Solid State Relays

PCB SSR assembly for DIN mounting with varistor and fuse protection Type RP1A23D5M8S297





Product Description

The RP1A23D5M8S297 is an assembly of 8x RP1A23D5S297 SSRs with a common line termination (L), 8 load terminations (T1 to T8) and additional on board protection. Each SSR is independently contolled and presence of control voltage is indicated by a green LED.

SSR short circuit protection is provided by an easily replaceable on board mounted fuse. Overvoltage protection is provided by means of a varistor connected across the output of each SSR.

Terminals for load and control connections are provided through pluggable spring terminals to allow fast connection. Terminal for line connection is provided through a 2 pole screw terminal block to allow for looping.

Specifications are at 25°C unless otherwise noted.

- Independent control for each SSR
- Assembly with 8 AC switching solid state relays
- Zero cross switching
- Rated operational voltage for each SSR: up to 250VAC
- Rated operational current for each SSR: up to 2AAC
- Blocking voltage for each SSR: 850Vp
- Control voltage range for each SSR: 4.5-32VDC
- Fuse and fuse holder provided for each SSR
- SSR output protection against overvoltages with integrated varistor
- LED indication for control voltage presence
- RoHS compliant
- DIN mounting



Selection Guide					
Rated output voltage/ SSR	Blocking voltage/ SSR	Control voltage/ SSR	No. of SSRs in assembly	Rated current/ SSR 2AAC ² up to 70°C	
230VAC	850Vp	4.5 - 32VDC ¹	8	RP1A23D5M8S297	

1: Control voltage range for SSR RP1A23D5S297 is 3-32VDC which changes to 4.5-32VDC when SSR is mounted in assembly RP.S297 2: Rated operational current for SSR RP1A23D5S297 is 5AAC @ 25°C which changes to 2AAC up to 70°C when SSR is mounted in assembly RP.S297

General Specifications

Zero voltage turn on	
for each SSR	≤10V
Operational frequency range	45 to 65Hz
Power factor	> 0.9 @ rated voltage
CE marking	Yes
Touch Protection	IP20
Control input status	
for each SSR	Green LED
Pollution degree	2
Isolation	
Input to Output	4000Vrms

Output Voltage Specifications for each SSR

Operational voltage range	20 - 250VAC
Blocking voltage	850Vp
Varistor across SSR output	Yes

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Output Specifications for each SSR

Rated operational current AC-51 up to Ta=70°C	2 AAC
Minimum operational current	20 mAAC
Rep. overload current t=1s	12 AAC
Non-rep. surge current t=20ms	80 Ap
I ² t for fusing, t=10ms	50 A ² s
Off-state leakage current	<1 mAAC
Critical dv/dt off-state	500 V/us
On-state voltage drop @ rated current	<1.2 Vrms

Input Specifications for each SSR

Control voltage range	4.5 - 32 VDC
Pick-up voltage	4.0 VDC
Drop-out voltage	1.0 VDC
Maximum Reverse voltage	32 VDC
Max. response time pick-up	1/2 cycle
Max. response time drop-out	1/2 cycle
Maximum input current	10 mADC

Agency Approvals and Conformances

Assembly RP1A23D5M8S297 Conformance

IEC/EN 60947-4-3

SSR RP1A23D5S297	
Conformance	IEC/EN 60947-4-3
Agency Approvals	UR recognised (E80573), UL508 cUR recognised (E80573), C22.2
	No.14-10 (132788), VDE0700

CE

Electromagnetic Compatibility

EMC Immunity	IEC/EN 61000-6-2	Radiated Radio Frequency	
Electrostatic Discharge (ESD)		Immunity	IEC/EN 61000-4-3
Immunity	IEC/EN 61000-4-2	10V/m, 80 - 1000 MHz	Performance Criteria 1
Air discharge, 8kV	Performance Criteria 1	3V/m, 2 - 2.7 GHz	Performance Criteria 1
Contact, 4kV	Performance Criteria 1	Conducted Radio Frequency	IEC/EN 61000-4-6
Electrical Fast Transient		Immunity	
(Burst) Immunity	IEC/EN 61000-4-4	10V/m, 0.15 - 80 MHz	Performance Criteria 1
Output: 2kV, 5kHz	Performance Criteria 2	Voltage Dips Immunity	IEC/EN 61000-4-11
Input: 1kV, 5kHz	Performance Criteria 2	0% for 10ms/20ms,	Performance Criteria 2
Electrical Surge Immunity	IEC/EN 61000-4-5	40% for 200ms	Performance Criteria 2
Output, line to line, 1kV	Performance Criteria 2	70% for 500ms	Performance Criteria 2
Output, line to earth, 2kV	Performance Criteria 2	Voltage Interruptions Immunity 0% for 5000ms	IEC/EN 61000-4-11 Performance Criteria 2
Input, line to line, 1kV	Performance Criteria 2		
Input, line to earth, 2kV	Performance Criteria 2		
EMC Emission	IEC/EN 61000-6-4	Radio Interference	
Radio Interference		Field Emission (Radiated)	IEC/EN 55011
Voltage Emission (Conducted)	IEC/EN 55011	30 - 1000MHz	Class A (industrial)
0.15 - 30MHz	Class A (industrial)		

Note:

Control input lines must be installed together to maintain products' susceptibility to Radio Frequency interference.

This product has been designed for Class A equipment. Use of this product in domestic environments may cause radio interference, in which case the user may be required to employ additional mitigation methods.

- Performance Criteria 1 (Performance Criteria A): No degradation of performance or loss of function is allowed when the product is operated as intended.
- Performance Criteria 2 (Performance Criteria B): During the test, degredation of performance or partial loss of function is allowed. However, when the test is complete the product should return operating as intended by itself.
- Performance Criteria 3 (Performance Criteria C): Temporary loss of function is allowed, provided the function can be restored by manual operation of the control.



Dimensions and Components Layout



Connection Specifications





Connection Diagram



Environmental Specifications

Operating Temperature	-20°C to 70°C
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	(-4°F to +158°F)
Storage Temperature	-40°C to 100°C
eterage remperatore	
	(-40°F to +212°F)
BoHS (2002/95/EC)	Compliant
	Compliant
Relative humidity	95% non-condensing
Tolative Harmany	
	@ 40°C
III flammability rating	
	02 34 00
Installation Altitude	up to 1000m
notaliation / intrado	

Housing Specifications

Dimensions (Length x Width x Depth)	125 x 182 x 62 mm
Housing Material	PA6
Weight	Approx. 550g
DIN mounting	35mm, EN 50022

Type 2 Short Circuit Protection Co-ordination

Fuse size [A]	Fuse model	Prospective Short Circuit Current [kA]	Voltage [VAC]	Fuse size
4A	Littlefuse - 0216004	1.5kArms	250	5x20mm