

均压电阻、充电电阻(Voltage-equalizing Resistors/Charging Resistors)SQF 5W-25W/SRBB 20W-80W

抗冲击能力强，绝缘度高，变频器伺服器专用

Strong Impact Resistance, High Insulation, Special for frequency converter server



■ 特点(Features)

1. 具有体积小、耐热性好、温度系数小、阻值精度高、短时间超负载性能优、阻值经年无变化等特性。
Small size, good heat resistance, low temperature coefficient, high resistance accuracy, excellent short-term overload performance, resistance value unchanged over the years, etc.
2. 功率范围: 均压电阻5W-25W/充电电阻20W-80W
Power Range: 5W-25W for voltage-equalizing resistors, 20W-80W for charging resistors
3. 可依客户要求定制。
Custom requests are available.

■ 产品介绍 (Introduction)

1. 充电电阻是在变频器刚通电时为了给储能电容缓慢充电而设计的电阻，也叫缓冲电阻。
Charging resistor is designed to charge the energy storage capacitor slowly when the frequency converter is just powered on, which is also called buffer resistor.
2. 均压电阻的主要作用是利用分压原理，保证使各个电容上面电压均等。
The main function of the voltage-equalizing resistor is to use the voltage dividing principle to ensure that the voltage on each capacitor is equal.

■ 结构 (Structure)

1. 充电电阻是将电阻绕线丝绕制在耐热性较好的陶瓷棒基体上形成线绕电阻芯（均压电阻采用金属氧化膜电阻芯替代线绕电阻芯方式制成），经全部检测合格后把线绕电阻芯放入陶瓷壳内部，用特殊不燃性耐热水泥电子填充料密封，经自然阴干后高温烘烤而成。
Charging resistor is ceramic rod with the resistance winding wire (the voltage-equalizing resistor is made of metal oxide film resistor core, instead of wire wound resistor core), put the wire wound resistance core into different sizes and shapes ceramic shells, sealed with special incombustible heat-resistant cement electronic filler, by natural drying in the shade and baking at high temperature.
2. 充电电阻的引出端长度标准为300mm, 可依客户要求缩短或延长。
The lead out length of the charging resistor is 300mm, which can be adjusted to be shorten or lengthen.
3. 均压电阻的引出端为圆形端或方形端。
Voltage-equalizing resistor with leading out in the form of circular end or a square end.

■ 产品尺寸图表SQF 10W-25W (Dimension Chart)

水泥电阻SQF

系列 Series	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
				L±1.5	W±1	H±1	P±2	H1±1.5			
SQF1/SQF2	10W-15W	0.5Ω-220KΩ	J (±5%)	48	12.5	12.5	28.5	14	20.00	±200PPM	
SQF1/SQF2	20W-25W	0.5Ω-220KΩ	G (±2%)	63	12.5	12.5	31.7	14	25.50	±400PPM	

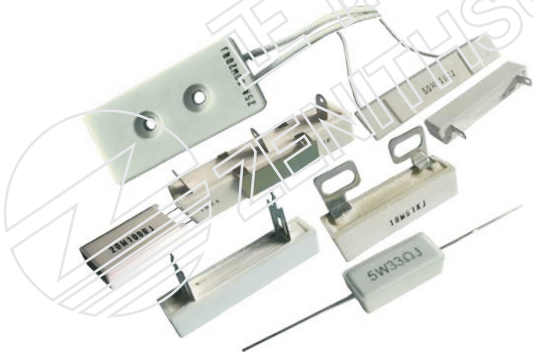
■ 产品尺寸图表SRBB 20W-80W (Dimension Chart)

充电电阻(Charging Resistors)SRBB 20W-30W:净重(N.W) 50g

充电电阻(Charging Resistors)SRBB 50W-80W:净重(N.W) 120g

水泥电阻(Cement Resistor)SR 5W-100W

体积小，绝缘度高，款式多样，价格实惠，电子电路中最常见的理想电子元件之一
Small Size, High Insulation, Various Styles. It is one of the most common ideal electronic components in electronic circuits.



