

铜管式水冷电阻(Copper Tube Water Cooled Resistors)SLR-TG100W-10KW

大功率、小体积、水循环冷却低温度型电阻,消除传统方式的去离子水高成本。
High Power,Small Size,Water Circulation cooling with low temperature,Replacement the high cost traditional deionized water



■ 结构 (Structure)

铜管式水冷电阻以优质紫铜材料为基体,独特的绝缘材料及高精密合金丝绕制而成,独特焊接方式焊接+每只电阻100%水压密封性测试,杜绝了漏水隐患,它的出水温度在40°C-60°C之间。使用时应先通冷却水,等水流量达到要求并充满电阻器内腔后再通电;停用,先断电源,后断水,以免电阻体干烧损坏。

The Copper Tube Water Cooled Resistors is made of high-quality Red Copper as the matrix,unique insulating material and high-precision alloy wire wound. The unique welding method welding + 100% water pressure sealing test of each resistance eliminates the hidden danger of water leakage. Its outlet water temperature is between 40 °C and 60 °C. When in use, the cooling water shall be supplied first, and then the power shall be supplied after the water flow meets the requirements and fills the inner cavity of the resistor; During shutdown, cut off the power supply first and then the water to avoid dry burning and damage of the resistor.

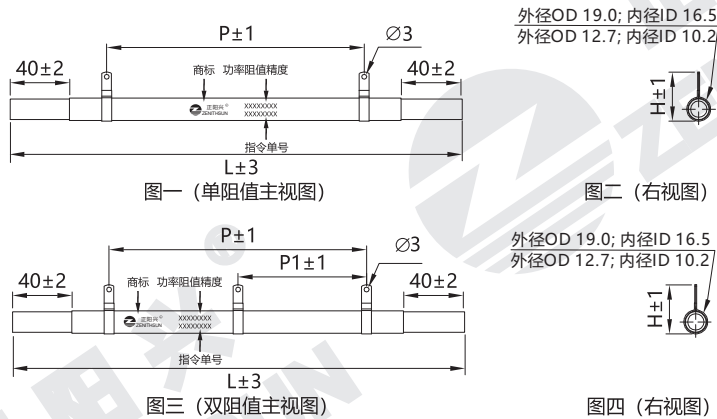
■ 特点(Features)

- 1.水冷电阻是由流动的自来水(或蒸馏水或其它液态)进行循环冷却的电阻器,消除了传统方式的去离子水高成本。
Water cooled resistors circularly cooled by flowing tap water (or distilled water or other liquid),replacement the high cost traditional deionized water.
- 2.功率等级:100W-10KW
Power Range:100W-10KW
- 3.水冷电阻具有功率大、体积小,工作稳定,高绝缘,密封性好,温度低,使用寿命长的特点。
High Power,Small Volume,Stable Operation,High Insulation,Good Sealing,Low Temperature & long life.
- 4.引出端采用端片式引出。
Taps/Terminals leading out .

■ 适用范围 (Application)

深圳市正阳兴电子的系列水冷电阻生产周期为2-3周,广泛用于机械设备、负载、电炉、冶炼、风力发电和太阳能发电等行业,可作为能量吸收使用;在大功率电子电路中作为分流,分压和负载使用;可在静止型无功功率动态补偿器(SVC)的调节阀中或直流输电(HVDC)的晶闸管换流阀中使用。
此电阻也可实行内置在电阻箱/柜中。
Production Time : 2-3 weeks .
Widely used in mechanical equipment, load,furnace, smelting, wind power generation and solar power generation, used as energy absorption; In high-power electronic circuits used as shunt, voltage divider and load ; used in the regulating valve of static no power dynamic compensator (SVC) or thyristor converter valve of direct current transmission (HVDC).
Ideal electronic component to be assembled inside high-power load banks.

