

### SSR 10 to 40 Amps AC SSR

Series SSR Solid State Relays are AC relays, Triac Output. The triac version of the zero switching relay is an inexpensive solution for resistive loads. The zero switching relay switches on when the AC sine voltage just crosses zero, and switches off when the current crosses zero.

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#### Ordering Key

S S R 200 48 Z D1  
1 2 3 4 5

- 1: Semiconductor type;
- 2: Rated working current (A);
- 3: Rated working voltage (V) (24:240 V,44:440V,48:480V);
- 4: Control method Z - Zero, R - Random;
- 5: Control voltage D: 3-8V, D1 - 4-16VDC, D3 - 3-32VDC, A2 - 90-250VAC.

- Rated operational current 10 to 40 Amps.
- Rated operational voltage 280V or 480 V
- Input Voltage Range 4 to 16 Vdc, 3 to 32 Vdc or 90 to 250 Vac.
- 4000 Vrms Optical Isolation.(input/output)
- Both "Zero Voltage" & phase controllable "Random Switching" versions.
- LED-indication for control input.

#### Type Selection

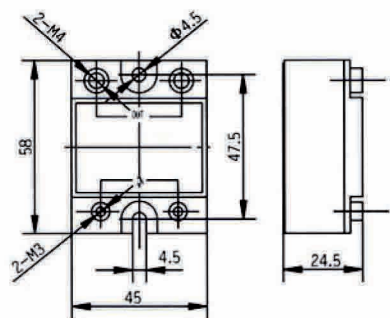
- Mounting type D: AC Single phase Solid State Relay
- Rated operational current 10: 10Amp, 15: 15Amp, 25: 25Amp, 40: 40Amp
- Rated operational voltage 28: 280VAC, 48: 480VAC.
- Switched mode Z: Zero Voltage,R: Random Switching.
- Input Control voltage D1: DC 4to16V, D3: DC 3to32V, A2: 90to250V.

#### Selection guide

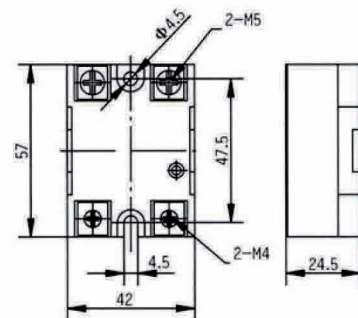
Voltage	Control voltage	Rated operational current		
		10 Amp	25 Amp	40 Amp
280 VAC "Z"	4 to 16 Vdc	SSR-1028ZD1	SSR-2528ZD1	SSR-4028ZD1
280 VAC "R"	4 to 16 Vdc	SSR-1028RD1	SSR-2528RD1	SSR-4028RD1
280 VAC "Z"	3 to 32 Vdc	SSR-1028ZD1	SSR-2528ZD1	SSR-4028ZD1
280 VAC "R"	3 to 32 Vdc	SSR-1028RD3	SSR-2528RD3	SSR-4028RD3
280 VAC "Z"	90 to 250Vac	SSR-1028ZD2	SSR-2528ZD2	SSR-4028ZD2
280 VAC "R"	90 to 250Vac	SSR-1028RA2	SSR-2528RA2	SSR-4028RA2
480 VAC "Z"	4 to 16 Vdc	SSR-1048ZD1	SSR-2548ZD1	SSR-4048ZD1
480 VAC "R"	4 to 16 Vdc	SSR-1048RD1	SSR-2548RD1	SSR-4048RD1
480 VAC "Z"	3 to 32 Vdc	SSR-1048ZD3	SSR-2548ZD3	SSR-4048ZD3
480 VAC "R"	3 to 32 Vdc	SSR-1048RD3	SSR-2548RD3	SSR-4048RD3
480 VAC "Z"	90 to 250Vac	SSR-1048ZA2	SSR-2548ZA2	SSR-4048ZA2
480 VAC "R"	90 to 250Vac	SSR-1048RA2	SSR-2548RA2	SSR-4048RA2

#### Dimension

SSR 10 to 40 Case A



SSR 10 to 40 Case B





# Semiconductor Device

## Solid state relays

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### Specifications

PARAMETER-LIST	Units	Specification Limits		
<b>Input Parameter ①</b>	<b>D1</b>	<b>D3</b>	<b>A2</b>	
Control Voltage Range	4 to 16Vdc	3 to 32Vdc	90 to 250Vac	
Input Current (Max.)	7/20 mAdc @=5V/12V	13/16 mAdc @=5V/12	30 MAac @=220V	
Must Turn On Voltage	4Vdc	3 Vdc	90Vac	
Must Turn Off Voltage	1Vdc	1 Vdc	10Vac	