■ 产品介绍 (Introduction)

水泥电阻器是最早期使用的电阻器，广泛应用在各类产品上，是电子、电器、设备、信息产品最基本的电子元器件。它具有体积小、耐震、耐湿、耐热及良好的散热、价格优惠等特性。水泥电阻完全绝缘，适用于印刷电路板上。
Cement resistor is widely used in various products, which is the most basic electronic component of electronics, electrical appliances, equipment and information products. It has the characteristics of small volume, shock resistance, moisture resistance, heat resistance, good heat dissipation and favorable price. It is suitable for printed circuit board.
水泥电阻耐热性优，电阻温度系数小，呈直线变化；耐短时间超负载，低杂音，阻值经年无变化。
It is with excellent heat resistance, and the TCR is very low, changes in a straight line; withstand short time overload, low noise, the resistance value has no change over the years.

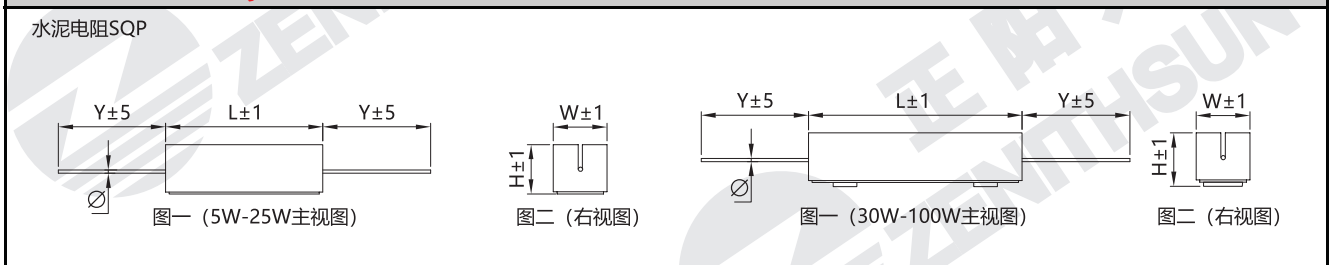
■ 结构 (Structure)

- 水泥电阻是将电阻绕线绕制在耐热性较好的陶瓷棒或绝缘散热的玻纤基体上形成线绕电阻芯经全部检测合格后把线绕电阻芯放入不同尺寸和形状的陶瓷壳内部，用特殊不燃性耐热水泥电子填充料密封，经自然阴干后高温烘烤而成。
Cement resistor is ceramic rod with the resistance winding wire or a wire wound resistance core is formed on the glass fiber, put the wire wound resistance core into different sizes and shapes ceramic shells, sealed with special incombustible heat-resistant cement electronic filler, by natural drying in the shade and baking at high temperature.
- 高阻值规格采用金属氧化膜电阻芯替代线绕电阻芯方式制成。
The high resistance is metal oxide film resistance core instead of wire wound resistance core.
- 正阳兴生产的水泥电阻品种繁多，可以灵活按客户要求设计制作。
ZENITHSUN produces a wide variety of cement resistors, which can be flexibly designed and manufactured according to customer requirements.

■ 适用范围 (Application)

