

RU/RR/RH/RM/RY & Latch Relays

General-purpose electromechanical relays Relay sockets for mounting in three ways



IDEC IZUMI CORPORATION



(04/10/25)

Category			Universal Relay	Power Relay		
Туре			RU		RR	
General		• DPDT, 10A contact • Miniature size	• 4PDT, 6A contact • Miniature size	• 4PDT, 3A contact • Bifurcated contact type	SPDT, 10A contact Heavy duty power relay	
Appearance				NT N N		
	Pin Terminal	_	_	-	_	
Type No.	Blade Terminal	RU2S	RU4S	RU42S	RR1BA-U	
	PC Board Terminal	RU2V	RU4V	RU42V	_	
	Contact Configuration	DPDT	4PDT	4PDT	SPDT	
	Contact Material	Silver alloy	Gold-clad silver	Gold-clad silver-nickel	Silver	
	2) = 404			404	
	1) 10A			TUA	
Contract		3				
Contact	Maximum Capacity (A)	3	6A			
		1		3A		
	Rated Load (resistive load)	250V AC, 10A 30V DC, 10A	250V AC, 3A 30V DC, 3A	250V AC, 3A 30V DC, 3A	110V AC, 10A 220V AC, 7.5A 30V DC, 10A	
	Rated Voltage	24, 100 (100-110), 110 (1 220 (220-240)V AC 6, 12, 24, 48, 110V DC	24, 100 (100-110), 110 (110-120), 200 (200-220), 24, 100 (100-110), 110 (110-120), 200 (200-220), 220 (220-240)V AC 6, 12, 24, 48, 110V DC 6, 12, 24, 48, 100, 110V DC			,
Coil	Power Consumption (approx.)	1.2 VA (60Hz) 1W	1.2 VA (60Hz) 1W		2.5 VA (60Hz) 1.5W	
	Pickup Voltage (against rated values)	AC: 80% max., DC: 80% m	AC: 80% max., DC: 80% max.			
	Dropout Voltage (against rated values)	AC: 30% min., DC: 10% mi	n.	AC: 30% min., DC: 15% min.		
Contact Res	sistance *1	50 mΩ max.			30 mΩ max.	
Operate Tim	ne *2	20 ms max.			25 ms max.	
Release Tim	ne *2	20 ms max.			25 ms max.	
Insulation R	Machanical	AC type: 50,000,000 opera	igger) tions min.	50,000,000,	100 MΩ min. (500V DC megger)	
Life	Mechanical	DC type: 100,000,000 oper	ations min.	50,000,000 operations min.	10,000,000 operations min.	
	Electrical	100,000 operations min.	100,000 operations min. 200,000 operations min. 100,000 operations min.		200,000 operations min.	
Dielectric Strength	Between contact and coil	2500V AC, 1 minute			2000V AC, 1 minute	
Between same-pole contacts		ts 1000V AC, 1 minute	1000V AC, 1 minute			
Operating lemperature		Simple type: -55 to +70°C,	Others: -55 to +60°C (no free	ezing)	-25 to +40°C (no freezing)	
Operating H		5 to 85% RH (no condensa	tion)		5 to 85% RH (no condensation)	
Applicable	DIN rail mount	SU2S-11L, SM2S-05A, SM2S-05C, SM2S-05D	SU2S-11L, SM2S-05A, SM2S-05C, SM2S-05D SU4S-11L, SY4S-05A, SY4S-05C, SY4S-05D			
Sockets	Panel mount	SM2S-51	SY4S-51		SR3B-51	
	PC board mount	SM2S-61	SY4S-61		-	
Dimensions	(H × W × D mm)	35 × 21 × 27.5			47.5 × 36 × 36	
Weight (app	prox.)	35g			82g	
See Page			UL, C-UL, IUV, CE			
			-			1

Note: The above table shows initial values. *1: Measured using 5V DC, 1A voltage drop method *2: Mearured at the rated voltage (25°C)



			1				
Power	Relay	Power Relay					
R	R	RH					
• DPDT, 3PDT; 10A con • Heavy duty power rela	tact y	• SPDT, DPDT, 3PDT, 4PDT; 10A contact • Miniature size					
		25	2 2 2 2 3	CU CU CU	State of the state		
RR2P-U	RR3P-U RR3PA-U	_	· _	· _	· _		
RR2BA-U	RR3B-U	RH1B-U	RH2B-U	RH3B-U	RH4B-U		
	_	RH1V2-U	RH2V2-U	RH3V2-U	RH4V2-U		
DPDT	3PDT	SPDT	DPDT	3PDT	4PDT		
Silver		Silver cadmium oxide					
11	0A		11	0A			
110V AC, 10A 220V AC, 7.5A 30V DC, 10A		110V AC/ 110V AC/30V DC, 10A 30V DC, 10A 220V AC, 7.5A					
6, 12, 24, 50, 100, 110, 115, 120, 200, 220, 230, 240V AC 6, 12, 24, 48, 110V DC		6, 12, 24, 50, 100, 110, 115, 120, 200, 220, 230, 240V AC 6, 12, 24, 48, 100, 110V DC	6, 12, 24, 50, 100-110, 110-120, 200-220, 220-240V AC 6, 12, 24, 50, 100, 110, 115, 120, 200, 220, 230, 240V AC 6, 12, 24, 48, 100-110V DC 6, 12, 24, 48, 100, 110V DC				
2.5 VA (60Hz) 1.5W		1 VA (60Hz) 0.8W	1.2 VA (60Hz) 0.9W	1.7 VA (60Hz) 1.5W	2 VA (60Hz) 1.5W		
AC: 80% max., DC: 80%	6 max.	AC: 80% max., DC: 80% max.					
AC: 30% min., DC: 15%	min.	AC: 30% min., DC: 10% min.					
30 mΩ max.		50 mΩ max.					
25 ms max.		20 ms max.		25 ms max.			
25 ms max.		20 ms max.		25 ms max.			
100 IVIS2 MIN. (500V DC			yer)				
10,000,000 operations r	nın.	50,000,000 operations min.					
200,000 operations min	\sim	200,000 operations min.	500,000 operations min.	200,000 operations min.			
Blade terminal: 2000	V AC, 1 minute V AC, 1 minute	2000V AC, 1 minute					
1000V AC, 1 minute		1000V AC, 1 minute	T				
-25 to +40°C (no freezing)		-25 to +50°C (no freezing)	-25 to +40°C (no freezing)				
5 to 85% RH (no condensation)		5 to 85% RH (no condensatio	5H2B-05A				
SR2P-05A, SR2P-06A, SR2P-05C SR3B-05	SR3P-05A, SR3P-06A, SR3P-05C	SH1B-05A SH1B-05C	SH2B-05C SH2B-05D	SH3B-05A SH3B-05C	SH4B-05A SH4B-05C		
SR2P-511, SR2P-70 SR3B-51	SR3P-511, SR3P-70 SR3B-51	SH1B-51	SH2B-51	SH3B-51	SH4B-51		
_	_	SH1B-62	SH2B-62	SH3B-62	SH4B-62		
55.5 × 29 × 36	55.5 × 36 × 36	35.6 × 14 × 27.5	35.6 × 21 × 27.5	35.6 × 31 × 27.5	35.6 × 41 × 27.5		
90g (pin terminal)	96g (pin terminal)	24g	37g	50g	74g		
UL, COA, TUV, CE	5	UL, USA, IUV, UE	А	0			
1	5	19					