Output Parameter ②	Units	Specification Limits			
Model No. <b>GD</b>		10	15	25	40
Load Current Range	Arms	0.05 to 10	0.05 to 15	0.05 to 25	0.05 to 40
Surge Current, 20 mSec (Max.)	Arms	85	115	230	400
Load Voltage Range (240V)	Vrms	24 to 280			
TRIAC Over voltage(240V)	Vpk	≥600			
Load Voltage Range (440V)	Vrms	44 to 440			
TRIAC Over voltage(440V)	Vpk	≥800			
Thermal Resistance, (Rthjc)	°C/w	2.5	2.5	1.3	1.1
Frequency Range	Hz	47 to 63			
Off State dv/dt (Min)	V/μsec	200			
Off State Leakage Current (Max.)	mArms	≤8			
On State Voltage Drop (Max.)	Vrms	1.6			
Turn On Time (Max.) "Z"	Cycle	1/2			
Turn On Time (Max.) "R"	mSec	1			
Turn Off Time (Max.)	Cycle	1/2			
Turn Off Time(Max.)"A2"	mSec	40			

### Coupling Specifications

Dielectric (Input/Output)	Vrms	2500
Dielectric (Input-Output/Base)	Vrms	2500
Capacitance	pf	10

### General Specifications

Ambient temperature range: operating or Storage -30°C to +80°C

Weight( typical.): **Case A** Aluminum Base plate: 99g; Copper Base plate: 145g

**Case B** Aluminum Base plate: 81g; Copper Base plate: 120g

Base plate: Aluminum or Copper, nickel-plated

Case Color: Black

Reverse Voltage (Max.)	32 Vdc	32 Vdc	/
LED Display	Optional	Optional	Optional



### Ordering Key

S S R 200 48 Z D1  
1 2 3 4 5

- 1: Semiconductor type;
- 2: Rated working current (A);
- 3: Rated working voltage (V) (24:240 V,44:440V,48:480V);
- 4: Control method Z - Zero, R - Random;
- 5: Control voltage D: 3-8V, D1 - 4-16VDC, D3 - 3-32VDC, A2 - 90-250VAC.

### SSR 40 to 120 Amps AC SSR

Series SSR are power line relays allowing 10 to 120 Amps. switching power, with Voltage ratings from 280 to 480 Volts A.C. SSR series is Dual SCR Power Hybrid technology provides highly efficient thermal management for greatly increased cyclic life.

- High performance/low cost circuit design.
- Logic compatible current regulated input.
- 2500 Vrms optical isolation.
- Both "Zero Voltage" & phase controllable "Random Switching" versions.
- High voltage (1200 Vpk) versions for 480 Vrms service.
- LED-indication for control input.
- Control voltage range: 4~16 Vdc ,3 to 32 Vdc or 90~280Vac.
- Control voltage range: 4~16 Vdc ,3 to 32 Vdc or 90~280Vac.trol input.

### Type Selection

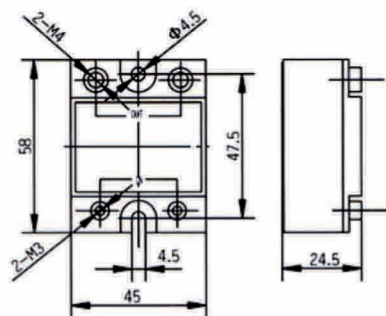
- Mounting type
  - Rated operational current
  - Rated operational voltage
  - Switched mode
  - Input Control voltage
  - Case type
- D: AC Single phase Solid State Relay  
 40: 40Amp, 60: 60Amp, 80: 80Amp, 100: 100Amp, 120: 120Amp  
 28: 280VAC, 48: 480VAC.  
 Z: Zero Voltage,R: Random Switching.  
 D1: DC 4to16V, D3: DC 3to32V, A2: 90to250V.  
 Blank: Case A, 1: Case B, with LED.