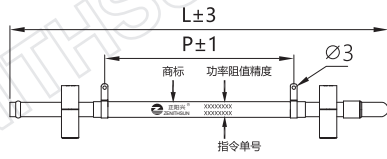
■ 产品尺寸图表SLR-TG1 (Dimension Chart)



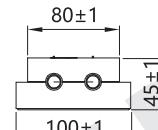
型号 Type	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)						净重(g) N.W	温度系数 T.C.R	备注 Note
				D±0.5	L±1	P±1	P1±1	H±1	Φ±0.5			
SLR-TG1	100W	0.1Ω-20KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	12.7	180	60	/	30	3	80	±100PPM	
SLR-TG1	200W	0.1Ω-20KΩ		12.7	195	80	/	30	3	90		
SLR-TG1	300W	0.1Ω-20KΩ		12.7	262	145	/	30	3	115		
SLR-TG1	500W	0.1Ω-20KΩ		12.7	285	165	/	30	3	125		
SLR-TG1	700W	0.1Ω-20KΩ		12.7	325	205	/	30	3	145		
SLR-TG1	1000W	0.1Ω-20KΩ		12.7	400	265	/	30	3	180		
SLR-TG1	1500W	0.1Ω-20KΩ		19	325	205	/	40	4.5	190		
SLR-TG1	2000W	0.1Ω-20KΩ		19	400	265	/	40	4.5	270	±250PPM	
SLR-TG1	350W+350W	0.1Ω-20KΩ		12.7	325	102.5	102.5	30	3	150		
SLR-TG1	500W+500W	0.1Ω-20KΩ		12.7	400	132.5	132.5	30	3	200		
SLR-TG1	1KW+1KW	0.1Ω-20KΩ		19	500	190	190	40	4.5	340		

备注: 1.绝缘电压2.5KV~6KV; 2.我们可以按您的要求实行订制2.5KW-10KW。
1. Insulation Voltage:2.5KV~6KV; 2. Custom designs to get 2.5KW-10KW;

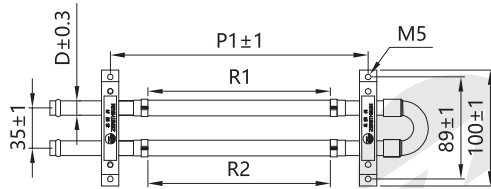
■ 产品尺寸图表SLR-TGUK (Dimension Chart)



图一 (主视图)



图二 (右视图)

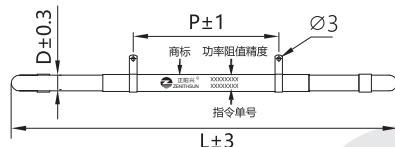


图三 (俯视图)

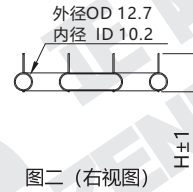
型号 Type	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)					净重(g) N.W	温度系数 T.C.R
				D±1	L±3	P±1	P1±1	Φ±0.5		
SLR-TGUK	500W+500W	2.2Ω-820R	K(±10%) J(±5%) G(±2%) F(±1%)	12.7	310	165	230	3	300	±100PPM ~ ±250PPM
SLR-TGUK	700W+700W	2.2Ω-820R		12.7	350	200	252	3	340	
SLR-TGUK	1KW _s +1KW _s	2.2Ω-820R		12.7	350	200	252	3	340	
SLR-TGUK	1KW+1KW	2.2Ω-820R		12.7	465	270	345	3	450	

备注: 1.绝缘电压2.5KV~6KV; 2.我们可以按您的要求实行订制2.5KW-10KW。
1. Insulation Voltage: 2.5KV~6KV; 2. Custom designs to get 2.5KW-10KW;

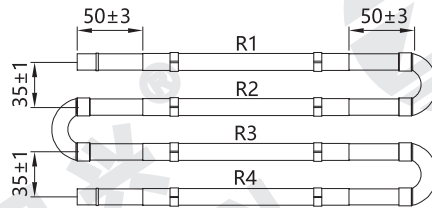
■ 产品尺寸图表SLR-TGM (Dimension Chart)