Category		Miniature Relay				
Туре		RM				
General		 DPDT, 5A contact Miniature lightweight relay 	DPDT, 4PDT; 3A or 5A cor 1A bifurcated contact also			
Appearance	3	1328 02	La Ca	2.2 200.02	A DEA	
	Pin Terminal					
Type No.	Blade Terminal	RM2S-U	RY2S-U	RY4S-U	RY22S-U	+
	PC Board Terminal	RM2V-U	RY2V-U	RY4V-U	RY22V-U	
	Contact Configuration	DPDT	DPDT	4PDT	DPDT	
	Contract Material	Cilver	Calif alad silver		(biturcated)	
		Silver	Gold-clad silver		Sliver palladium	
	20	*				
	10					-
Contact	8					
Contact	Maximum Capacity (A)			50		
	4	5A				
	-		3A			
	2					
	Rated Load (resistive load)	110V AC, 5A 220V AC, 5A 30V DC, 5A	110V AC/30V DC, 3A 220V AC, 3A	240V AC, 5A 30V DC, 5A	110V AC/30V DC, 1A 220V AC, 0.8A	
	Rated Voltage	6, 12, 24, 50, 100-110, 200- 220, 220-240V AC 6, 12, 24, 48, 100-110V DC	DPDT: 6, 12, 24, 50, 100 6, 12, 24, 48, 100 4PDT: 6, 12, 24, 50, 100 6, 12, 24, 48, 100			
Coil	Power Consumption (approx.)	1.2 VA (60Hz) 0.9W	1 VA (60Hz) 0.8W	1.2 VA (60Hz) 0.9W	1 VA (60Hz) 0.8W	
	Pickup Voltage (against rated values)	AC: 80% max., DC: 80% max.	AC: 80% max., DC: 80% ma			
	Dropout Voltage	AC: 30% min., DC: 10% min.	AC: 30% min., DC: 10% mir			
Contact Res	sistance *1	30 mΩ max.	50 mΩ max.		100 mΩ max.	
Operate Tin	ne *2	20 ms min.	20 ms min.			
Dulue Te						
Release I in	ne *2	20 ms min.	20 ms min.			
Insulation R	lesistance	100 MΩ min. (500V DC megger)	100 MΩ min. (500V DC meg			
	Mechanical	50,000,000 operations min.	50,000,000 operations min.			
Life	Electrical	500,000 operations min.	200,000 operations min.	 100,000 operations min. 200,000 operations min. (220V AC, 3A) 	200,000 operations min.	
Dielectric	Between contact and coil	2000V AC, 1 minute	1500V AC, 1 minute	2000V AC, 1 minute	1500V AC, 1 minute	
Strength	Strength Between same-pole contacts 1000V AC, 1 minute		1000V AC, 1 minute			
Operating Temperature		-25 to +50°C (no freezing)	-25 to +55°C (no freezing)			
Operating Humidity		45 to 85% RH (no condensation)	45 to 85% RH (no condensa	ation)	1	
Applicable	DIN rail mount	SM2S-05A SM2S-05C SM2S-05D	SY2S-05A SY2S-05C	SY4S-05A SY4S-05C SY4S-05D	SY2S-05A SY2S-05C	
Sockets	Panel mount	SM2S-51	SY2S-51	SY4S-51	SY2S-51	
	PC board mount	SM2S-61 SM2S-62	SY2S-61	SY4S-61 SY4S-62	SY2S-61	
Dimensions	(H × W × D mm)	35.6 × 21 × 27.5	35.6 × 14 × 27.5	35.6 × 21 × 27.5	35.6 × 14 × 27.5	
Weight (app	prox.)	35g	23g	34g	23g	
Approvals		UL, CSA, TÜV, CE	UL, CSA, TÜV, CE			
See Page		26				

Note: The above table shows initial values. *1: Measured using 5V DC, 1A voltage drop method

*2: Mearured at the rated voltage (25°C)

Latch Relay							
RR2KP				RH2L		RY2KS	
DPDT; 10A contactDual coil latch relay			 DPDT; 10A contact Midget power latch re With a mechanical op 	elay peration ir	dicator	DPDT; 3A contactDual coil latch relay	
						C G Ug C U	
	RR2KP-U			—			—
	_			RH2LB-U		I	RY2KS-U
	_		I	RH2LV2-L	J		_
DPDT						DPDT	
Silver			Silver cadmium oxide			Gold-plated silver	
	104			104			
	IUA						
							3A
110V AC/10A, 220V AC/7.5A 30V DC/10A, 100V DC/0.5A		110V AC/10A, 220V AC/7.5A 30V DC/10A		110/220V AC, 3A 30V DC, 3A 100V DC, 0.2A			
6, 12, 24, 50, 100, 110, 115, 120, 200, 220, 230, 240V AC 6, 12, 24, 48, 110V DC		6, 12, 24, 50, 100, 120V AC 6, 12, 24V DC		6, 12, 24, 50, 100, 120V AC 6, 12, 24, 48, 100, 110V DC			
2.2 VA (60Hz) 1.5W			Set coil: 1.2 VA (60Hz), 2W Reset coil: 0.5 VA (60Hz), 0.9W		1.5 VA (60Hz) 1.2W		
Set voltage: 80% max.			Set voltage: 80% max.		Set voltage: 80% max.		
Reset voltage: 80% ma	ax.		Reset voltage: 80% max.		Reset voltage: 80% max.		
 30 mΩ max.			50 mΩ max.		50 mΩ max.		
Set time: 20 ms max.			20 ms max. (AC)		Set time: 25 ms max.		
Reset time: 20 ms max	ζ.		20 ms max. (AC)		Reset time: 25 ms max.		
100 MΩ min. (500V D0	C megger)	1	100 MΩ min. (500V D0	C megger)	100 MΩ min. (500V DC	C megger)
5,000,000 operations r	nin.		10,000,000 operations	min.		5,000,000 operations n	nin.
500,000 operations min.		200,000 operations mi	n.		200,000 operations min.		
1500V AC, 1 minute		2000V AC, 1 minute			1500V AC, 1 minute		
1000V AC, 1 minute			1000V AC, 1 minute			700V AC, 1 minute	
-5 to +40°C (no treezing)			-5 to +40°C (no freezi	ng) doncation	\	-5 to +40°C (no freezin	ng)
SR3P-05A SR3P-06A			SH3B-05A SH3B-05C	densation)	SY4S-05A SY4S-05C	
SR3P-511 SR3P-70			SH3B-51			SY4S-51	
-			SH3B-62			SY4S-61 SY4S-62	
80.5 × 36 × 36			35.6 × 31 × 27.5			55.3 × 21 × 27.5	
 170g			50g			67g	
UL, CSA	24		UL, CSA	26		UL, CSA	20
34				30		38	



Operating Instructions

Driving Circuit for Relays

- 1. To make sure of correct relay operation, apply the rated voltage to the relay coil.
- 2. Input voltage for the DC coil:

A complete DC voltage is best for the coil power to make sure of stable relay operation. When using a power supply containing a ripple voltage, suppress the ripple factor within 5%. When power is supplied through a rectification circuit, the relay operating characteristics, such as pickup voltage and dropout voltage, depend on the ripple factor. Connect a smoothing capacitor for better operating characteristics as shown below.