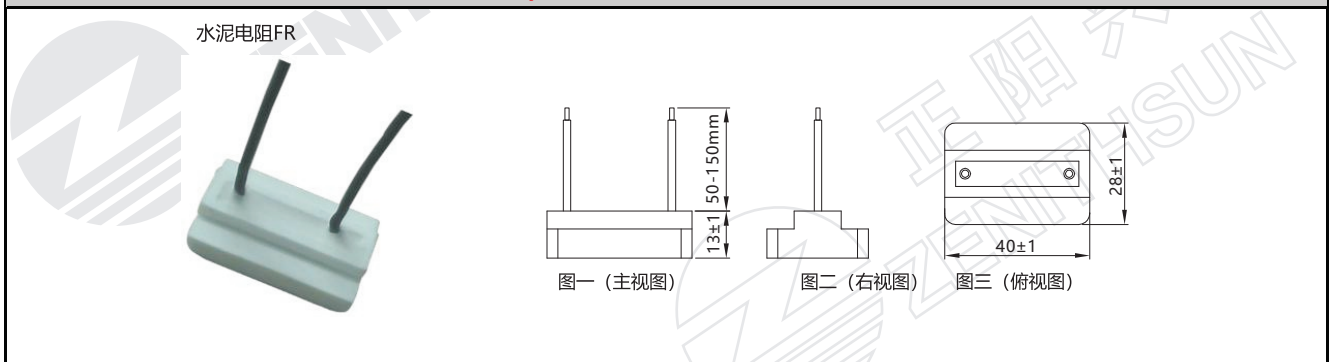
深圳市正阳兴电子的系列水泥电阻生产周期为2-3周，广泛应用于电子、电器、电源、音响、家电等交直流电路中，是电子电路中最常见的理想电子元件之一。
Production Time :2-3 weeks .
Widely used in AC and DC circuits such as electronics, electrical appliances, power supply, audio and household appliances.
It is one of the most common ideal electronic components in electronic circuits.

■ 产品尺寸图表SQP 5W-100W (Dimension Chart)

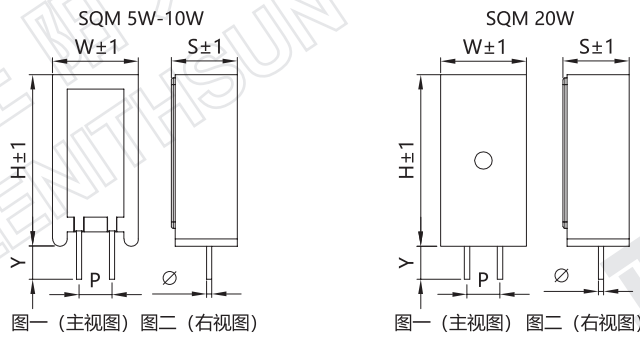


系列 Series	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)					净重(g) N.W	温度系数 T.C.R	备注 Note
				L±1	W±1	H±1	Y±5	Φ±0.05			
SQP	5W	0.1Ω-220KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	22	10	9	22	0.78	4.20	±200PPM ~ ±400PPM	
SQP	7W	0.5Ω-220KΩ		35	10	9	22	0.78	6.70		
SQP	10W	0.5Ω-220KΩ		48	10	9	22	0.78	9.00		
SQP	15W	0.5Ω-220KΩ		48	12.5	12.5	22	0.78	17.50		
SQP	20W-25W	0.5Ω-220KΩ		63.5	12.5	12.5	22	0.78	23.00		
SQP	20W-25W	0.5Ω-220KΩ		60	14	14	22	0.78	23.00		
SQP	30W	0.5Ω-220KΩ		75	19	19	22	0.78	65.00		
SQP	40W-60W	0.5Ω-220KΩ		90	19	19	22	0.78	80.00		
SQP	80W	0.5Ω-220KΩ		108	19	19	22	0.78	92.00		
SQP	100W	0.5Ω-220KΩ		135	24	24	25	0.78	145.00		

■ 产品尺寸图表FR 5W (Dimension Chart)