### Selection guide

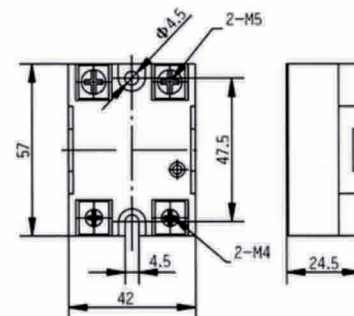
Voltage	Control voltage	Rated operational current				
		40 Amp	60 Amp	80 Amp	100 Amp	120 Amp
280 V <sub>AC</sub> "Zero Voltage"	4 to 16 Vdc	SSR-4028ZD1	SSR-6028ZD1	SSR-8028ZD1	SSR-10028ZD1	SSR-12028ZD1
	3 to 32 Vdc	SSR-4028ZD3	SSR-6028ZD3	SSR-8028ZD3	SSR-10028ZD3	SSR-12028ZD3
	90 to 250Vac	SSR-4028ZA2	SSR-6028ZA2	SSR-8028ZA2	SSR-10028ZA2	SSR-12028ZA2
480 V <sub>AC</sub> "Zero Voltage"	4 to 16 Vdc	SSR-4028ZD1	SSR-6028ZD1	SSR-8028ZD1	SSR-10028ZD1	SSR-12028ZD1
	3 to 32 Vdc	SSR-4028ZD3	SSR-6028ZD3	SSR-8028ZD3	SSR-10028ZD3	SSR-12028ZD3
	90 to 250Vac	SSR-4028ZA2	SSR-6028ZA2	SSR-8028ZA2	SSR-10028ZA2	SSR-12028ZA2

### Dimension

SSR 40 to 120 Case A



SSR 40 to 120 Case B



### Specifications

#### Electrical Specification

Input Parameter ①	D1	D3	A2
Control Voltage Range	4 to 16Vdc	3 to 32Vdc	90 to 250Vac
Input Current (Max.)	7/20 mAdc @=5V/12V	13/16 mAdc @=5V/24V	29 mAac @=220V
Must Turn On Voltage	4Vdc	3Vdc	90Vac
Must Turn Off Voltage	1Vdc	1Vdc	10Vdc
Reverse Voltage (Max.)	32Vdc	32Vdc	/
Display LED	Yes	Yes	Yes

Output Parameter	Units	Specification Limits	
Model No. <b>SSR</b>		40A	60A
Load Current Range	Arms	0.05 to 40	0.05 to 60
Surge Current, 20 mSec (Max.)	Arms	400	600
Load Voltage Range (280V)	Vrms	24 to 280	
SCR interdiction voltage (280V)	Vpk	≥800	
Load Voltage Range (480V)	Vrms	44 to 480	
SCR interdiction voltage (480V)	Vpk	≥1200	
Frequency Range	Hz	47 to 63	
Min. Off-state dv/dt	V/μsec	200	
Off State Leakage Current (Max.)	mArms	≤8	
On-State Voltage Drop (Max.)	Vrms	1.6	
Thermal Resistance, (Rthjc)	°C/W	1.3	0.65
Turn On Time (Max.) "Z"	Cycle	1/2	
Turn On Time (Max.) "R"	mSec	1	
Turn Off Time (Max.)	Cycle	1/2	

Model No. <b>SSR</b>		80A	100A	120A
Load Current Range	Arms	0.05 to 80	0.05 to 100	0.05 to 120
Surge Current, 20 mSec (Max.)	Arms	1000	1200	1500
Thermal Resistance (Rthjc)	°C/W	0.5	0.3	0.3
Load Voltage Range (280V)	Vrms	24 to 280		
SCR interdiction voltage (280V)	Vpk	≥800		
Load Voltage Range (480V)	Vrms	44 to 480		
SCR interdiction voltage (480V)	Vpk	≥1200		
Frequency Range	Hz	47 to 63		
Min. Off-state dv/dt	V/μsec	200		
Off State Leakage Current (Max.)	mArms	≤8		
On-State Voltage Drop (Max.)	Vrms	1.6		
Turn On Time (Max.) "Z"	Cycle	1/2		
Turn On Time (Max.) "R"	mSec	1		
Turn Off Time (Max.)	Cycle	1/2		

#### General Specifications

Dielectric (Input/Output)	Vrms	2500
Dielectric (Input-Output/Base)	Vrms	2500
Capacitance(Max.)	pf	10
Ambient Operating Temperature Range		-30°C to +80°C
Ambient Storage Temperature Range		-30°C to +80°C
Weight: ( typical)	Case A: Aluminum Base plate 99g, Copper Base plate 145g. Case B: Aluminum Base plate 81g, Copper Base plate 120g.	
Base plate: Aluminum or Copper, nickel-plated		
Case Color: Black		

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