- 3. Operating the relay in synchronism with AC load:
 - If the relay operates in synchronism with the AC power voltage of the load, the relay life may be reduced. If this is the case, select a relay in consideration of the required reliability for the load. Or, make the relay to turn on and off irrespective of the AC power phase or near the point where the AC phase crosses zero voltage.



4. Leakage current while relay is off:

When driving an element at the same time as the relay operation, a special consideration is needed for the circuit design. As shown in the incorrect circuit below, a leakage current (Io) flows through the relay coil while the relay is off. The leakage current causes the coil release failure or adversely affects the vibration resistance and shock resistance. Design the circuit as shown in the correct example.



5. Surge suppression for transistor driving circuits:

When the relay coil is turned off, a high-voltage pulse is generated, causing the transistor to deteriorate and sometimes to break. Be sure to connect a diode to suppress the counter electromotive force. Then, the coil release time becomes slightly longer. To shorten the coil release time, connect a Zener diode between the collector and emitter of the transistor. Select a Zener diode with a Zener voltage slightly higher than the power voltage.



Protection for Relay Contacts

- 1. The contact ratings show the maximum values. Make sure that these values are not exceeded at any instant. When an inrush current flows through the load, the contact may be welded. If this is the case, connect a contact protection circuit, such as a current limiting resistor.
- 2. Contact protection circuit:

When switching an inductive load, arcing causes carbides to form on the contacts, resulting in an increased contact resistance. In consideration of contact reliability, contact life, and noise suppression, use of a surge absorbing circuit is recommended. Then, note that the release time of the load becomes slightly longer. Check the operation using the actual load. Incorrect use of a contact protection circuit will adversely affect the switching characteristics. Four typical examples of contact protection circuits are shown in the following table:

RC	Power C R Ind. Load	This protection circuit can be used when the load impedance is smaller than the RC impedance in an AC load power circuit. R: Resistor of approximately the same resistance value as the load C: 0.1 to 1 μ F		
	Power R Ind. Load	 This protection circuit can be used for both AC and DC load power circuits. R: Resistor of approximately the same resistance value as the load C: 0.1 to 1 μF 		
Diode	Power D Ind. Load	This protection circuit can be used for DC load power circuits. Use a diode with the following ratings. Reverse withstand voltage: Power voltage of the load circuit × 10 Forward current: More than the load current		
Varistor	Power Ind. Load	This protection circuit can be used for both AC and DC load power circuits. For a best result, when using on a power voltage of 24 to 48V AC/DC, connect a varistor across the load. When using on a power voltage of 100 to 240V AC/DC, connect a varistor across the contacts.		

3. Do not use a contact protection circuit as shown below:

Power Load	This protection circuit is very effective in arc sup- pression when opening the contacts. But, the capac- itor is charged while the contacts are opened. When the contacts are closed, the capacitor is discharged through the contacts, increasing the possibility of contact welding.
Power	This protection circuit is very effective in arc sup- pression when opening the contacts. But, when the contacts are closed, a current flows to charge the capacitor, causing contact welding.

Generally, switching a DC inductive load is more difficult than switching a DC resistive load. Using an appropriate arc suppressor, however, will improve the switching characteristics of a DC inductive load.

Soldering

- 1. When soldering the relay terminals, use a soldering iron of 30 to 60W, and quickly complete soldering within approximately 3 seconds.
- 2. Use a non-corrosive rosin flux.



Other Precautions

1. General notice:

- To maintain the initial characteristics, do not drop the relay or apply shocks to the relay.
- The relay housing cannot be removed from the base during normal operation. To maintain the initial characteristics, do not remove the relay housing.
- Use the relay in environments free from condensation of dust, sulfur dioxide (SO₂), and hydrogen sulfide (H₂S).
- Make sure that the coil voltage does not exceed the applicable coil voltage range.

Safety Precautions

- Turn off the power to the relay before starting installation, removal, wiring, maintenance, and inspection of the relays. Failure to turn power off may cause electrical shock or fire hazard.
- Observe the specifications and rated values, otherwise electrical shock or fire hazard may be caused.
- Use wires of the proper size to meet the voltage and current requirements. Tighten the terminal screws on the relay socket to a proper tightening torque.
- The surge absorbing element on AC relays with RC or DC relays with diode is provided to absorb the counter electromotive force generated by the coil. When the relay is subject to an excessive external surge voltage, the surge absorbing element may be damaged. Add another surge absorbing provision to the relay to prevent damage.

2. When connecting outputs to electronic circuits:

When the output is connected to a load which responds very quickly, such as an electronic circuit, contact bouncing causes incorrect operation of the load. Take the following measures into consideration.

- Connect an integral circuit.
- Suppress the pulse voltage due to bouncing within the noise margin of the load.
- 3. UL- and CSA-approved ratings may differ from the product rated values determined by IDEC depending on approval agents and local situations.
- 4. Do not use the relays in the vicinity of strong magnetic field sources, which may affect relay operation.

Precautions for the RU Relays

- Before operating the latching lever of the RU relay, turn off the power to the RU relay. After checking the circuit, return the latching lever to the original position.
- Do not use the latching lever as a switch. The durability of the latching lever is a minimum of 100 operations.
- When using DC loads on 4PDT relays, apply a positive voltage to terminals of neighboring poles and a negative voltage to the other terminals of neighboring poles to prevent the possibility of short circuits.
- DC type relays with a diode have a polarity in the coil terminals. Apply the DC voltage to the correct terminals.

RU Series Universal Relays

Full featured universal miniature relays Designed with environment taken into consideration

- Two terminal styles: plug-in and PCB mount
- Non-polarized LED indicator available on plug-in relays
- No internal wires, lead-free construction
- Cadmium-free contacts
- Mechanical flag indicator available on plug-in relays
- Manual latching lever with color coding for AC or DC coil
- Snap-on yellow marking plate; optional marking plates are available in four other colors
- Maximum contact ratings: 10A (RU2), 6A (RU4), 3A (RU42)
- UL, CSA, c-UL, EN compliant

Standard	Mark	Approval Organization / File No.
UL508 CSA C22.2 No. 14	c FN °us	UL/c-UL File No. E66043
CSA C22.2 No. 14		CSA File No. LR35144 (CSA mark is printed on bifurcated contact types only)
	PRODUCT SERVICE	TÜV Product Service
EN01810-1	CE	Self declaration (EC Low Voltage Directive)

With Latching Lever

Mechanical Indicator

Marking Plate

LED Indicator

latching lever types

The contact position can be confirmed through the file small windows.

