to heat sinking case |
| 5. 带内置温控开关 | 5. With thermal switch |
| 6. 铸铝接线盒，防护等级 > IP54 | 6. Die-casting aluminum connection box, IP rating: more than IP54 |

产品尺寸图 (Product Size)



产品尺寸表 (Product Size)

规格 Type	功率 Rated power(W)	外型图 Product picture	尺寸 Dimension(mm)								阻值 Resistance value(Ω)
			A	B	C	D	E	F	G	H	
RHPA	300	图 A Picture A	295	366	115	195	105	127	30	49.5	1Ω-10kΩ
RHPA	500		295	366	115	195	105	127	30	49.5	1Ω-10kΩ
RHPA	800		380	451	115	280	105	127	30	49.5	1Ω-10kΩ
RHPA	1000		426	497	115	326	105	127	30	49.5	5Ω-10kΩ
RHPA	1200		526	597	115	426	105	127	30	49.5	5Ω-10kΩ
RHPA	1500		626	697	115	526	105	127	30	49.5	5Ω-10kΩ
RHPA	1800		726	797	115	626	105	127	30	49.5	5Ω-10kΩ
RHPA	2000		726	797	115	626	105	127	30	49.5	5Ω-10kΩ

其他技术参数要求, 请垂询我司业务

For other technical parameters & requirments, please contact our company's salespeople

产品参数 (Product Parameters)

规格 Type	功率 Rated power(W)	最大温升 (K @40°C) Max. temperature rise (K @40°C)	制动功率 Braking power				时间常数 Time constant	阻值范围 Resistance range(Ω) ±5%
			P 1/120 kW@40°C	P 5/120 kW@40°C	P 10/120 kW@40°C	P 40/120 kW@40°C		
RHPA	300	300	9	3	1.5	0.9	1000	1Ω-10kΩ
RHPA	500	300	15	5	2.5	1.5	1000	1Ω-10kΩ
RHPA	800	380	30	10	5	3	1000	1Ω-10kΩ
RHPA	1000	400	36	12	6	3.6	1800	5Ω-10kΩ
RHPA	1200	450	45	15	7.5	4.5	1800	5Ω-10kΩ
RHPA	1500	450	54	18	9	5.4	1800	5Ω-10kΩ
RHPA	1800	450	60	20	10	6	1800	5Ω-10kΩ
RHPA	2000							5Ω-10kΩ

其他技术参数要求, 请垂询我司业务

For other technical parameters & requirments, please contact our company's salespeople

成品识别码 (Product Identification Code)

RHPA	0500	0032	9999G	J
产品类别 Product Type	功率 Rated tower 60W-500W 0020-20W 2K00-2KW	电阻阻值 Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω/ 0032-32Ω/8K00-8KΩ	接线 Connection G=端子Terminal	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%

RHPA.0500.0032.9999G(“9999G”表示常规品,此款产品为常规品2kW/32 R高防护铝壳电阻器

9999G means standard product, 2kW/32R High Protective Aluminum Resistor)

RHPA.0500.0032.6218A(“6218A”表示客户代码,此款产品为客户定制的2kW/32 R高防护铝壳电阻器

6218A means customer code, customer non-standard product 2kW/32R High Protective Aluminum Resistor)

压铸铝电阻器

Die-Casting Aluminum Resistor

产品简述 (Product Profile)

REHT 系列压铸铝电阻器其耐振性、防护等级、耐冲击性、热阻小等由于传统的铝壳电阻器，适用于加热模块上电缓冲，变频制动，伺服系统等场合，能应用于环境比较恶劣的场合。

REHT series aluminum die-casting resistors are applicable to harsh environments, which are superior to traditional aluminum enclosure resistors in resistance to vibration, protection grade, impact resistance, small heat resistance, applicable to the buffer of the electric heating module, conversion braking, servo system and so on.

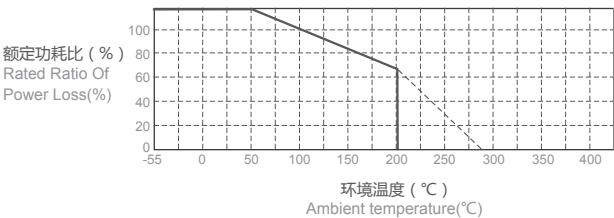


产品特点 (Product Features)

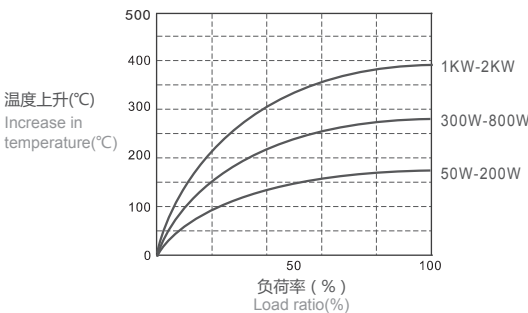
- 1. 额定功率范围: 60W-2000W
- 2. 工作电压范围: $\leq 690V$
- 3. 额定阻值范围: 2Ω - 500Ω
- 4. 耐压范围: AC2000V 50Hz/5S
- 5. IP等级: IP00/IP54
- 6. 优势: 防护等级高，抗振性好，热阻小，抗冲击性好
- 7. 劣势: 电压等级比较低

- 1. Rated power range: 60W-2000W
- 2. Operating voltage range: $\leq 690V$
- 3. Rated resistance range: 2Ω - 500Ω
- 4. Dielectric strength: AC2000V 50Hz/5S
- 5. IP rating: IP00/IP54
- 6. Advantages: high protection level, good vibration resistance, low heat resistance, good performance under surge current
- 7. Disadvantages: low voltage grade