图一 (主视图)



图二 (右视图)



图三 (俯视图)

型号 Type	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)				净重(g) N.W	温度系数 T.C.R
				D±1	L±3	P±1	Φ±0.5		
SLR-TGM	500Wx4	0.1Ω-20KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	12.7	316	115	3	450	±100PPM ~ ±260PPM
SLR-TGM	700Wx4	0.1Ω-20KΩ		12.7	376	175	3	550	
SLR-TGM	1KWx4	0.1Ω-20KΩ		12.7	451	250	3	680	

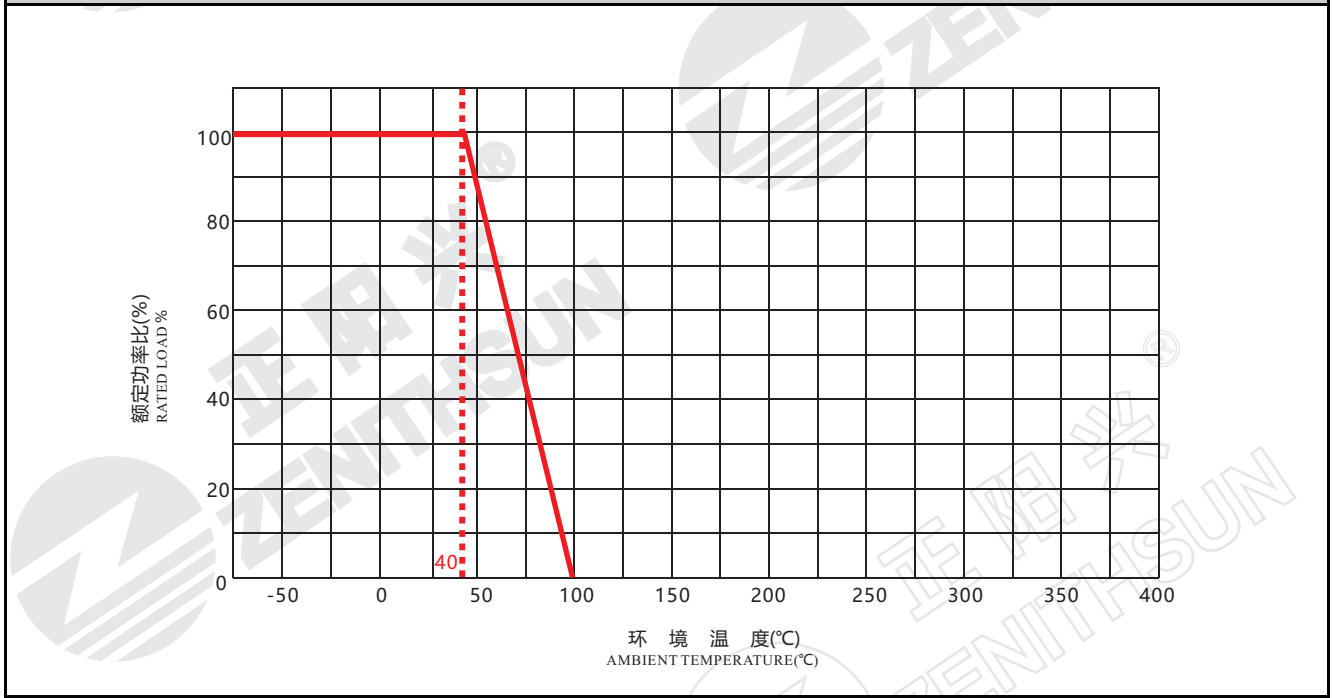
备注: 1.绝缘电压2.5KV~6KV; 2.我们可以按您的要求实行订制2.5KW-10KW。
1. Insulation Voltage: 2.5KV~6KV; 2. Custom designs to get 2.5KW-10KW;

■ 定货示例 (How to order)