Standard yellow marking plate is easily replaced with optional marking plates in four colors for easy identification of relays.

Non-polarized green LED indicator is standard provision for plug-in terminal,



Latching Lever

Using the latching lever, operation can be checked without energizing the coil. The latching lever is color coded for AC and DC coils. AC coil: Orange DC coil: Green

In Normal Operation



Note: Turn off the power to the relay coil when using the latching lever. After checking the operation, return the latching lever in the normal position.



Lever in the Latched Position

idec RU4S-D24



Types • Single Contact Type

Termination		Tune	Туре	e No.		
Termination	Latching Lever	туре	DPDT	4PDT	Coll voltage Code *	
		Standard	RU2S-*	RU4S-*	A24, A100, A110, A200, A220 D6, D12, D24, D48, D110	
	With Latching Lover	With RC (AC coil only)	RU2S-R-*	RU4S-R-*	A100, A110, A200, A220	
	with Latching Lever	With diode (DC coil only)	RU2S-D-*	RU4S-D-*	D6, D12, D24, D48, D110	
Dhun in Tannia al		With diode (DC coil only) Reverse polarity coil	RU2S-D1-*	RU4S-D1-*	D24	
(Note 1)	Without Latching Lever	Standard	RU2S-C-*	RU4S-C-*	A24, A100, A110, A200, A220 D6, D12, D24, D48, D110	
		With RC (AC coil only)	RU2S-CR-*	RU4S-CR-*	A100, A110, A200, A220	
		With diode (DC coil only)	RU2S-CD-*	RU4S-CD-*	D6, D12, D24, D48, D110	
		With diode (DC coil only) Reverse polarity coil	RU2S-CD1-*	RU4S-CD1-*	D24	
		Simple (Note 2)	RU2S-NF-*	RU4S-NF-*	A24, A100, A110, A200, A220	
PCB Terminal	Without Latching Lever	Simple (Note 2)	RU2V-NF-*	RU4V-NF-*	D6, D12, D24, D48, D110	

• Bifurcated Contact Type

Termination	Latching Lever Type		Type No. 4PDT	Coil Voltage Code *
		Standard	RU42S-*	A24, A100, A110, A200, A220 D6, D12, D24, D48, D100, D110
	With Latching Lover	With RC (AC coil only)	RU42S-R-*	A100, A110, A200, A220
	VVIIII Laterning Lever	With diode (DC coil only)	RU42S-D-*	D6, D12, D24, D48, D100, D110
		With diode (DC coil only) Reverse polarity coil	RU42S-D1-*	D24
(Note 1)		Standard	RU42S-C-*	A24, A100, A110, A200, A220 D6, D12, D24, D48, D100, D110
		With RC (AC coil only)	RU42S-CR-*	A100, A110, A200, A220
	Without Latching Lever	With diode (DC coil only)	RU42S-CD-*	D6, D12, D24, D48, D100, D110
		With diode (DC coil only) Reverse polarity coil	RU42S-CD1-*	D24
		Simple (Note 2)	RU42S-NF-*	A24, A100, A110, A200, A220
PCB Terminal	Without Latching Lever	Simple (Note 2)	RU42V-NF-*	D6, D12, D24, D48, D100, D110

Note 1: Plug-in terminal types, except for simple types, have an LED indicator and a mechanical indicator as standard. Note 2: Simple types do not have an LED indicator, a mechanical indicator, and a latching lever.

Ordering Information

Specify a coil voltage code in place of \ast in the Type No.

Coil Voltage Code *	Coil Rating
A24	24V AC
A100	100-110V AC
A110	110-120V AC
A200	200-220V AC
A220	220-240V AC
D6	6V DC
D12	12V DC
D24	24V DC
D48	48V DC
D100	100V DC
D110	110V DC

Accessory

Name	Type No.	Ordering Type No.	Color Code *	Package Quantity
Marking Plate	RU9Z-P*	RU9Z-P*PN10	A (orange), G (green), S (blue), W (white), Y (yellow)	10

Note: Specify a color code in place of the Type No. When ordering, specify the Ordering Type No. The marking plate can be removed from the relay by inserting a flat screwdriver under the marking plate.



Coil Ratings

Rated Voltage (V)		Coil	Rated Current (mA)		Coil Posistanco (O)	Operating Characteristics (against rated values at 20°C)			
		Voltage	±15% (a	at 20°C)	±10% (at 20°C)	Maximum Continuous	Minimum Pickup		
		Code	50 Hz	60 Hz	, ,	Applied Voltage	Voltage	Bropout voltage	
	24	A24	49.3	42.5	164				
	100-110	A100	9.2-11.0	7.8-9.0	3,460			30% minimum	
AC (50/60 Hz)	110-120	A110	8.4-10.0	7.1-8.2	4,550	110%	80% maximum		
(00,001.2)	200-220	A200	4.6-5.5	4.0-4.6	14,080]			
	220-240	A220	4.2-5.0	3.6-4.2	18,230				
	6	D6	155		40				
	12	D12	8	0	160	- 110%	80% maximum	10% maximum	
	24	D24	44	1.7	605				
DC	48	D48	1	8	2,560				
	100	D100	9	.7	10,000				
	110	D110	8	.9	12,100				

Note 1: The rated current includes the current draw by the LED indicator.

Note 2: Rated voltage 100V DC is available for the bifurcated contact type only.

Contact Ratings

	Continu-	Allowable Co	ontact Power	Voltogo	Rated Load		
Contact	ous Current	Resistive Load	Inductive Load	(V)	Res. Load	Ind. Load	
прот	OT 10A 2500VA AC 1250VA AC 300W DC 150W DC	250 AC	10A	5A			
		300W DC	150W DC	30 DC	10A	5A	
	4PDT 6A 1500VA AC 600VA AC 90W DC	250 AC	ЗA	0.8A			
		180W DC	90W DC	30 DC	ЗA	1.5A	
4PDT	24	750VA AC	200VA AC	250 AC	ЗA	0.8A	
bifurcated	3A	90W DC	45W DC	30 DC	ЗA	1.5A	

Note 1: On 4PDT relays, the maximum allowable total current of neighboring two poles is 6A. At the rated load, make sure that the total current of neighboring two poles does not exceed 6A (3A + 3A = 6A).