降额曲线 (Derating Curve)



表面温升 (Surface Temperature Rise)



产品尺寸图 (Product Size)

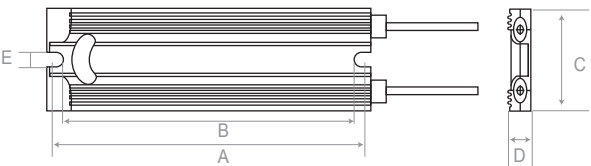


图 A Picture A

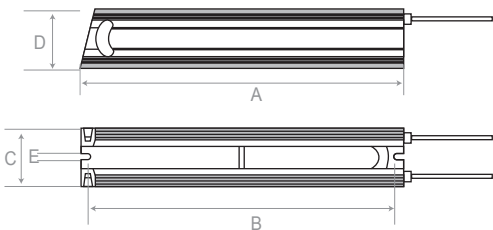


图 B Picture B

产品尺寸表 (Product Size)

规格 Type	功率 Rated power(W)	外型图 Product picture	尺寸 Dimension(mm)					配线 Connecting wire(mm)	引线长度 Lead length (mm)	接线端子 Terminal	重量 Weight(Kg)	阻值 Resistance value(Ω)
			A	B	C	D	E					
REHT	60	图 A Picture A	115	98	38	14	5.5	2.5	500	2-5S	0.15	2Ω-100Ω
REHT	80		115	98	38	14	5.5	2.5	500	2-5S	0.15	2Ω-100Ω
REHT	100		165	148	38	14	5.5	2.5	500	2-5S	0.19	2Ω-100Ω
REHT	120		165	148	38	14	5.5	2.5	500	2-5S	0.19	2Ω-100Ω
REHT	150		215	198	38	14	5.5	2.5	500	2-5S	0.25	2Ω-100Ω
REHT	200		165	147	60	23	5.5	2.5	500	2-5S	0.47	2Ω-200Ω
REHT	300		215	198	60	23	5.5	2.5	500	2-5S	0.66	2Ω-200Ω
REHT	400		265	247	60	23	5.5	2.5	500	2-5S	0.79	2Ω-200Ω
REHT	500		335	317	60	23	5.5	2.5	500	2-5S	0.95	2Ω-200Ω
REHT	800		400	384	50	50	5.5	4	500	3.5-6S	1.14	2Ω-500Ω
REHT	1000	图 B Picture B	400	384	50	50	5.5	4	500	3.5-6S	1.14	2Ω-500Ω
REHT	1200		485	384	50	50	5.5	4	500	3.5-6S	1.50	2Ω-500Ω
REHT	1500		485	469	50	50	5.5	4	500	3.5-6S	1.50	2Ω-500Ω
REHT	2000		550	534	50	50	5.5	4	500	3.5-6S	1.79	2Ω-500Ω

(其他技术参数要求, 请垂询我司业务 For other technical parameters & requirments, please concact our company's salespeople)

电气、机械特性 (Mechanical And Electrical Properties)

特性 Property	检查方法 Inspection method	性能要求 Performance requirements	试验标准 Test method
稳态湿热 Constant humidity-heat	40°C 相对湿度90% 96h	$R \leq \pm(5\% \pm 0.05\Omega)$	GB5729.2.24
温度快速变化 Temperature change	-55°C +55°C 3次循环	$R \leq \pm(2\% \pm 0.05\Omega)$	GB5729.4.19
短时过负荷 Transient overload	10倍Pr 5S	无可见损伤 No visible destruction $R \leq \pm(1\% \pm 0.05\Omega)$	GB5729.4.13
绝缘电阻 Insulation resistance	DC 1000V	$R \geq 100M\Omega$	GB5729.4.6
耐电压 Voltage resistibility	AC2000V 50Hz 5s	无击穿或飞弧 Free of breakage or flying arc	GB5729.4.7
负荷寿命 Life	25°C Ur 1000h	$R \leq 20\%$	
端子强度 Terminal strength	45N 30S	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	GB5729.4.16
电阻体强度 Resistor strength	200N 30S	无可见损伤 Free of visible destruction	GB5729.4.15
耐振性 Vibration resistibility	f:5-200HZ a=3g X.Y.Z各2h	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	IEC-6072/-3-32002

成品识别码 (Product Identification Code)

REHT	2K00	20R	K	J
产品类别 Product type	功率 Rated power 50W-2000W 0020-20W 2K00-2KW	电阻阻值 Resistance value(ohm) (Ω)indicates resistance value in units of ohms	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%	接线 Connection H=引线 Lead

REHT.2K00.0020.9999H(“9999H”表示常规品, 此款产品为常规品2kW/20R压铸铝电阻器

9999H means standard product, 2kW/20R Die-Casting Aluminum Resistor)

REHT.2K00.0020.6218A(“6218A”表示客户代码, 此款产品为客户定制的2kW/32R压铸铝电阻器

6218A means customer code, customer non-standard product 2kW/20R Die-Casting Aluminum Resistor)

仿真图 (Simulation Picture)

(仿真图, 见P93图C Simulation Picture, Please refer to Page 93, Picture C)

