

## RES2 直流電源電湧保護器 (SPD II類)

# RES2電湧保護器SPD 使用說明書

RES2-直流系列



### ⚠ 注意

- 使用產品前，請認真仔細閱讀本說明書！
- 安裝、調試和檢查須由專業的電氣工程人員進行。
- 必須遵守相關的國家和地方法規和標準。
- 安裝使用前務必檢查和確認產品無外部破損，若有缺陷，不得使用！
- 請確認產品應用系統最大工作電壓不超過產品最大允許值  $U_c$  或  $U_{cpv}$ 。
- 請依照本說明書中推薦的接線銅纜要求，並可靠接地。
- 請採用本說明書中推薦的最大後備保護熔絲規格。
- 產品狀態窗口顏色由綠色變為紅色，請及時更換相同規格產品。
- 若基座損壞，須更換整個產品。

本公司對產品保留修改及說明書的變更權，如有更新，再另行通知。

## 町洋机电(中国)有限公司 DINKLE ELECTRIC MACHINERY (CHINA) CO., LTD.

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## ■ 概述

RES2系列直流電源SPD符合IEC、GB等設計標準，適用於低壓電源直流供電系統；能在電湧產生瞬間，將被保護線路接入等電位系統中，將電壓限制在一定水平，起到保護用戶用電設備的作用。

## ■ 命名方式

RES2-XX-XXXXX

- 無：不帶遙信報警
- F：帶遙信報警
- 24： $U_c=24VDC$
- 110： $U_c=110VDC$
- 220： $U_c=220VDC$
- 1000： $U_{cpv}=1000VDC$
- 1500： $U_{cpv}=1500VDC$
- 40：最大放電電流 $I_{max}$ ：40kA
- 系列號

## ■ 產品型號

型號	型號
RES2-40-24	RES2-40-24F
RES2-40-110	RES2-40-110F
RES2-40-220	RES2-40-220F
RES2-40-1000	RES2-40-1000F
RES2-40-1500	RES2-40-1500F

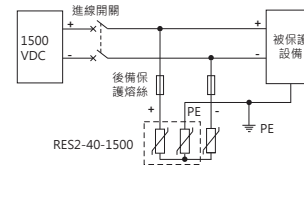
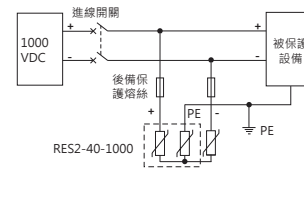
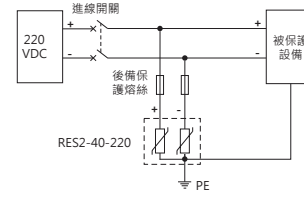
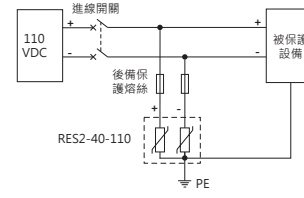
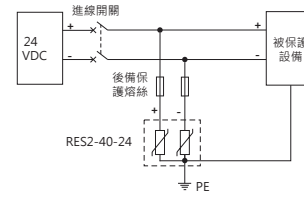
注：帶“F”型號具有遙信報警功能

## ■ 主要技術參數

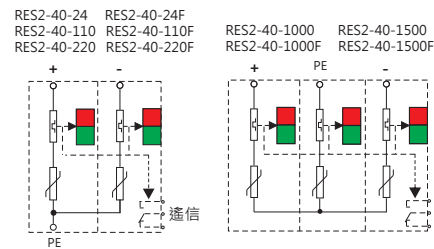
技術參數	產品型號	RES2-40-24	RES2-40-110	RES2-40-220	RES2-40-1000	RES2-40-1500
額定工作電壓 $U_n$		24V DC	110V DC	220V DC	-	-
最大工作電壓 $U_c$		90V DC 60V AC	180V DC 120V AC	320V DC 220V AC	-	-
最大工作電壓 $U_{cpv}$		-	-	-	1000V DC	1500V DC
測試標準		GB/T18802.1；IEC61643-11		GB/T18802.31		

標稱放電電流 $I_n(8/20\mu s)$ ：20kA  
 最大放電電流 $I_{max}(8/20\mu s)$ ：40kA  
 電壓保護水平 $U_p$ ：0.8kV  
 響應時間： $< 25ns$   
 漏電流： $< 20\mu A$   
 推薦後備保護熔絲：80A  
 鏈接導線截面積L/N： $\geq 4mm^2$   
 鏈接導線截面積P/E： $\geq 6mm^2$   
 螺絲扭矩：2~3Nm  
 狀態指示：綠色：正常；紅色：失效  
 工作溫度： $-40^{\circ}C \sim +70^{\circ}C$   
 相對濕度：5%~95%  
 外殼防護等級(IEC60529)：IP 20  
 外殼材料/阻燃等級(UL94)：PA66/V0  
 安裝：DIN35mm標準導軌  
 保護類別：用於電源的電湧保護器SPD II類  
 性能測試：上海防雷產品測試中心  
 遙信報警輸出：250VAC/0.5A；24VDC/0.5A