SLR	TGM	1000W	2R	J
↓	↓	↓	↓	↓
系列	型号	功率	阻值	精度
Series	Type	Power	Nominal value	Tolerance
			(K:±10%, J:±5%, G:±2%, F:±1%)	
			(K:±10%, J:±5%, G:±2%, F:±1%)	

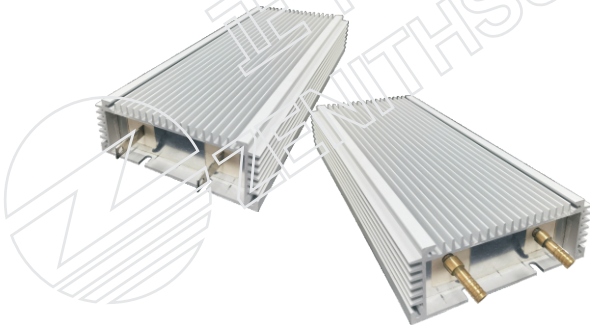
■ 铜管水冷电阻性能实验参数 (Performance Characteristics)		
项目 Test	试验条件 Conditions of Test	性能要求 Testing Results
电阻值容许误差 Resistance Tolerance	测试电压≤3V,环境温度25℃ Testing Voltage ≤3V, Ambient Temperature 25℃	F---G---J--K
温度系数 T.C.R	$\frac{R1-R0}{R0(T1-T0)} \times 10^6$ (PPM/°C) R0:常温(T0)下阻值 R0:Room Temperature(T0)Resistance R1:常温T0+100°C(T1)下阻值 R1:Room Temperature T0+100°C(T1)Resistance	±100PPM~±260PPM
额定负荷 Rated Load	40℃额定电压, 1小时 40℃, rated voltage, 1hour	$\Delta R \leq \pm(3\%R + 0.1\Omega)$
引出端对地绝缘耐压 Dielectric Withstand Voltage	2.5KV-6KVac 60秒,漏电流2.5mA 2.5KV-6KVac 60s , leakage current 2.5mA	$\Delta R \leq \pm(0.1\%R + 0.05\Omega)$
绝缘电阻值 Insulation Resistance	1000Vdc	50~1000MΩ, 1Min
引出端强度 Terminal Tensile Strength	20N	无脱落 No off
耐振性 Vibration resistance	1.5mm, 10-55-10Hz, 分别2小时 1.5mm, 10-55-10Hz, each 2hours	无破损, 无脱落 No damage, No off
室温耐久性 Load Life	额定电压, 通电90分钟, 停30分钟, 共500小时 At rated voltage, 90 min "On", 30 min "Off" , total 500hours	$\Delta R \leq \pm(3\%R + 0.1\Omega)$
耐低温试验 Low Temp. Resistance	产品在-55℃±2℃环境条件下储存16H Store at -55℃±2℃ for 16h	$\Delta R \leq \pm(1\%R + 0.1\Omega)$
耐高温试验 High Temp. Resistance	产品在70℃±2℃环境条件下储存16H Store at 70℃±2℃ for 16h	$\Delta R \leq \pm(1\%R + 0.1\Omega)$

■ 铜管水冷电阻降功耗曲线图 (Derating Curve)



铝盒式水冷电阻(Aluminum Housed Water-cooled Resistor)SLR-ALB 1KW-10KW

大功率、小体积、水循环冷却低温度型电阻,消除传统方式的去离子水高成本。
High Power, Small Size, Water Circulation cooling with low temperature, Replacement the high cost traditional deionized water



■ 结构 (Structure)

本产品为银白色铝盒式水冷电阻，内置优质紫铜材料为基体，采用绝缘材料及高精合金丝绕制而成，独特焊接方式焊接和100%水压密封性测试，杜绝了漏水隐患，它的出水温度在40°C-60°C之间。使用时应先通冷却水，等水流量达到要求并充满电阻器内腔后再通电；停用，先断电源，后断水，以免电阻体干烧损坏。

The aluminum housed water-cooled resistor is made of high-quality Red Copper as the matrix, unique insulating material and high-precision alloy wire wound. The unique welding method welding + 100% water pressure sealing test of each eliminates the hidden danger of water leakage. Its outlet water temperature is between 40 °C and 60 °C, the cooling water shall be supplied first when in use, and then the power shall be supplied after the water flow meets the requirements and fills the inner cavity of the resistor; During shutdown, cut off the power supply first and then the water, to avoid dry burning and damage of the resistor.