铝壳多联体电阻器
Aluminum Resistor Multi-Unit

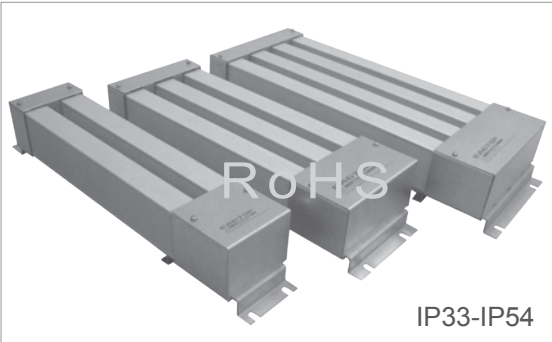
GB/T5729-1994 电子设备用固定电阻器
第一部分：总规范

GB/T5729-1994 Fixed resistor used in electronic equipment
Part 1: Generic specification

产品简述 (Product Profile)

ARXU系列电阻器在传统铝壳电阻器两端加装不锈钢挡片，进行密封，并在两端加装支架对薄弱部分进行保护，使其IP等级达到IP54。

ARXU series resistors are combined ones. Extra stainless plate shields and stands are fixed at the two ends of traditional Aluminum Enclosure Resistors in order to seal resistors properly and protect the fragile parts, so the Ingress Protection could reach IP54.



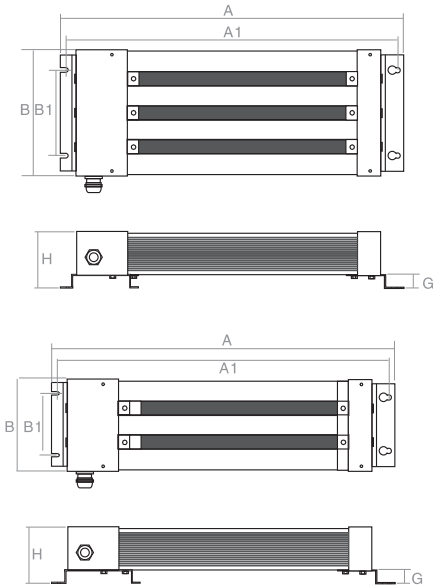
产品特点 (Product Features)

- 1. 耐压：AC3000V 50Hz 5S
 - 2. 绝缘电阻：线-地1000VDC，绝缘阻值≥100MΩ
 - 3. 额定功率：200W~3000W
- 1.Dielectric strength:AC 3000V 50Hz 5s
 - 2.Insulation resistance:DC1000V ≥100 MΩ
 - 3.Rated power:200W-3000W

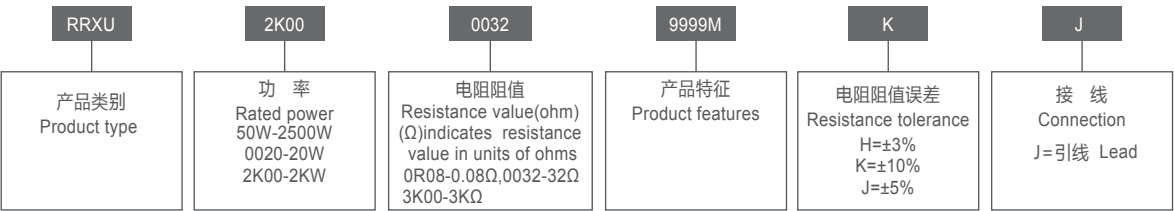
产品尺寸图 (Product Size)

Table with 10 columns: 规格 Type, 功率 Rated power(W), 尺寸 Dimension(mm) (A, A1, B, B1, G, H), 配线 Connecting Wire(mm), 引线长度 Lead length (mm), 阻值范围 Resistance range(Ω). Rows include RRXU (单联体), RRXU (双联体), RRXU (三联体), RRXU (四联体), and RRXU (五联体) with various power ratings and dimensions.

(其他技术参数要求，请垂询我司业务
For other technical parameters & requirments, please contact our company's salespeople.)



成品识别 (Product Identification Code)

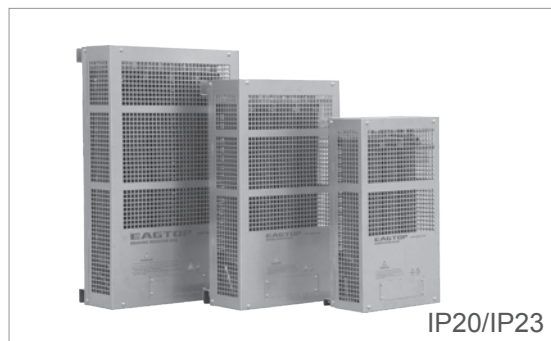


ARXU.2K00.0032.9999M(9999M表示常规品2 K W/32 R 铝壳多联体电阻器 9999M means standard product 2kW/32R Aluminum Enclosure Resistor)
ARXU.2K00.0032.6218A (9999M表示 “6218” 客户非标品2 K W/32 R 铝壳多联体电阻器 9999M means customer non-standard product 2kW/32R Wire Wound Resistor)

产品简述 (Product Profile)

BRU系列产品是由波纹电阻器组合而成的电阻箱，适用于大功率，大电流的制动设备、试验测试设备、电梯、起重等变频器的能耗制动回路中。

The BRU series of products are resistor boxes that are assembled with Wire Wound Resistors and are applicable to power-consuming circuits of inverters for braking equipment with high rated power and current, testing equipment, elevators and cranes.