## ■ 典型應用

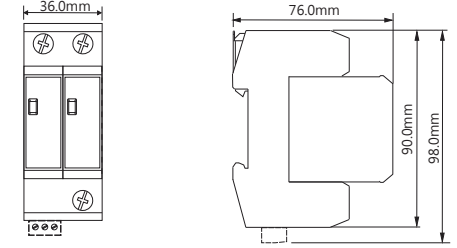


## ■ 電路原理圖

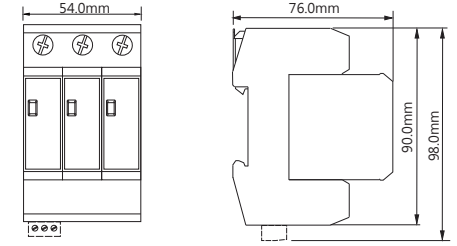


## ■ 外形尺寸

RES2-40-24 RES2-40-24F  
 RES2-40-110 RES2-40-110F  
 RES2-40-220 RES2-40-220F



RES2-40-1000 RES2-40-1000F  
 RES2-40-1500 RES2-40-1500F



## ■ 維護

- 1、檢查 SPD 的狀態指示窗口，若非全綠，則需更換 SPD 或者失效的電湧防護模塊。
- 2、遙信端子可連接截面積 $\leq 1.5mm^2$ 的多股或單股銅導線，剝線長度為6~7mm，由螺釘鎖緊固定力矩0.2Nm。
- 3、上電前應檢查線纜與接線端子之間的連接是否牢固，接地是否可靠。
- 4、產品出廠前經過嚴格檢驗和質量控制，如發現異常情況，請及時與本公司聯繫。
- 5、產品執發貨之日起五年內，正常使用過程中出現產品質量問題均由本公司免費維護。



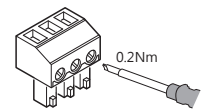
綠色：正常



紅色：失效



遙信報警輸出



0.2Nm

0.14 mm<sup>2</sup> - 1.5mm<sup>2</sup>



7 mm

## RES2 Surge Protective Device for DC Power

# RES2 Surge Protective Device User Manual

RES2-Series



### Caution

- Read this manual carefully before installation !
- Installation, adjustment and inspection must be carried out by professional electrical engineers !
- Must comply with relevant national and local regulations and standards.
- Be sure to check and confirm that the product has no external damage before installation. Do not use if there is external damage.
- Please confirm that the maximum operating voltage of the product application system does not exceed the maximum allowable value of the product,  $U_c$ .
- Please follow the recommended copper wire requirements in this manual, and reliable grounding.
- Please follow the recommended maximum backup fuse spec.
- Please replace the product with the same specifications in time as the color of the product status window changes from green to red.
- Please replace the whole product as the socket is damaged.

The company reserves the right to modify the product and change the specification. If there is any update, it will be notified separately.

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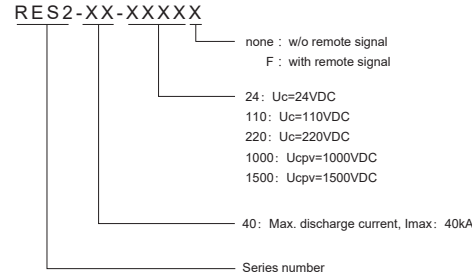
E-mail:service@dinkle.com



### General

RES2 series DC power SPDs are designed according to the IEC and GB standards. Suitable for low voltage power supply DC power supply system; It enable the connection between the power supply system and an equipotential network instantaneously when the surge occurs and limits the residual voltage to a certain level to protect the devices.

### Nomenclature



### Product model number

Model number	Model number
RES2-40-24	RES2-40-24F
RES2-40-110	RES2-40-110F
RES2-40-220	RES2-40-220F
RES2-40-1000	RES2-40-1000F
RES2-40-1500	RES2-40-1500F