■ 特点 (Features)

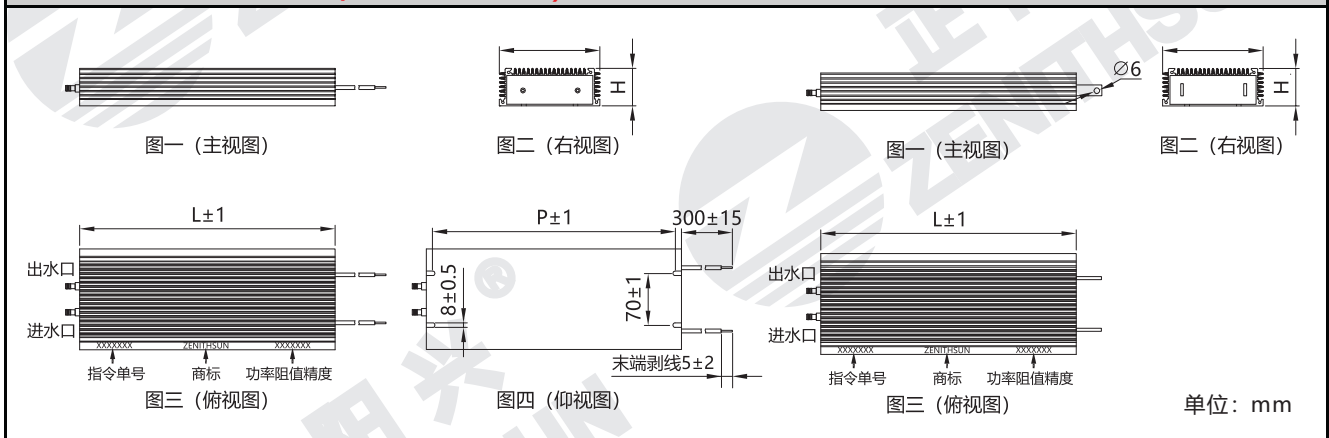
1. 水冷电阻是由流动的自来水（或蒸馏水或其它液态）进行循环冷却的电阻器，消除了传统方式的去离子水高成本。
Water cooled resistors circularly cooled by flowing tap water (or distilled water or other liquid), replacement the high cost traditional deionized water.
2. 功率等级: 1KW-10KW
Power Range: 1KW-10KW
3. 水冷电阻具有功率大、体积小，工作稳定，高绝缘，密封性好，温度低，使用寿命长的特点。
High Power, Small Volume, Stable Operation, High Insulation, Good Sealing, Low Temperature & long life.
4. 引出端采用端片式引出。
Taps/Terminals leading out.

■ 适用范围 (Application)

深圳市正阳兴电子的系列水冷电阻生产周期为2-3周，广泛用于机械设备、负载、电炉、冶炼、风力发电和太阳能发电等行业，可作为能量吸收使用；在大功率电子电路中作为分流，分压和负载使用；可在静止型无功功率动态补偿器（SVC）的调节阀中或直流输电（HVDC）的晶闸管换流阀中使用。
此电阻也可实行内置在电阻箱/柜中。
Production Time : 2-3 weeks.
Widely used in mechanical equipment, load, furnace, smelting, wind power generation and solar power generation, used as energy absorption; In high-power electronic circuits used as shunt, voltage divider and load; used in the regulating valve of static no power dynamic compensator (SVC) or thyristor converter valve of direct current transmission (HVDC).
Ideal electronic component to be assembled inside high-power load banks.