产品特点 (Product Features)

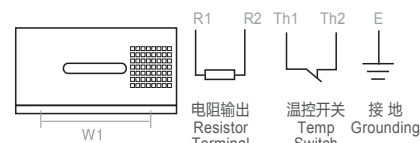
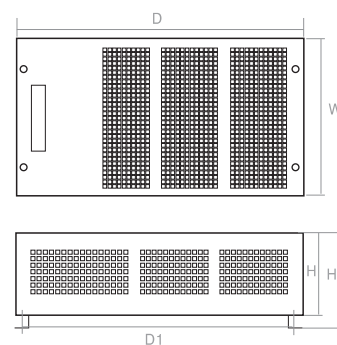
- | | |
|----------------------|---|
| 1.额定功率范围:2.4KW-20KW | 1.Rated power range:2.4KW-20KW |
| 2.工作电压范围:<800V | 2.Operating voltage range:<800V |
| 3.额定阻值范围:1R-1KR | 3.Rated resistance range: 1R-1KR |
| 4.耐压范围:AC3KV/5S | 4.Dielectric strength:AC 3KV 50Hz 5S |
| 5.IP等级:IP20/IP23 | 5.IP rating:IP20/IP23 |
| 6.振动:0.5g | 6.Vibration:0.5g |
| 7.温漂范围:≤400ppm/°C | 7.Temperature coefficient:≤400ppm/°C |
| 8.载流体材料:0Cr25AL5 | 8.Element material:0Cr25AL5 |
| 9.优势:较恶劣工作环境 | 9.Advantages:applicable to relatively harsh operating environment |
| 10.劣势:工作电压不是很高,<800V | 10.Disadvantages: operating voltage is not very high, <800V |

产品尺寸图 (Product Size)

规格 Type	功率 Rated power(KW)	尺寸 Dimension(mm)						端子台 螺钉 Terminal	重量 Weight (kg±10%)	建议配线 Cable (mm)	阻值范围 Resistance range(Ω)	组合 Combination
		W ±3mm	D ±3mm	H ±3mm	H1 ±4mm	D1 ±4mm	W1 ±4mm					
BRU	2.4	251	500	117	147	480	180	M6	7.3	6	1Ω-1KΩ	600W*4
	3.0	281	500	132	161	480	240	M6	9.5	6	1Ω-1KΩ	750W*4
	4.5	341	600	142	172	560	291	M6	12.5	10	1Ω-1KΩ	1.5Kw*4
BRU	4.8	341	600	142	172	560	291	M6	12.5	10	1Ω-1KΩ	1.5Kw*4
	6.0	341	600	142	172	560	291	M6	12.5	10	1Ω-1KΩ	1.5Kw*4
	8.0	410.5	685	142	172	642	340	M6	15.4	10	1Ω-1KΩ	2.0Kw*4
BRU	10	410.5	685	142	172	642	340	M6	17.2	16	1Ω-1KΩ	2.0Kw*5
	16	410.5	685	142	344	642	340	M6	30.8	16	1Ω-1KΩ	8.0Kw*2
	20	410.5	685	142	344	642	340	M6	34.4	16	1Ω-1KΩ	10Kw*2

(其他技术参数要求，请垂询我司业务)

For other technical parameters & requirments, please contact our company's salespeople)



成品识别 (Product Identification Code)

RBRU	2K00	0032	8888M	K
产品类别 Product type	功率 Rated power 50W-2500W 0020-20W 2K00-2KW	电阻阻值 Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω,0032-32Ω 1K00-1KΩ	接线 Connection M=端子 Terminal	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%

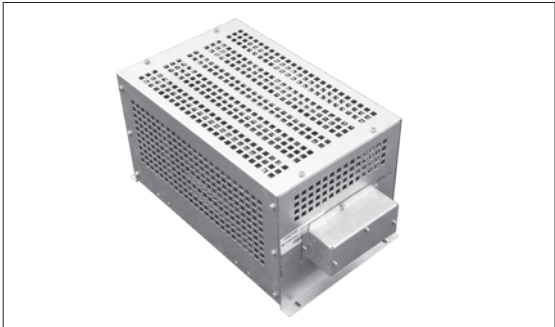
电热管电阻箱

Steel Tube Resistor Box

产品简述 (Product Profile)

电热管电阻箱，主要由电热管电阻器组装而成，适用于大功率，大电流的制动设备、轨道交通、新能源、实验测试设备、电梯、起重等变频器的能耗制动回路中。

Steel Tube Resistor Boxes are mainly assembled by electrically heated tube resistors, applicable to the dynamic braking circuits in the inverters of high-power, high-current braking equipment, rail transportation, new energy, laboratory testing equipment, elevators, cranes, etc.



产品特点 (Product Features)

- 1.额定功率范围：1KW-10KW

2.工作电压范围：≤ 1.2KV

3.额定阻值范围：2R-1KR

4.耐压范围：2.5KV 5S 50HZ

5.IP等级：IP20

6.振动：0.5g

7.温漂范围：≤400ppm/°C

8.载流体材质：0Cr25Al5

9.优势：可用于比较恶劣环境
1. Rated power range: 1KW-10KW

2. Operating voltage range: ≤1.2KV

3. Rated resistance range: 2R-1KR

4. Dielectric strength: AC2.5KV 50Hz/5s

5. IP rating: IP20

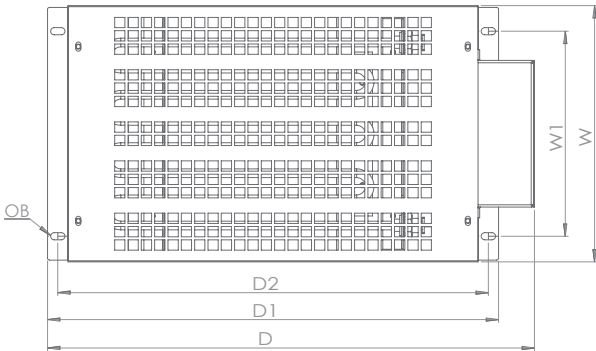
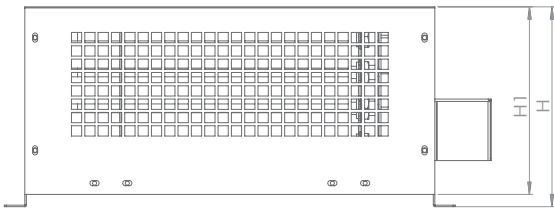
6. Vibration: 0.5g

