

RR Series Power Relays

Heavy-duty power relays

Large capacity 10A — 1, 2, and 3 poles

- Available in pin and blade terminal styles.
- Options include an indicator, check button for test operation, and side flange.
- DIN rail, surface, and panel mount sockets are available for a wide variety of mounting applications.



Termination	Style	Part No.					Coil Voltage Code *
		SPDT	DPDT	3PDT (Note)			
Pin Terminal	Basic	—	RR2P-U* ★	RR3P-U* ★	RR3PA-U* ★	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220, AC230, AC240, DC6, DC12, DC24, DC48, DC110	
	With Indicator	—	RR2P-UL* ★	RR3P-UL* ★	RR3PA-UL* ★		
	With Check Button	—	RR2P-UC* ★	RR3P-UC* ★	RR3PA-UC* ★		
	With Indicator and Check Button	—	RR2P-ULC* ★	RR3P-ULC* ★	RR3PA-ULC* ★		
Blade Terminal	Basic	RR1BA-U*	RR2BA-U*	RR3B-U*	—		
	With Indicator	RR1BA-UL*	RR2BA-UL*	RR3B-UL*	—		
	With Check Button	RR1BA-UC*	RR2BA-UC*	RR3B-UC*	—		
	With Indicator and Check Button	RR1BA-ULC*	RR2BA-ULC*	RR3B-ULC*	—		
	Side Flange	RR1BA-US*	RR2BA-US*	RR3B-US*	—		

Note:

Both RR3P and RR3PA are 3PDT relays and have different terminal arrangements. See Internal Connection on page 51.

Part numbers marked with ★ in the table above are UL-recognized, CSA-certified, and TÜV-approved. Others are UL-recognized and CSA-certified.

Part No. Development

Part Not Development
When ordering, specify the Part No. and coil voltage code.

(Example) **RR3P-U** **AC110**

Part No. Coil Voltage Code

Coil Ratings

Rated Voltage (V)		Rated Current (mA) ±15% at 20°C		Coil Resistance (Ω) ±10% at 20°C	Operation Characteristics (against rated values at 20°C)		
		50Hz	60Hz		Max. Continuous Applied Voltage	Minimum Pickup Voltage	Dropout Voltage
AC (50/60Hz)	6	490	420	4.9	110%	80% maximum	30% minimum
	12	245	210	18			
	24	121	105	79			
	50	58	50	350			
	100	29	25	1,370			
	110	27	23	1,680			
	115	25	21.5	1,800			
	120	24	20.5	2,100			
	200	14.5	12.5	5,740			
	220	13.3	11.5	7,360			
	230	12.7	11	7,830			
240	12.1	10.5	8,330				
DC	6	240		25	110%	80% maximum	15% minimum
	12	120		100			
	24	60		400			
	48	30		1,600			
	110	13		8,460			

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Contact Ratings

Maximum Contact Capacity					
Continuous Current	Allowable Contact Power		Rated Load		
	Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load
10A	1650VA AC 300W DC	1100VA AC 150W DC	110V AC	10A	7.5A
			220V AC	7.5A	5A
			30V DC	10A	5A

Note: Inductive load for the rated load — $\cos \phi = 0.3$, L/R = 7 ms

UL Ratings

Voltage	Resistive	General use	Horse Power Rating
240V AC	10A	7A	1/3 HP
120V AC	10A	7.5A	1/4 HP
30V DC	10A	7A	—

CSA Ratings

Voltage	Resistive	General use
240V AC	10A	7A
120V AC	10A	7.5A
100V DC	—	0.5A
30V DC	10A	7.5A

TÜV Ratings

240V AC	10A
30V DC	10A

AC: $\cos \phi = 1.0$, DC: L/R = 0 ms

Specifications

Contact Material		Silver
Contact Resistance	*1	30 mΩ maximum
Minimum Applicable Load		1V DC, 10 mA (reference value)
Operate Time	*2	25 ms maximum
Release Time	*2	25 ms maximum
Power Consumption (approx.)		AC: 3 VA (50 Hz), 2.5 VA (60 Hz) DC: 1.5W
Insulation Resistance		100 MΩ minimum (500V DC megger)
Dielectric Strength	Pin Terminal	Between live and dead parts: 1500V AC, 1 minute Between contact and coil: 1500V AC, 1 minute Between contacts of different poles: 1500V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute
	Blade Terminal	Between live and dead parts: 2000V AC, 1 minute Between contact and coil: 2000V AC, 1 minute Between contacts of different poles: 2000V AC, 1 minute Between contacts of the same pole: 1000V AC, 1 minute
Operating Frequency		Electrical: 1800 operations/h maximum Mechanical: 18,000 operations/h maximum
Vibration Resistance		Damage limits: 10 to 55 Hz, amplitude 0.5 mm Operating extremes: 10 to 55 Hz, amplitude 0.5 mm
Shock Resistance		Damage limits: 1000 m/s ² Operating extremes: 100 m/s ²
Mechanical Life		10,000,000 operations
Electrical Life		200,000 operations (220V AC, 5A)
Operating Temperature	*3	−25 to +40°C (no freezing)
Operating Humidity		5 to 85% RH (no condensation)
Weight (approx.) (Basic)		RR2P: 90g, RR3P/RR3PA: 96g, RR1BA/RR2BA/RR3B: 82g

Note: Above values are initial values.