03

■ 产品尺寸图表SLR-ALB (Dimension Chart)



型号 Type	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)				净重(kg) N.W	温度系数 T.C.R	备注 Note
				L±1	W±1	H±1	P±1			
SLR-ALB	1000W	0.1Ω-20KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	215	175	65	195	4.10	±100PPM	
SLR-ALB	2000W	0.1Ω-20KΩ		265	175	65	245	4.75		
SLR-ALB	3000W	0.1Ω-20KΩ		335	175	65	315	6.00		
SLR-ALB	4000W	0.1Ω-20KΩ		365	175	65	345	6.50		
SLR-ALB	5000W	0.1Ω-20KΩ		400	175	65	380	7.15	±260PPM	
SLR-ALB	6000W	0.1Ω-20KΩ		450	175	65	430	8.05		
SLR-ALB	8000W	0.1Ω-20KΩ		500	175	65	480	8.95		
SLR-ALB	10000W	0.1Ω-20KΩ		600	175	65	580	10.80		

■ 定货示例 (How to order)

SLR	ALB	2000W	10R	J
↓	↓	↓	↓	↓
系列	型号	功率	阻值	精度 (K:±10%, J:±5%, G:±2%, F:±1%)
Series	Type	Power	Nominal value	Tolerance(K:±10%, J:±5%, G:±2%, F:±1%)

■ 铝盒水冷电阻性能实验参数 (Performance Characteristics)		
项目 Test	试验条件 Conditions of Test	性能要求 Testing Results
电阻值容许误差 Resistance Tolerance	测试电压≤3V,环境温度25℃ Testing Voltage ≤3V, Ambient Temperature 25℃	F---G---J---K
温度系数 T.C.R	$\frac{R1-R0}{R0(T1-T0)} \times 10^6$ (PPM/°C) R0:常温(T0)下阻值 R0:Room Temperature(T0)Resistance R1:常温T0+100°C(T1)下阻值 R1:Room Temperature T0+100°C(T1)Resistance	±200PPM~±260PPM
额定负荷 Rated Load	40℃额定电压, 1小时 40℃, rated voltage, 1hour	$\Delta R \leq \pm(3\%R + 0.1\Omega)$
引出端对地绝缘耐压 Dielectric Withstand Voltage	2KV-7KVdc 60秒,漏电流2.5mA 2KV-7KVdc 60s, leakage current 2.5mA	$\Delta R \leq \pm(0.1\%R + 0.05\Omega)$
绝缘电阻值 Insulation Resistance	1000Vdc	50~1000MΩ, 1Min
引出端强度 Terminal Tensile Strength	引出线直径1.5以下20N,直径1.5以上40N,接线端子拉力20N Wire diameter ≤1.5 with 20N, wire diameter ≥1.5 with 40N, terminal tension 20N 端片式(铜端片/不锈钢端片)40N Copper end /stainless steel end, 40N	无脱落 No off
耐振性 Vibration resistance	1.5mm, 10-55-10Hz, 分别2小时 1.5mm, 10-55-10Hz, each 2hours	无破损, 无脱落 No damage, No off
室温耐久性 Load Life	额定电压, 通电90分钟, 停30分钟, 共500小时 At rated voltage, 90 min "On", 30 min "Off", total 500hours	$\Delta R \leq \pm(3\%R + 0.1\Omega)$
耐低温试验 Low Temp. Resistance	产品在-55℃±2℃环境条件下储存16H Store at -55℃±2℃ for 16h	$\Delta R \leq \pm(1\%R + 0.1\Omega)$
耐高温试验 High Temp. Resistance	产品在70℃±2℃环境条件下储存16H Store at 70℃±2℃ for 16h	$\Delta R \leq \pm(1\%R + 0.1\Omega)$

■ 铝盒水冷电阻降功耗曲线图 (Derating Curve)