7. Temperature coefficient : ≤400ppm/°C

8. Element material: 0Cr25Al5

9. Advantages : applicable to relatively harsh environment

产品尺寸 (Product Size)

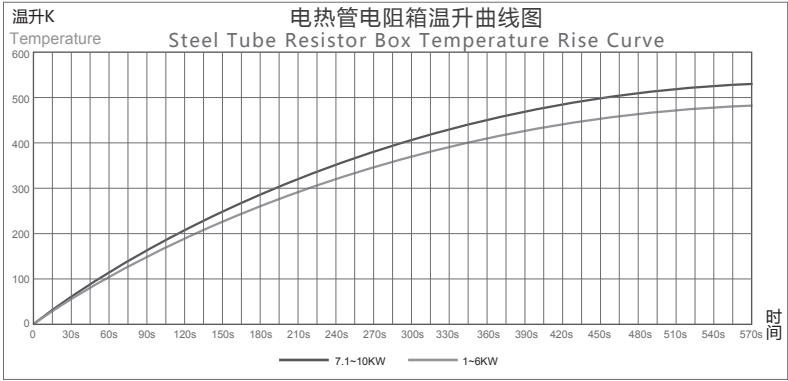
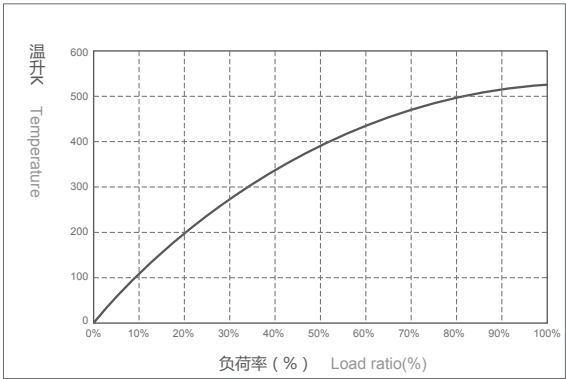


型号 Type	功率 Rated power(KW)	D	W	H	D1	D2	W1	H1	OB	阻值范围 Resistor range	配线 Cable (mm²)	制动周期120S情况下，不同制动时间的制动功率 Braking power in different time each 120s			
												12s	24s	36s	48s
RTRB	1.5	475	250	90	440	420	200	80	7*14	3Ω-500Ω	4	17KW	8KW	5KW	4KW
	3	475	250	125	440	420	200	115	7*14	3Ω-500Ω	4	33KW	15KW	10KW	8KW
	4.5	475	250	160	440	420	200	150	7*14	3Ω-500Ω	4	50KW	23KW	15KW	12KW
	6	475	250	195	440	420	200	185	7*14	2Ω-1KΩ	6	66KW	30KW	20KW	15KW
	8	475	250	230	440	420	200	220	7*14	2Ω-1KΩ	6	77KW	39KW	26KW	20KW
	10	475	250	265	440	420	200	255	7*14	2Ω-1KΩ	10	97KW	49KW	33KW	24KW

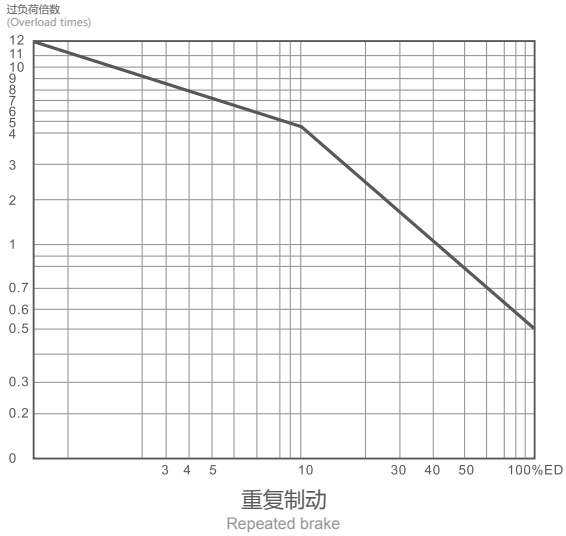
电气、机械特性 (Mechanical and Electrical Properties)