Note 2: Inductive load for the rated load — $\cos \phi = 0.3$, L/R = 7 ms

• UL and c-UL Ratings

	Resistive			General Use			Horse Power Rating		
Voltage	RU2 RU4 RU42		RU42	RU2 RU4 RU42		RU2 RU4 RU4		RU42	
250V AC	10A	—	ЗA	—	6A	_	_	1/10HP	—
30V DC	10A	6A	ЗA	_	_	_	_	_	—

• CSA Ratings

Voltago	Resistive		
vollage	RU42		
250V AC	ЗA		
30V DC	ЗA		

• TÜV Ratings

Valtaga	F	Resisti	ve	Inductive		
vollage	RU2	RU4	RU42	RU2	RU4	RU42
250V AC	10A	6A	ЗA	5A	0.8A	0.8A
30V DC	10A	6A	ЗA	5A	1.5A	1.5A

Surge Suppressor Ratings

	Туре	Ratings		
AC Coil With RC		RC series circuit R: 20 kΩ, C: 0.033 μF		
DC Coil	With Diode	Diode reverse voltage: 1000V Diode forward current: 1A		

Specifications

Type (Contact)	RU2 (DPDT)	RU4 (4PDT)	RU42 (4PDT)		
Contact Material	Silver alloy	Silver (gold clad)	Silver-nickel (gold clad)		
Contact Resistance *1	50 mΩ maximum	1			
Minimum Applicable Load *2	24V DC, 5 mA (reference value)	1V DC, 1 mA	1V DC, 0.1 mA		
Operate Time *3	20 ms maximum				
Release Time *3	20 ms maximum				
Power Consumption	AC: 1.1 to 1.4VA DC: 0.9 to 1.0W	(50 Hz), 0.9 to 1.2	VA (60 Hz)		
Insulation Resistance	100 MΩ minimun	n (500V DC megge	er)		
	Between contact and coil: 2500V AC, 1 minute				
	Between contacts of different poles:				
Dielectric Strength	2500V AC, 1 minute 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: Operating extrem	10 to 55 Hz, a nes: 10 to 55 Hz, a	mplitude 0.5 mm mplitude 0.5 mm		
Shock Resistance	Damage limits: 1000 m/s ² Operating extremes: 150 m/s ²				
Mechanical Life	AC: 50,000,000 c DC: 100,000,000	operations operations	50,000,000 operations		
Electrical Life *4	See table below				
Operating Temperature *5	Simple types: -55 to +70°C (no freezing) Others: -55 to +60°C (no freezing)				
Operating Humidity	5 to 85% RH (no condensation)				
Weight	Approx. 35g				

Note: Above values are initial values.

- *1: Measured using 5V DC, 1A voltage drop method
- *2: Measured at operating frequency of 120 operations/min (failure rate level P, reference value)
- *3: Measured at the rated voltage (at 20°C), excluding contact bouncing; Release time of AC relays with RC: 25 ms maximum
 Release time of DC relays with diode: 40 ms maximum

*4:	Contact Load and	Electrical Life	(at ambient	temperature 20°C)
-----	------------------	-----------------	-------------	-------------------

Туре	Voltage	Resistive Load	Inductive Load ($\cos \phi = 0.3$, L/R = 7 ms)	Electrical Life (operations minimum)
		10A	5A	100,000
	250V AC	5A	2.5A	500,000
RU2	201/ DC	10A	5A	100,000
	30V DC	5A	2.5A	500,000
	110V DC	0.6A	0.4A	100,000
	2501/ AC	6	2.6A	50,000
	230V AC	3A	0.8A	200,000
БПА	201/ DC	6A	2.7A	50,000
K04	30V DC	3A	1.5A	200,000
		0.65A	0.33A	50,000
		0.33A	0.18A	200,000
	250V AC	3A	0.8A	100,000
RU42	30V DC	3A	1.5A	100,000
	110V DC	0.44A	0.22A	100,000

*5: Measured at the rated voltage. Simple types include plug-in terminal simple types and all PCB terminal types.



RU2 (DPDT Contact)

• Plug-in Terminal Type

- LED indicator, mechanical flag indicator, and marking plate are standard provisions, except on simple types. · Available with or without a manual latching lever
 - · Simple types have a marking plate.

RU2S-C/RU2S-NF

(4)42

(8)44

(12)4

(14)A

Photo: RU2S-A100

Dimensions • RU2S





Mechanical Indicator Window (RU2S-C only)

Marking Plate (yellow)

· Marking plate is a standard provision.

 Not provided with an LED indicator, mechanical flag indicator, and manual latching lever.

Photo: RU2V-NF-A100

• RU2V

• PCB Terminal Type



All dimensions in mm.

Internal Connection (Bottom View) • RU2S-*R With RC

Marking plate removal slot is provided only on one side. Insert a flat screwdriver into the slot to remove the marking plate.







Over 24V AC/DC

Blank or C comes in place of * to represent types with or without a latching lever.

(1)12

5)14

(9)1

• RU2S-*D With Diode





• RU2S-*D1 With Diode **Reverse Polarity Coil**

(1)12 5)14 (9)11	(8)	4)42)44 2)41
(13)A1		14)A2
	24V DC	







Electrical Life Curves



Maximum Switching Current • RU2



Ambient Temperature vs. Temperature Rise Curves • RU2 (AC Coil, 50 Hz) • RU2 (AC Coil, 60 Hz)



The above temperature rise curves show the characteristics when 100% the rated coil voltage is applied. The heat resistance of the coil is 120°C. The slant dashed line indicates the allowable temperature rise for the coil at different ambient temperatures.

12



RU4 (4PDT Contact)

• Plug-in Terminal Type

LED indicator, mechanical flag indicator, and marking plate are standard provisions, except on simple types.
Available with or without a manual latching lever
Simple types have a marking plate.
Mus IIII (C) (C) (RU4)
Mus IIII (C) (C) (RU42)

Photo: RU42S-A100

Dimensions • RU4S/RU42S



Mechanical Indicator Window (RU4S-C/RU42S-C only) Marking Plate (yellow) Color Marking LED Indicator AC: Yellow (green) DC: Blue (RU4S-C/ RU42S-C only) 圓 Marking Plate 35.0 Removal Slot 66 Ы

0.5

네크네트 네트

네드네요 네요 네蠞

27.5

6.4

ø1.2 × 2.2 Hole

RU4S-C/RU4S-NF

RU42S-C/RU42S-NF

PCB Terminal Type

- Marking plate is a standard provision.
- Not provided with an LED indicator, mechanical flag indicator, and manual latching lever.

Photo: RU4V-NF-D24

• RU4V/RU42V



Marking plate removal slot is provided only on one side. Insert a flat screwdriver into the slot to remove the marking plate.