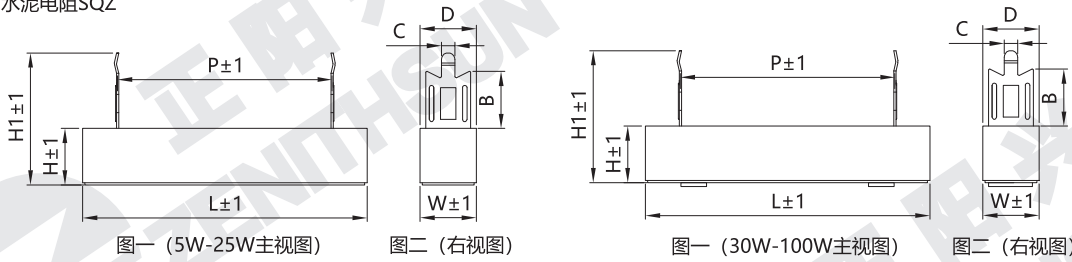
■ 产品尺寸图表SQM 5W-20W (Dimension Chart)



系列 Series	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
				W±1	S±1	H±1.5	P±1	Y±1	D±0.5			
SQM	5W	0.1Ω-220KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	13	10	25.5	5	5	0.78	8.50	±200PPM ~ ±400PPM	
SQM	7W	0.5Ω-220KΩ		13	10	39	5	5	0.78	13.50		
SQM	10W	0.5Ω-220KΩ		13	10	51	5	10	0.78	17.50		
SQM	10W	0.5Ω-220KΩ		16	12	35	7	10	0.78	14.80		
SQM	20W	0.5Ω-220KΩ		20	10	40	8	10	0.78	17.50		
SQM	20W	0.5Ω-220KΩ		20	10	50	8	10	0.78	22.00		

■ 产品尺寸图表SQZ 5W-100W (Dimension Chart)

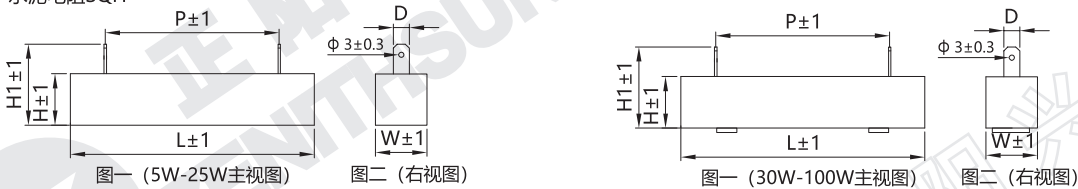
水泥电阻SQZ



系列 Series	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
				L±1.5	W±1	H±1	P±1	B±0.5	C±0.1	D±0.1	H1±2		
SQZ	5W	0.1Ω-220KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	28	10	10	15	10.5	1.5	7	25	6.00	±200PPM ~ ±400PPM
SQZ	7W	0.5Ω-220KΩ		35	10	10	20	10.5	1.5	7	25	7.50	
SQZ	10W	0.5Ω-220KΩ		48	10	10	35	10.5	1.5	7	25	12.00	
SQZ	15W	0.5Ω-220KΩ		48	12.5	12.5	35	10.5	1.5	7	25	18.50	
SQZ	20W-25W	0.5Ω-220KΩ		63	12.5	12.5	42	15	3	10	33	25.50	
SQZ	30W	0.5Ω-220KΩ		76	19	19	55	12	3	10	35	65.00	
SQZ	40W-60W	0.5Ω-220KΩ		90	19	19	65	12	3	10	35	80.00	
SQZ	80W	0.5Ω-220KΩ		108	19	19	85	12	3	10	35	92.00	
SQZ	100W	0.5Ω-220KΩ		135	24	24	115	10	3	10	40	150.00	

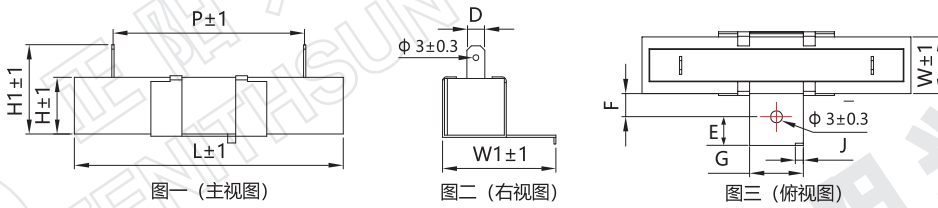
■ 产品尺寸图表SQH 10W-100W (Dimension Chart)