特性 Property	检查方法 Inspection method	性能要求 Requirement	试验标准 Test method
稳态湿热 Constant humidity-heat	40°C 相对湿度(度90-95)% 96h Temperature 40°C,RH(90-95)% 96h	$R \leq \pm(5\% \pm 0.05\Omega)$	GB5729.2.24
温度快速变化 Temperature change	-55°C +55°C 3次循环 -55°C to +55°C,3 Circes	$R \leq \pm(2\% \pm 0.05\Omega)$	GB5729.4.19
短时过负荷 Transient overload	10倍Pr 5S 10 Time Pr 5s	无可见损伤 No visible destruction $R \leq \pm(1\% \pm 0.05\Omega)$	GB5729.4.13
绝缘电阻 Insulation resistance	DC 1000V	$R \geq 100M\Omega$	GB5729.4.6
耐电压 Voltage resistibility	AC3000V 50Hz 5s	无击穿或飞弧 Free of breakage or flying arc	GB5729.4.7
负荷寿命 Life	25°C Ur 1000h	$R \leq 20\%$	
端子强度 Terminal strength	45N 30S	无可见损伤 Free of visible destruction	GB5729.4.16
耐振性 Vibration resistibility	f:5-200HZ a=1g X.Y.Z各2h	无可见损伤 $R \leq \pm(1\%R + 0.05\Omega)$ Free of visible destruction	GB5729.4.22

表面温升 (Surface Temperature Rise)



电阻器允许过负荷倍数
(Resistor Overload Capability)



成品识别码 (Product Identification Code)

RTRB	2K00	0032	9999M	K
产品类别 Product type	功率 Rated power 0020-20W 2K00-2KW	电阻阻值Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω 0032-32Ω 1K00-1KΩ	接线 Connection M=端子 Terminal	电阻阻值误差 Resistance tolerance H=3% K=10% J=5%

产品简述 (Product Profile)

PRU系列产品是由波纹电阻器组合而成的电阻柜，适用与大功率，大电流的制动设备，试验测试设备，电梯，起重等变频器的能耗制动回路中。

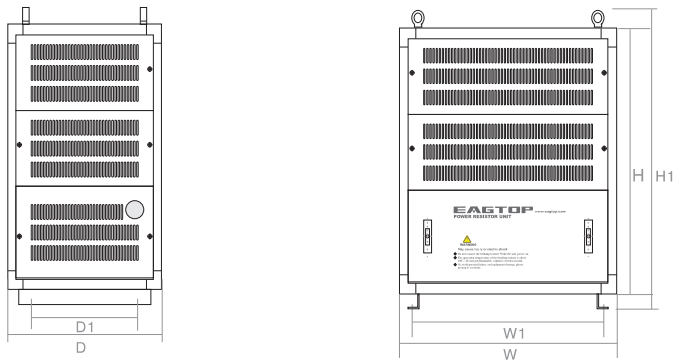
PRU series of products are resistor cabinets made up of Wire Wound Resistors and can be applied to the dynamic braking circuits in the inverters of high-power, high-current braking equipment, laboratory testing equipment, elevators, cranes, etc.



产品特点 (Product Features)

- | | |
|---------------------------|--|
| 1. 额定功率范围：30kW~200kW | 1. Rated power range: 30kW-200kW |
| 2. 工作电压范围：<1200V | 2. Operating voltage range: <1200V |
| 3. 额定阻值范围：0.5R~100R | 3. Rated resistance range: 0.5kR-100kR |
| 4. 耐压范围：AC 3KV 50Hz 5s | 4. Dielectric strength: AC 3KV 50Hz 5s |
| 5. IP等级：IP00/IP23 | 5. IP rating: IP00/IP23 |
| 6. 振动：0.5g | 6. Vibration: 0.5g |
| 7. 温漂范围：≤400ppm/°C | 7. Temperature coefficient: ≤400ppm/°C |
| 8. 载流体材料：0Cr25AL5 | 8. Element material: 0Cr25AL5 |
| 9. 优势：大功率 | 9. Advantage: high power |
| 10. 劣势：抗震动性稍差 | 10. Disadvantage: low vibration resistance level |
| 11. 用于电梯、起重大功率制动回路，模拟负荷测试 | 11. For the high-power braking circuits of cranes and elevators and simulation load test |

产品尺寸图 (Product Size)



选型表 (Selection Table)

规格 Type	功率 Rated power(KW)	尺寸 Dimension(mm)						端子 Terminal	重量 Weight (kg)	配线 Cable	组合 Combination	阻值范围 Resistance range(Ω)
		W	D	H	H1	D1	W1					
PRU	30	700	500	1100	1185	342	615	M6	73.4	16	12*2.5KW	0.4Ω-1KΩ
	40	700	500	1100	1185	342	615	M6	86.8	25	16*2.5KW	0.4Ω-1KΩ
	50	700	500	1500	1585	342	615	M6	100.2	25	20*2.5KW	0.2Ω-1KΩ
	60	700	500	1500	1585	342	615	M6	113.6	35	24*2.5KW	0.2Ω-1KΩ
	70	700	500	1800	1885	342	615	M6	127	35	28*2.5KW	0.2Ω-1KΩ
	80	700	500	1800	1885	342	615	M6	138.5	50	32*2.5KW	0.1Ω-1KΩ
	90	700	500	2000	2085	342	615	M6	155.3	50	36*2.5KW	0.1Ω-1KΩ
	100	700	500	2000	2085	342	615	M6	165.3	50	40*2.5KW	0.1Ω-1KΩ
	200	1400	500	2000	2085	342	615	M6	330.6	75	2*100KW	0.1Ω-1KΩ

如需要更大功率电阻器，请来电咨询 (If you need higher power resistors, please contact us)

如需长时负载使用，请来电咨询 (For long load usage, please contact us)

供选配件 (Optional Parts)

散热轴流风机(AC Axial Cooling Fan), 户外型防雨百叶窗盖板(Outdoor Rainproof Shutter Cover)

成品识别 (Product Identification Code)