Internal Connection (Bottom View) • RU4S-*R/RU42S-*R • RU4S-*D1/RU42S-*D1 • RU4S-*/RU42S-* • RU4S-*D/RU42S-*D Standard With RC With Diode With Diode $\begin{array}{c} (1)\underline{12} & (2)\underline{22} & (3)\underline{32} & (4)\underline{42} \\ \hline \\ (5)\underline{14} & (6)\underline{24} & (7)\underline{34} & (8)\underline{44} \\ \hline \\ (9)\underline{11} & (10)\underline{21} & (11)\underline{31} & (12)\underline{41} \\ \end{array}$ **Reverse Polarity Coil** $\begin{array}{c} (1)12 & (2)22 & (3)32 & (4)42 \\ (5)14 & (6)24 & (7)34 & (8)44 \\ (9)11 & (10)21 & (11)31 & (12)41 \end{array}$ $\begin{array}{c} (1)12 & (2)22 & (3)32 & (4)42 \\ \hline \\ (5)14 & (6)24 & (7)34 & (6)44 \\ (9)11 & (10)21 & (11)31 & (12)41 \\ \end{array}$ (1)12 (2)22 (3)32 (4)42 (5)14 (6)24 (7)34 (8)44 (9)11 (10)21 (11)31 (12)41 -Ռ (14)A2 (14)A (14)A2 (13)A1 13)A1 s" 3)A (14)A2 24V DC or less 24V AC/DC or less 24V DC $\begin{array}{c} (1)12 & (2)22 & (3)32 & (4)42 \\ \\ (5)14 & (6)24 & (7)34 & (8)44 \end{array}$ (1)12 (2)22 (3)32 (4)42 • RU4S-NF-*/RU4V-NF-* (6)2⁴ (7)34 (8)44 RU42S-NF-*/RU42V-NF-* (10)21 (11)31 (12)41 $\begin{array}{c} (1)12 \\ (2)22 \\ (3)32 \\ (4)42 \\ (5)14 \\ (6)24 \\ (7)34 \\ (8)44 \\ (9)11 \\ (10)21 \\ (11)31 \\ (12)41 \\ \end{array}$ -П 13)A (14)A 14)A2 Over 24V DC Over 24V AC/DC -0-13)A1 (14)A2

Blank or C comes in place of \ast to represent types with or without a latching lever.



Electrical Life Curves





The above temperature rise curves show the characteristics when 100% the rated coil voltage is applied. Load current 6A × 2 poles is for the RU4 types only.

70

60

70

60

50

40

30

20

10

0

Temperature

The heat resistance of the coil is 120°C. The slant dashed line indicates the allowable temperature rise for the coil at different ambient temperatures.

Idec

Load curren 6A × 2 poles

No load current

Ambient Temperature (°C)

70

60

current

10 20 30 40 50



70

60

50

40

30

20

10

0

Load current

6A × 2 poles

No loa d current

Ambient Temperature (°C)

ad current

3A × 4 poles

10 20 30 40 50 AC resistive AC inductive (cos ø = 0.3)

RR Series **Power Relays**

Heavy-duty power type 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.



91 🚯 🕲 (E

Types						
Termination	Turne					
Termination	туре	SPDT	DPDT	3PDT	(Note)	
	Basic	-	RR2P-U∗ ★	RR3P-U∗ ★	RR3PA-U* 🛧	
	With Indicator	-	RR2P-UL∗ ★	RR3P-UL* 🛧	RR3PA-UL* 🛧	
Pin Terminal	With Check Button	-	RR2P-UC∗ ★	RR3P-UC* 🛧	RR3PA-UC* 🛧	AC6 AC12 AC24
	With Indicator and Check Button	-	RR2P-ULC∗ ★	RR3P-ULC* 🛧	RR3PA-ULC∗ ★	AC50, AC100, AC110, AC115, AC120,
	Basic	RR1BA-U*	RR2BA-U*	RR3B-U*	-	AC200, AC220,
	With Indicator	RR1BA-UL*	RR2BA-UL*	RR3B-UL*	-	AC230, AC240,
Blade	With Check Button	RR1BA-UC*	RR2BA-UC*	RR3B-UC*	_	DC6, DC12, DC24, DC48, DC110
Terminal	With Indicator and Check Button	RR1BA-ULC*	RR2BA-ULC*	RR3B-ULC*	_	2010, 20110
	Side Flange Type	RR1BA-US*	RR2BA-US*	RR3B-US*	_	

Note:

Both RR3P and RR3PA are 3PDT relays and have different terminal arrangements. See Internal Connection on page 17.

Ordering Information

When ordering, specify the Type No. and coil voltage code.

Type numbers marked with \star in the table above are UL-recognized, CSA-certified, and TÜV-approved. Others are UL-recognized and CSA-certified.

(Example) <u>RR3P-U</u> AC110

Type No.

Coil Voltage Code

Coil Ratings

Rated Voltage (V)		Rated Current (mA) ±15% at 20°C		Coil Resistance (Ω)	Operation Characteristics (against rated values at 20°C)			
		50Hz	60Hz	±10% at 20°C	Max. Continuous Applied Voltage	Minimum Pickup Voltage	Dropout Voltage	
	6	490	420	4.9				
	12	245	210	18				
	24	121	105	79		80% maximum	30% minimum	
	50	58	50	350				
ĺ₽́	100	29	25	1,370	- 110%			
/09/	110	27	23	1,680				
(20	115	25	21.5	1,800				
AC AC	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				
	6	2	240	25				
	12	1	20	100		80% 1 maximum mir		
B	24	(60	400	110%		15%	
	48	:	30	1,600				
	110	13		8,460	1			



Contact Ratings

	Maximum Contact Capacity								
Orationary	Allowable Co	ontact Power	Rated Load						
Continuous Current	Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load				
		1100VA AC 150W DC	110V AC	10A	7.5A				
10A	1650VA AC 300W DC		220V AC	7.5A	5A				
	00000000		30V DC	10A	5A				

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

• UL Ratings

Voltage	Resistive	General use	Horse Power Raging		
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		24V DC, 10 mA; 5V DC, 20 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)				
Dislactric Ctransth	Pin Terminal	Between live and dead parts:1500V AC, 1 minuteBetween contact and coil:1500V AC, 1 minuteBetween contacts of different poles:1500V AC, 1 minuteBetween 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 mmOperating extremes:10 to 55 Hz, amplitude 0.5 mm				
Shock Resistance		Damage limits: 1000 m/s ² Operating extremes: 100 m/s ²				
Electrical Life		200,000 operations (220V AC, 5A)				
Mechanical Life		10,000,000 operations				
Operating Temperature	*3	-25 to +40°C (no freezing)				
Operating Humidity		5 to 85% RH (no condensation)				
Weight (approx.) (Basic type)		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)





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 Type, With Check Button, and Side Flange Type)





Dimensions



55.5 max

• Applicable Socket and Hold-down Spring

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



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

• Applicable Socket and Hold-down Spring

	Socket									
Mou	nting Style	Type No.	Spring							
DIN Rail	Mount Socket	SR3P-05A SR3P-05C SR3P-06A	SR3B-02F1 SFA-202							
Panel	w/Solder Terminals	SR3P-511	SP2D 01E1							
Socket	w/Wire Wrap Terminals	SR3P-70	SKSP-UIFI							

71' ()) 🕑 () (

(Photo: RR3P-U)



Applicable Socket and Hold-down Spring

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





RH Series **Power Relays**

SPDT through 4PDT, 10A contacts Midget power type relays

The RH series are miniature power relays with a large capacity. The RH relays feature 10A contact capacity as large as the RR series and the same size as IDEC's miniature relays. The compact size saves space.