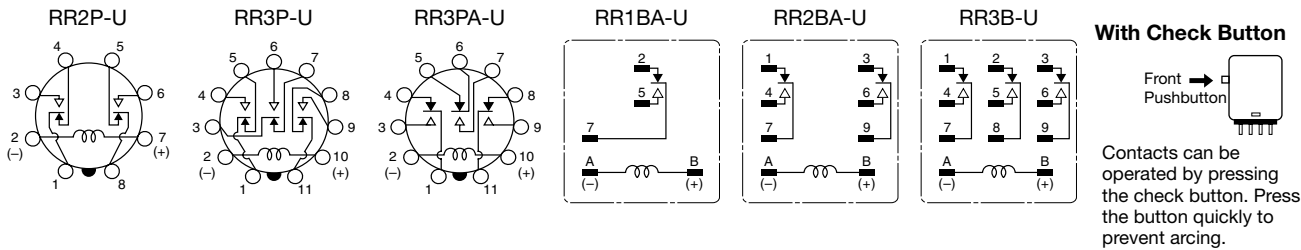
*1: Measured using 5V DC, 1A voltage drop method

*2: Measured at the rated voltage (at 20°C), excluding contact bouncing

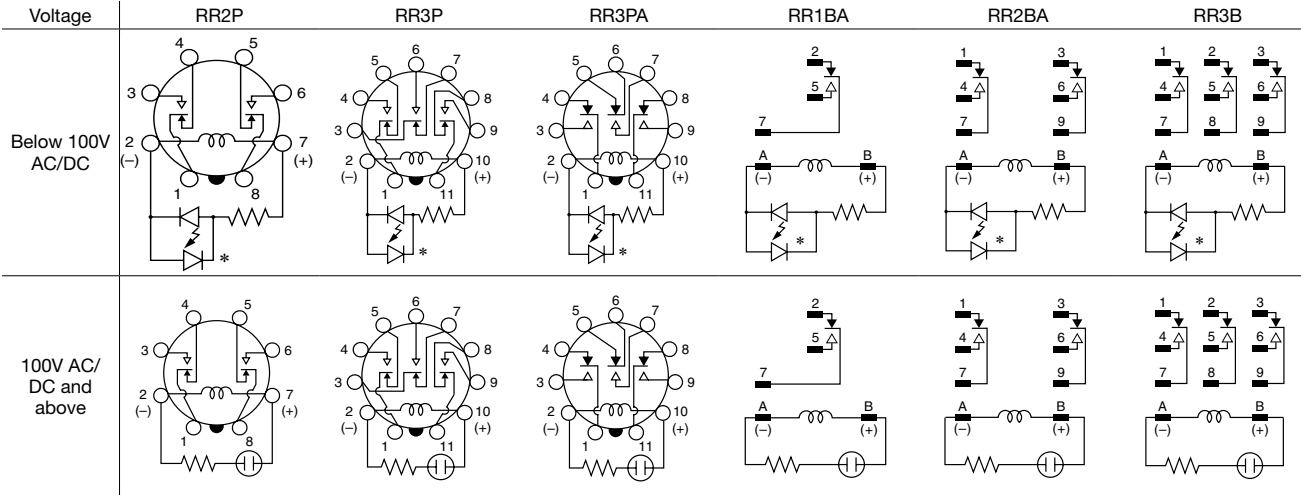
*3: For use under different temperature conditions, refer to Continuous Load Current vs. Operating Temperature Curve.

Internal Connection (Bottom View)

Basic



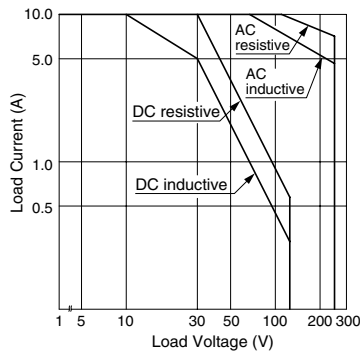
With Indicator (-UL)



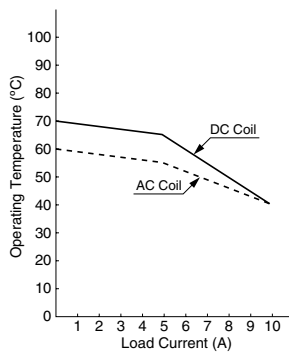
When the relay is energized, the indicator goes on.
* The LED protection diode is not contained in relays for below 100V DC.