RPRU	30K0	0032	9999N	K
产品类别 Product Type	功率 Rated power 50W-2500W 0020-20W 30K0-30KW 2M00-2MW	电阻阻值 Resistance value(ohm) (Ω)indicates resistance value in units of ohms 0R08-0.08Ω,0032-32Ω 8K00-8KΩ	接线 Connection N=端子 Terminal F=加风机	电阻阻值误差 Resistance tolerance H=±3% K=±10% J=±5%

PRU.20K0.0003.9999N(“9999N”表示常规品，20kW/3R波纹电阻柜 9999N means standard product 20kW/3R Wire Wound Resistor Unit)

PRU.20K0.0003.6218A(“6218A”表示客户代码，此款产品为客户定制的20kW/3R波纹电阻柜 6218A means customer 20kW/3R Wire Wound Resistor Unit)

Crowbar/Chopper电阻

Crowbar/Chopper Resistor

产品简述 (Product Profile)

Crowbar电阻器--低电压穿越技术

Crowbar电阻主要应用于风力发电逆变器的低电压穿越技术中。它用在风力发电机转子侧，用于旁路转子侧变流器。当电网发生低电压扰动时，防止直流母线电压过高和转子电流过大。主要工作在故障状态，阻尼定子磁链。Crowbar电阻能在瞬时把巨大能量耗散掉。

Low voltage ride through technology

Crowbar Resistors are applied to the rotor side of wind turbine, installed in the converter system. It can reduce DC-link and low voltage of power network problems. They work under fault conditions. It could dispatch thousands of joules of energy in a very short time.



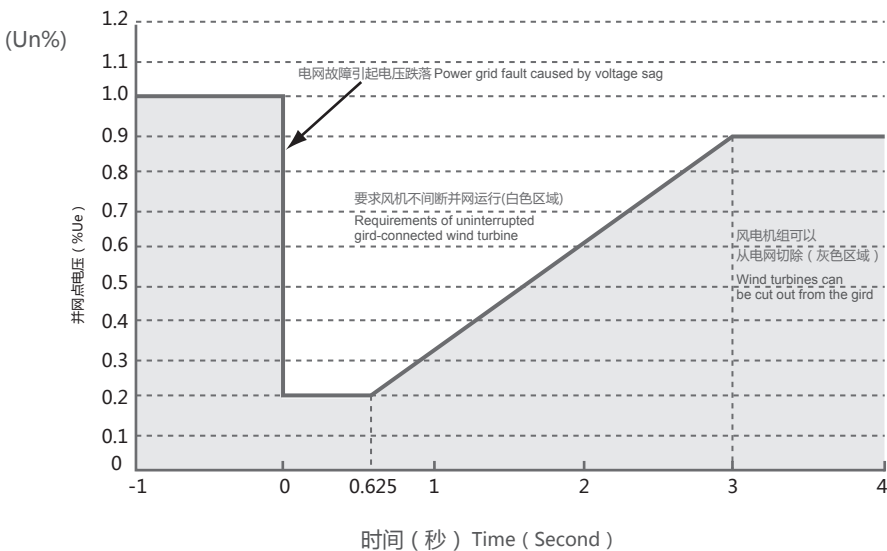
Crowbar电阻的寿命评估 (Life Evaluation of Crowbar Resistors)

(以1.5MW风力发电机为例，环境温度 < 60°C)

(Take 1.5MW windmill generator for example, environmental temperature < 60°C)

200J	1次/秒	1 time/second		
220KJ	1次/30分钟	1 time/half an hour	350000次 (20年寿命)	350000 times(20 years of life)
640KJ	1次/星期	1 time/week	1000次 (20年寿命)	1000 times(20 years of life)
1360KJ	1次/月	1 time/month	250次 (20年寿命)	250 times(20 years of life)

风电机组低电压穿越要求 (Low Voltage Ride Through Wind Turbine)



■ Crowabr电阻器分类(Crowbar Resistors Category) :

栅格结构-自然风冷

M : 电阻材料的质量。单位 : kg

Q : 电阻材料吸收的能量。单位 : kJ

C : 电阻材料的比热容。单位 : kJ/kg.K

Δt : 电阻材料的温升。单位 : K

以1.5MW风力发电机为例 :

电阻材料 : SUS304.

$Q_{\max}=1360\text{KJ}$ $C=0.5\text{kJ/kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{Kg}$

电阻材料重量 : 约6.8Kg

辅助材料重量 : 约20Kg

Grid Structure-Natural Cooling

M: Mass of resistance material in kg

Q: Energy absorbed by resistor mass in kJ

C: Specific Heat Capacity of resistor material in kJ/kg.K

Δt : Temperature Rise of resistor in K

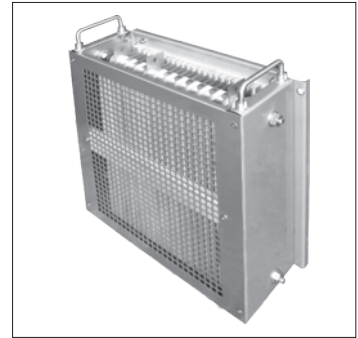
Take 1.5MW Windturbine as an Example:

$Q_{\max}=1360\text{kJ}$ $C=0.5\text{kJ/kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{kg}$

Resistor Mass: about 6.8kg

Other Material Mass: about 20kg



夹层结构-自然风冷

M : 电阻材料的质量。单位 : kg

Q : 电阻材料吸收的能量。单位 : kJ

C : 电阻材料的比热容。单位 : kJ/kg.K

Δt : 电阻材料的温升。单位 : K

以1.5MW风力发电机为例 :