FLY (E

Types

Tormination	Туро			SPDT	DPDT				
Termination	туре	Type No.		Coil Voltage Code *	Type No.		Coil Voltage Code *		
	Basic	RH1B-U*	*		RH2B-U*	*			
	With Indicator	RH1B-UL*	*	AC6, AC12, AC24, AC50,	RH2B-UL∗ ★		AC6, AC12, AC24, AC50,		
	With Check Button	-		AC100, AC110, AC113, AC120, AC200, AC220, AC230, AC240	RH2B-UC*	★	AC100-110, AC110-120, AC200-220, AC220-240		
	With Indicator and Check Button	_		DC6, DC12, DC24, DC48, DC100, DC110	RH2B-ULC*	*	DC6, DC12, DC24, DC48, DC100-110		
	Top Bracket Mounting	RH1B-UT*	*		RH2B-UT*	*			
Plug-in	With Diode (DC coil only)	RH1B-UD*	*	DC6, DC12, DC24, DC48, DC100, DC110	RH2B-UD*	*			
Ierminal	With Indicator and Diode (DC coil only)	E		_	RH2B-ULD∗ ★		DC100-110		
	With Resistor and Capacitor (100V AC and over)	_		_	RH2B-R*		AC100-110, AC110-120, – AC200-220, AC220-240		
	With Indicator and RC (100V AC and over)	-		_	RH2B-LR*				
PC Board	Basic	RH1V2-U∗ ★		AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220, AC230, AC240 DC6, DC12, DC24, DC48, DC100, DC110	RH2V2-U∗ ★		AC6, AC12, AC24, AC50, AC100-110, AC110-120, AC200-220, AC220-240 DC6, DC12, DC24, DC48, DC100-110		
	With Indicator			_	RH2V2-UL∗ ★				
	With Diode (DC coil only)	RH1V2-UD*	*	DC6, DC12, DC24, DC48, DC100, DC110	RH2V2-UD*	*	DC6, DC12, DC24, DC48, DC100-110		

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



Types	
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Termination	Type			3PDT	4PDT			
Termination	туре	Type No.		Coil Voltage Code *	Type No.		Coil Voltage Code *	
	Basic	RH3B-U*	*	AC6, AC12, AC24, AC50,	RH4B-U*	*	AC6, AC12, AC24, AC50,	
	With Indicator	RH3B-UL*	*	AC100, AC110, AC115,	RH4B-UL*	*	AC100, AC110, AC115,	
	With Check Button	RH3B-UC*	*	AC120, AC200, AC220,	RH4B-UC*	*	AC120, AC200, AC220,	
Plug-in	With Indicator and Check Button	RH3B-ULC∗ ★		AC230, AC240 DC6, DC12, DC24, DC48,	RH4B-ULC*	*	AC230, AC240 DC6, DC12, DC24, DC48,	
Terminal	Top Bracket Mounting	RH3B-UT*	*	DC100, DC110	RH4B-UT*	*	DC100, DC110	
	With Diode (DC coil only)				RH4B-UD*	*		
	With Indicator and Diode (DC coil only)	RH3B-LD*		DC100, DC110	RH4B-LD*		DC100, DC110	
	Basic	RH3V2-U*	*	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220,	RH4V2-U*	*	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200, AC220,	
PC Board Terminal	With Indicator	RH3V2-UL*	*	AC230, AC240 DC6, DC12, DC24, DC48, DC100, DC110	RH4V2-UL*	*	AC230, AC240 DC6, DC12, DC24, DC48, DC100, DC110	
	With Diode (DC coil only)	RH3V2-D*		DC6, DC12, DC24, DC48, DC100, DC110	RH4V2-UD*	*	DC6, DC12, DC24, DC48, DC100, DC110	

Type numbers marked with \star in the table above are UL-recognized, CSA-certified, and TÜV-approved.

Ordering Information When ordering, specify the Type No. and coil voltage code.									
(Example) <u>RH3B-U</u>	AC110								
Type No.	Coil Voltage Code								

Coil Ratings

Rated Voltage (V)					Rated Current (mA) ±15% at 20°C							Coil Resistance (Ω)				Operation Characteristics (against rated values at 20°C)			
	SPDT	SPDT DPDT 3PDT		4PDT		50	Ηz			60	Hz			10/01			Max. Continuous	Min. Pickup	Dropout
	-				SPDT	DPDT	3PDT	4PDT	SPDT	DPDT	3PDT	4PDT	SPDT	DPDT	3PDT	4PDT	Applied Voltage	Voltage	Voltage
	6	6	6	6	170	240	330	387	150	200	280	330	18.8	9.4	6.4	5.4			
	12	12	12	12	86	121	165	196	75	100	140	165	76.8	39.3	25.3	21.2		80% maximum n	
	24	24	24	24	42	60.5	81	98	37	50	70	83	300	153	103	84.5			
	50	50	50	50	20.5	28.9	39.5	47	18	24	34	40	1,280	680	460	340	-		30% minimum
[₽	100	100-110	100	100	10.5	10.3-11.8	20	23.5	9	9.1-10.0	17	20	5,220	3,360	1,940	1,560	1		
96	110	_	110	110	9.6	-	18.1	21.6	8.4	_	15.5	18.2	6,950	-	2,200	1,800	4400/		
(50/	115	110-120	115	115	8.9	9.4-10.8	17.1	20.8	7.8	8.0-9.2	14.8	17.5	7,210	4,290	2,620	1,910	110%		
Ą	120	_	120	120	8.6	-	16.4	19.5	7.5	_	14.2	16.5	8,100	_	2,770	2,220	1		
	200	200-220	200	200	5.6	5.1-5.9	9.8	11.8	4.9	4.3-5.0	8.5	10	21,442	13,690	8,140	6,360	_		
	220	_	220	220	4.7	-	8.8	10.7	4.1	_	7.7	9.1	25,892	_	10,800	7,360	1		
	230	220-240	230	230	4.7	4.7-5.4	8.5	10.3	4.1	4.0-4.6	7.4	8.7	26,710	18,820	11,500	8,520	1		
	240	_	240	240	4.9	-	8.2	9.8	4.3	_	7.1	8.3	26,710	-	12,100	9,120	1		
	SPDT	DPDT	3PDT	4PDT	SF	PDT	DP	DT	3F	DT	4P	DT	SPDT	DPDT	3PDT	4PDT			
	6	6	6	6	1	28	1:	50	2	40	2	50	47	40	25	24	-		
	12	12	12	12	6	64	7	5	1:	20	1:	25	188	160	100	96			
ß	24	24	24	24	:	32	36	6.9	6	60	6	2	750	650	400	388	110%	80%	10%
	48	48	48	48		18	18	3.5	3	30	31		2,660	2,600	1,600	1,550	1	maximum	
	100	100-110	100	100		10	8.2	-9.0	14	4.5	1	5	10,000	12,250	6,900	6,670	1		
	110	-	110	110		8	-	_	12	2.8	1	5	13,800	-	8,600	7,340	1		