Characteristics (Reference Data)

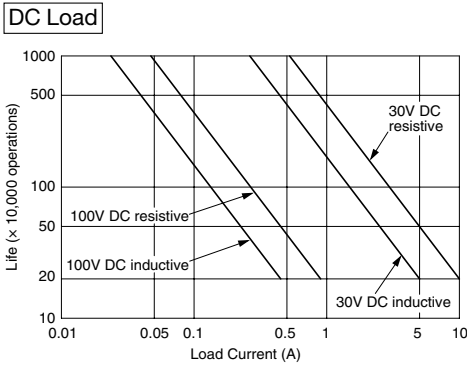
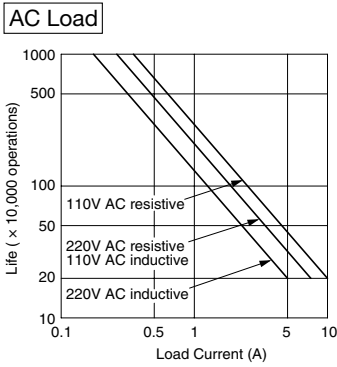
Maximum Switching Capacity



Continuous Load Current vs. Operating Temperature Curve (Basic, With Check Button, and Side Flange)



Electrical Life Curve



Relays
RJ
RU
RY
RM
RH
RR
RV8H
RF1V
RF2

Sockets
SJ
DF
SU
SF1V
Relay Sockets

RR Series Power Relays

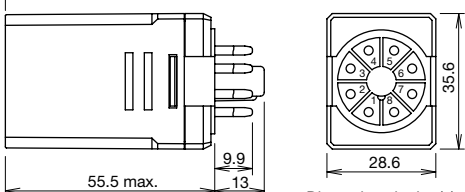
Dimensions

RR2P-U/RR2P-UL



(Photo: RR2P-U)

Total length from panel surface including relay socket
SR2P-05A: 84.5 (87.5) max., SR2P-511: 63 (68) max.



Dimensions in the () include a hold-down spring.



Applicable Socket and Hold-down Spring

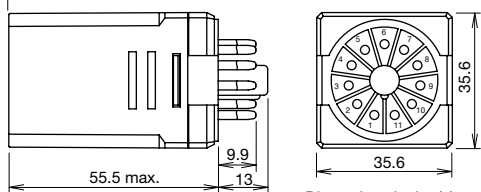
Socket		Hold-down Spring
Mounting Style	Part No.	
DIN Rail Mount Socket	SR2P-05A SR2P-05C SR2P-06A	SR2B-02F1 SFA-202
Panel Mount Socket	w/Solder Terminals	SR3P-01F1
	w/Wire Wrap Terminals	
	SR2P-511 SR2P-70	

RR3P-U/RR3P-UL/ RR3PA-U/RR3PA-UL



(Photo: RR3P-U)

Total length from panel surface including relay socket
SR3P-05A: 84.5 (87.5) max., SR3P-511: 63 (68) max.



Dimensions in the () include a hold-down spring.



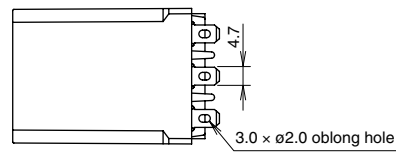
Applicable Socket and Hold-down Spring

Socket		Hold-down Spring
Mounting Style	Part No.	
DIN Rail Mount Socket	SR3P-05A SR3P-05C SR3P-06A	SR3B-02F1 SFA-202
Panel Mount Socket	w/Solder Terminals	SR3P-01F1
	w/Wire Wrap Terminals	
	SR3P-511 SR3P-70	

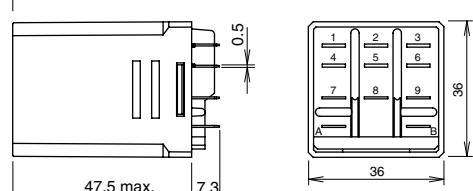
RR1BA-U/RR1BA-UL/ RR2BA-U/RR2BA-UL/ RR3B-U/RR3B-UL



(Photo: RR3B-U)



Total length from panel surface including relay socket
SR3B-05: 73 (76) max., SR3B-51: 56 (60) max.



Dimensions in the () include a hold-down spring.



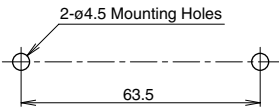
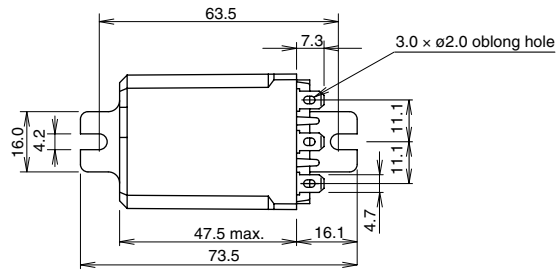
Applicable Socket and Hold-down Spring

Socket		Hold-down Spring
Mounting Style	Part No.	
DIN Rail Mount Socket	SR3B-05	SR3B-02F1 SFA-202
Panel Mount Socket	SR3B-51	SR3B-02F1

RR1BA-US RR2BA-US RR3B-US



(Photo: RR3B-US)



All dimensions in mm.