水泥电阻SQH



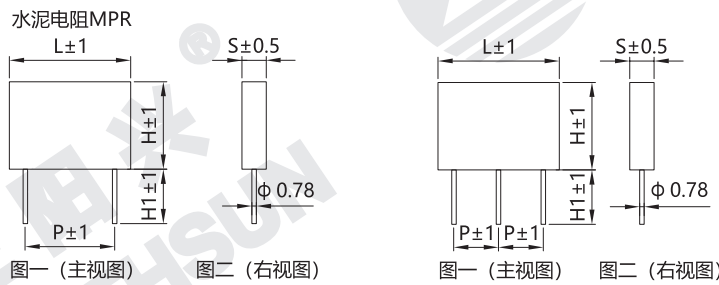
系列 Series	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)						净重(g) N.W	温度系数 T.C.R	备注 Note
				L±1.5	W±1	H±1	P±2	H1±2	D±0.5			
SQH	10W	0.1Ω-220KΩ	K(±10%) J(±5%) G(±2%) F(±1%)	48	10	10	33	21	5	12.00	±200PPM ~ ±400PPM	
SQH	15W	0.5Ω-220KΩ		48	12.5	12.5	33	21	5	19.50		
SQH	20W-25W	0.5Ω-220KΩ		63.5	12.5	12.5	45	24	6	25.50		
SQH	30W	0.5Ω-220KΩ		76	19	19	55	31	8	65.00		
SQH	40W-60W	0.5Ω-220KΩ		90	19	19	65	31	8	80.00		
SQH	80W	0.5Ω-220KΩ		108	19	19	90	31	8	92.00		
SQH	100W	0.5Ω-220KΩ		135	24	24	114	38	8	150.00		

■ 产品尺寸图表SQHG 10W-80W (Dimension Chart)



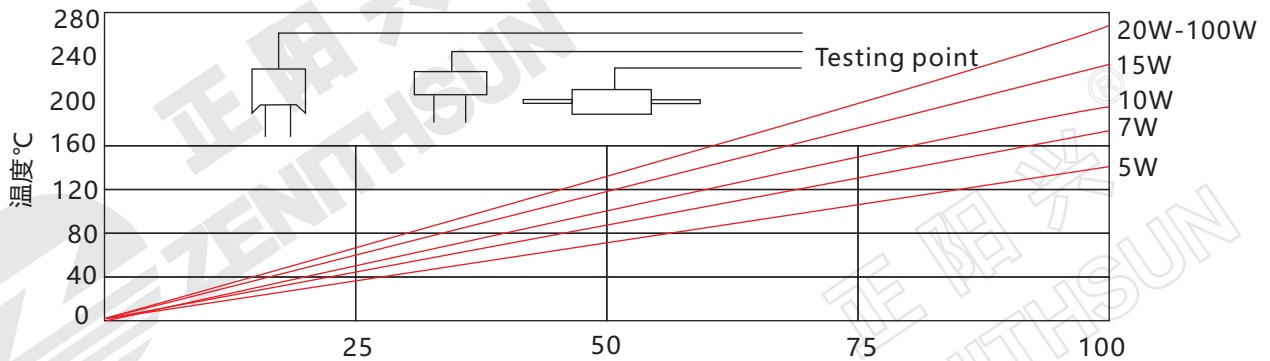
系列 Series	功率 Power	阻值范围 Resistance Range	精度 Tolerance	尺寸 Dimensions(mm)								净重(g) N.W	温度系数 T.C.R
				L±1.5	W±1	H±1	P±1	J±0.3	E±1	F±1	G±2		
SQHG	10W	0.5Ω-220KΩ	K(±10%)	48	10	10	35	3	5.5	8	12	15.00	±200PPM ~ ±400PPM
SQHG	15W	0.5Ω-220KΩ		48	12.5	12.5	35	3	5.5	8	12	24.50	
SQHG	20W-25W	0.5Ω-220KΩ	J(±5%)	63	12.5	12.5	42	3	5.5	8	12	30.00	
SQHG	30W	0.5Ω-220KΩ	G(±2%)	76	19	19	55	3.5	8	10	18	78.00	
SQHG	40W-60W	0.5Ω-220KΩ	F(±1%)	90	19	19	65	3.5	8	10	18	95.00	
SQHG	80W	0.5Ω-220KΩ		108	19	19	85	3.5	8	10	18	110.00	