电阻材料 : SUS304

$Q_{\max}=1360\text{KJ}$ $C=0.5\text{kJ/kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{Kg}$

电阻材料重量 : 约6.8Kg

辅助材料重量 : 约20Kg

体积 : 500×450×150 (mm)

Sandwich Structure - Natural Cooling

M: Mass of resistance material in kg

Q: Energy absorbed by resistor mass in kJ

C: Specific Heat Capacity of resistor material in kJ/kg.K

Δt : Temperature Rise of resistor in K

Take 1.5MW Windturbine as an Example:

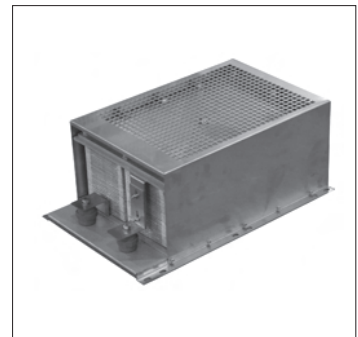
$Q_{\max}=1360\text{kJ}$ $C=0.5\text{kJ/kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{kg}$

Resistor Mass: about 6.8kg

Other Material Mass: about 20kg

Size: 500x450x150(mm)



管式结构-自然风冷

M : 电阻材料的质量。单位 : kg

Q : 电阻材料吸收的能量。单位 : kJ

C : 电阻材料的比热容。单位 : kJ/kg.K

Δt : 电阻材料的温升。单位 : K

以1.5MW风力发电机为例 :

电阻材料 : SUS304

$Q_{\max}=1360\text{KJ}$ $C=0.5\text{KJ/Kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{Kg}$

电阻材料重量 : 约6.8Kg

辅助材料重量 : 约12Kg

Tubular Structure - Natural Cooling

M: Mass of resistance material in kg

Q: Energy absorbed by resistor mass in kJ

C: Specific Heat Capacity of resistor material in kJ/kg.K

Δt : Temperature Rise of resistor in K

Take 1.5MW Windturbine as an Example:

$Q_{\max}=1360\text{kJ}$ $C=0.5\text{kJ/kg}\cdot\text{K}$ $\Delta t=400\text{K}$

$M=1360/(0.5\times 400)=6.8\text{kg}$

Resistor Mass: about 6.8kg

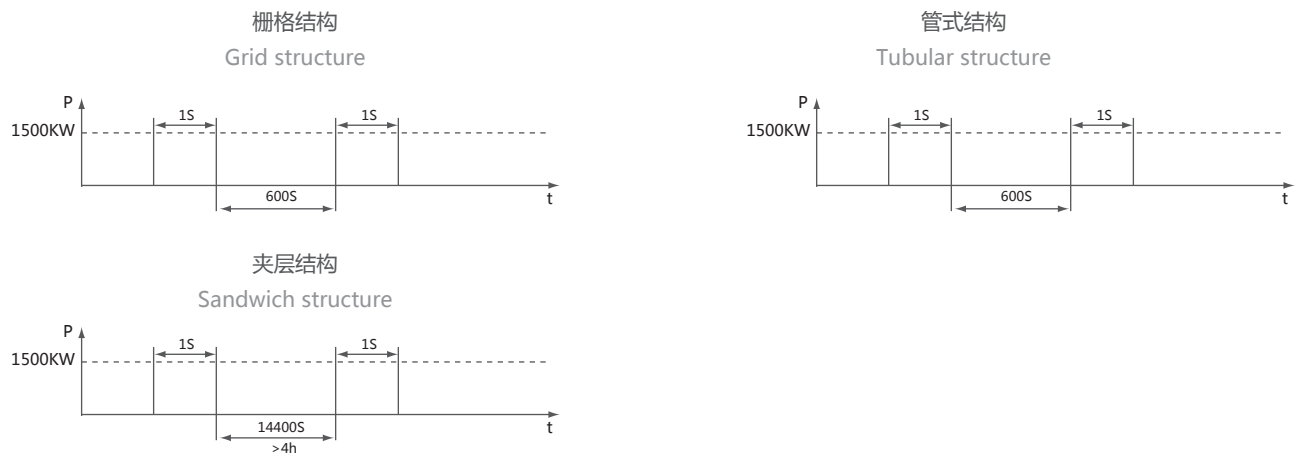
Other Material Mass: about 12kg



Crowbar/Chopper电阻

Crowbar/Chopper Resistor

工况比较 (Operating Condition Comparison)



结构比较 (Framework Comparision)

	重量 Weight (Kg)	体积尺寸 Size (mm)	实际温升 Temperature rise (°C)	价格 Price
栅格结构 Grid structure	26	500×450×150	450	中 Middle
夹层结构 Sandwich structure	28	491×320×200	200	低 Low
管式结构 Tubular structure	45	300×200×120	400	高 High

电阻材质比较 (Comparison of the Resistor Materials)

	密度 Density (g/mm ³)	电 阻 率 Resistivity (Ω-mm /m ³)	热 容 Heat capacity (J/g·K)	导 热 率 Thermal conductivity (w/m ·°C) ²	温度特性 Temperature coefficient (ppm/°C)
SUS304	0.008	0.72	0.50	13.2	< 1400
SUS316	0.008	0.78	0.45	13.23	< 900
SUS310	0.008	0.84	0.46	13.2	< 600
Cr20Ni80	0.0084	1.09	0.441	16.0	< 100