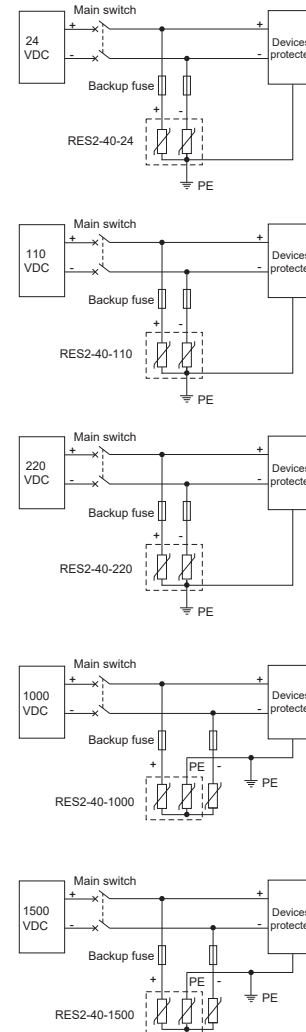
Note, "F" with remote signal function

### Main technical parameters

Parameter	Model RES2-40-24	RES2-40-110	RES2-40-220	RES2-40-1000	RES2-40-1500
Nominal operating voltage $U_n$	24V DC	110V DC	220V DC	-	-
Max. operating voltage $U_c$	90V DC 60V AC	180V DC 120V AC	320V DC 220V AC	-	-
Max. operating voltage $U_{cpv}$	-	-	-	1000V DC	1500V DC
Test Standards	GB/T18802.1 ; IEC61643-11		GB/T18802.31		

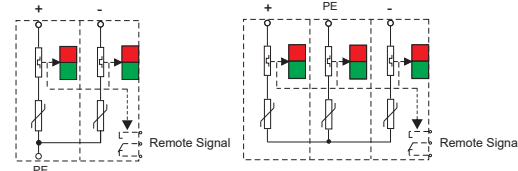
Nominal discharge cur.  $I_n(8/20us)$ : 20kA  
 Max. discharge cur.  $I_n(8/20us)$ : 40kA  
 Protection level Up: 0.8kV  
 Response time: <25ns  
 Leakage current: <20 $\mu$ A  
 Max. backup fuse: 80A  
 Connection wire section area L/N:  $\geq 4mm^2$   
 Connection wire section area PE:  $\geq 6mm^2$   
 Screw torque: 2~3Nm  
 Status indicator : Green : OK ; Red : Failed  
 Working temperature : -40°C~+70°C  
 Relative humidity : 5%~95%  
 Housing protection level (IEC60529) : IP 20  
 Housing Material/flame-retarded level (UL94) : PA66/V0  
 Installation : Standard 35 mm DIN rail  
 Protection level : Surge Protection level , class II for Power  
 Certificate Authority : Shanghai lighting protection center  
 Remote signal output : 250VAC/0.5A ; 24VDC/0.5A

### Typical applications



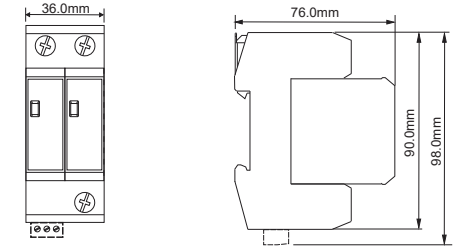
### Schematic diagram

RES2-40-24 RES2-40-24F  
 RES2-40-110 RES2-40-110F  
 RES2-40-220 RES2-40-220F  
 RES2-40-1000 RES2-40-1000F  
 RES2-40-1500 RES2-40-1500F

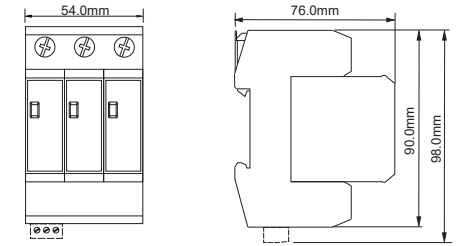


### Dimensions

RES2-40-24 RES2-40-24F  
 RES2-40-110 RES2-40-110F  
 RES2-40-220 RES2-40-220F

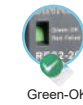


RES2-40-1000 RES2-40-1000F  
 RES2-40-1500 RES2-40-1500F

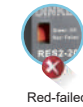


### Maintenance

1. Check the status indicator and replace the failed module or whole product if the status indicator is not all green.
2. Connect the terminal blocks of remote signal with solid or stranded conductor. The conductor section area is small than 1.5mm<sup>2</sup> and strip length is between 6 and 7mm. Tightened by screw with 0.2 Nm torque.
3. Before Power on, Make sure the connection tightened firmly between conductors and terminal blocks and grounding is reliable.
4. The product undergoes rigorous inspection and quality control before leaving the factory. If abnormal conditions are found, please contact us.
5. 5 years guarantee from the date of delivery, free replacement of malfunction products.



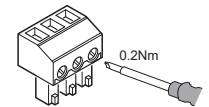
Green-OK



Red-failed



Remote Signal Output



0.14 mm<sup>2</sup> - 1.5mm<sup>2</sup>