■ 产品尺寸图表MPR (Dimension Chart)



系列 Series	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
				L±1	S±0.5	H±1	P±1	H1±1			
MPR	2W	0.01Ω-0.68Ω	K(±10%)	13.5	4	8.5	10	20	1.50	±200PPM ~ ±400PPM	
MPR	2W	0.01Ω-0.68Ω		14	5	8.5	10	20	1.75		
MPR	3W	0.01Ω-0.68Ω	J(±5%)	14	5	13	10	18	2.40		
MPR	5W	0.01Ω-1.5Ω	G(±2%)	14	5	18	10	12	3.20		
MPR	10W	0.01Ω-4.7Ω		26	5	18	20	12	5.60		
MPR	10W	0.01Ω-4.7Ω	F(±1%)	26	8	26	20	12	13.00		
MPR	2W-2W	0.033Ω-0.56Ω		26	5	8.5	10	12	3.20		
MPR	3W-3W	0.033Ω-0.56Ω		26	5	13	10	12	4.10		
MPR	5W-5W	0.033Ω-0.56Ω		26	5	17	10	12	5.60		
MPR	7W-7W	0.033Ω-0.56Ω		26	5	20	10	12	5.80		

■ 温度上升图 (Temperature Rise Diagram)



■ 水泥电阻性能实验参数 (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°C Testing Voltage ≤3V, Ambient Temperature 25°C	K--J--G--F
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~±400PPM
额定负荷 Rated Load	40°C额定电压, 1小时 40°C, rated voltage, 1 hour	$\Delta R \leq \pm(2\%R+0.1\Omega)$
短时间过负荷 Short Time Overload	5倍额定功率, 10秒钟; 5 times rated power for 10s;	$\Delta R \leq \pm(2\%R+0.1\Omega)$
引出端对地绝缘耐压 Dielectric Withstand Voltage	1.5KVac 60秒,漏电流2.5mA 1.5KVac 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0.8以下10N Wire diameter ≤0.8 with 10N	无脱落 No off
耐湿性 Humidity Resistance	温度: 40±2°C, 湿度: 90%-95%, 1000小时 Temp.:40±2°C, Humidity: 90%-95%. 1000hours	$\Delta R \leq \pm(2\%R+0.1\Omega)$
室温耐久性 Load Life	温度: 40±2°C, 湿度: 90%-95%, 加额定电压1.5小时, 停止0.5小时, 连续1000小时. Temp.:40±2°C, Humidity: 90%-95%, rated voltage 1.5hours 30 min "Off", continuous 1000hours	$\Delta R \leq \pm(5\%R+0.1\Omega)$
耐热性 Heat Resistance	锡温:350±10°C,时间:3±0.5秒,浸入深度:距元件主体2±0.5mm Tin Temp.:350±10°C, time:3±0.5s, immersion depth: distance from component body 2±0.5mm	$\Delta R \leq \pm(1\%R+0.05\Omega)$
可焊性 Solderability	锡温:235±5°C,时间: 3±0.5秒 Tin Temp.:235±5°C, time:3±0.5s	焊锡面积≥95% Solder area ≥95%
不燃性 Non-flammability	10倍额定功率, 通电5分钟 10 times rated power, power on for 5Minutes	允许开路, 但不燃烧 Without combustio

■ 水泥电阻降功耗曲线图 (Derating Curve)