RH Series **Power Relays**

Contact Ratings

	Maximum Contact Capacity						
	Orationary	Allowable Co	ontact Power	Ra	ated Loa	d	
Туре	Current	Resistive Load	Inductive Load	Voltage (V)	Res. Load	Ind. Load	
		1540VA AC	990VA AC	110 AC	10A	7A	
SPDT	10A			220 AC	7A	4.5A	
			2.00.20	30 DC	10A	7A	
DPDT		10501/0.00		110 AC	10A	7.5A	
3PDT	10A	1650VA AC 300W DC	225W DC	220 AC	7.5A	5A	
4PDT		30011 20		30 DC	10A	7.5A	

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

• TÜV Ratings

	Voltage	RH1	RH2	RH3	RH4
	240V AC	10A	10A	7.5A	7.5A
	30V DC	10A	10A	10A	10A
ľ					

AC: cos ø = 1.0, DC: L/R = 0 ms

Specifications

Contact Material		Silver cadmium oxide					
Contact Resistance *1		50 mΩ maximum					
Minimum Applicable Loa	ıd	24V DC, 30 mA; 5V DC,	100 mA (refe	rence value)			
SPD DPD		20 ms maximum					
Operate fille *2	3PDT 4PDT	25 ms maximum	25 ms maximum				
	SPDT DPDT	20 ms maximum					
Release Time *2	3PDT 4PDT	25 ms maximum					
	SPDT	AC: 1.1 VA (50 Hz), 1 VA DC: 0.8W	(60 Hz)				
Power Consumption (approx.)	DPDT	AC: 1.4 VA (50 Hz), 1.2 V DC: 0.9W	'A (60 Hz)				
	3PDT	AC: 2 VA (50 Hz), 1.7 VA DC: 1.5W	(60 Hz)				
	4PDT	AC: 2.5 VA (50 Hz), 2 VA DC: 1.5W	AC: 2.5 VA (50 Hz), 2 VA (60 Hz) DC: 1.5W				
Insulation Resistance		100 MΩ minimum (500V DC megger)					
	SPDT	Between live and dead parts: Between contact and coil: Between contacts of the same pole:		2000V AC, 1 minute 2000V AC, 1 minute 1000V AC, 1 minute	*3		
Dielectric Strength	DPDT 3PDT 4PDT	Between live and dead parts: Between contact and coil: Between contacts of different poles: Between contacts of the same pole:		2000V AC, 1 minute 2000V AC, 1 minute 2000V AC, 1 minute 1000V AC, 1 minute			
Operating Frequency	1	Electrical: Mechanical:	1800 opera 18,000 ope	tions/h maximum rations/h maximum			
Vibration Resistance		Damage limits: Operating extremes:	10 to 55 Hz 10 to 55 Hz	z, amplitude 0.5 mm z, amplitude 0.5 mm			
Shock Resistance		Damage limits: Operating extremes:	1000 m/s ² 200 m/s ² (\$ 100 m/s ² (\$	SPDT, DPDT) SPDT, 4PDT)			
	DPDT	500,000 operations minir	num (110V A	C, 1A)			
Electrical Life SPD 3PD 4PD		200,000 operations minir	num (110V A	C, 1A)			
Mechanical Life		50,000,000 operations m	inimum				
	SPDT	-25 to +50°C (no freezing	g)				
Operating Temperature *4	DPDT 3PDT 4PDT	-25 to +40°C (no freezing	g)				
Operating Humidity		45 to 85% RH (no conde	nsation)				
Weight (approx.)		SPDT: 24g, DPDT: 37g, 3PDT: 50g, 4PDT: 74g					

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

Release time of relays with diode: 40 ms maximum

*3: Relays with indicator or diode: 1000V AC, 1 minute

*4: For use under different temperature conditions, refer to Continuous Load Current vs. Operating Temperature Curve. The operating temperature range of relays with indicator or doide is -25 to +40°C.

• UL Ratings

	Resistive		General use		Horse Power Rating		Rating		
Voltage	RH1 RH2	RH3	RH4	RH1 RH2	RH3	RH4	RH1 RH2	RH3	RH4
240V AC	10A	7.5A	7.5A	7A	6.5A	5A	1/3 HP	1/3 HP	-
120V AC	_	10A	10A	_	7.5A	7.5A	1/6 HP	1/6 HP	_
30V DC	10A	10A	_	7A	-	_	_	-	_
28V DC	_	_	10A	_	_	—	_	_	_

• CSA Ratings

Voltage	Resistive			General use				Horse Power Rating	
	RH1	RH2	RH3	RH4	RH1	RH2	RH3	RH4	RH1, 2, 3
240V AC	10A	10A	—	7.5A	7A	7A	7A	5A	1/3 HP
120V AC	10A	10A	10A	10A	7.5A	7.5A	_	7.5A	1/6 HP
30V DC	10A	10A	10A	10A	7A	7.5A	_	_	_



Internal Connection (Bottom View)

• Basic Type



• With Indicator (-L type)



• With Diode (-D type) SPDT DPDT 3PDT 4PDT This type contains a diode to absorb the counter emf generated when the coil is deenergized. The release time is slightly longer. Available for DC coil only. 5 -D 6 7 8 Diode Characteristics 10 10 Reverse withstand voltage: 1,000V 00 3(_ 13(-) (+)14 (+) $(+)\overline{14}$ 13(-) Forward current: 1A

• With Indicator and Diode (-LD type) DPDT 3PDT 4PDT This type contains an operation indicator and a sure absorber, and has the same height as the basic type. 1 5 -> 6 Below Below 10 13(-24V DC 100V DC 00 00 13(-(+)12 (+)14 w 8 24V DC 100V DC 10 \sim (+)14 and over and over 13(-) 13((+)1w ⊕ **۸**۸۸ Æ -D -N

• With Resistor and Capacitor (-R type)





This type contains an RC circuit to absorb the surge voltage generated when the coil is deenergized. This type is approx. 17 mm higher than the basic type. Available for AC coils of 100V and over. R: 120 Ω C: 0.033 μ F

• With Indicator and RC (-LR type)

13(-)

idec

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This type contains an operation indicator and a surge absorber. This type is approx. 17 mm higher than the basic type. Available for AC coils of 100V and over.



Characteristics (Reference Data) • Maximum Switching Capacity



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RH series **Power Relays**

• Continuous Load Current vs. Operating Temperature Curve (Basic Type, With Check Button, and Top Bracket Mounting Type)



Dimensions RH1B-U/RH1B-UL/RH1B-UD



Dimensions in the () include a hold-down spring. ø2.6 hol Π 5.4 14 35.6 max 6.4

Total length from panel surface including relay socket SH2B-05A: 61.5 (63.5) max., SH2B-51: 39.6 (41.6) max

∎ Ð 4 7 ø2.6 hole

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35.6 ma

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Dimensions in the () include a hold-down spring

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9 13 0 14

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8 12 4

27.5

27.5

Total length from panel surface including relay socket SH1B-05A: 61.5 (63.5) max., SH1B-51: 39.6 (41.6) max.

• Applicable Socket and Hold-down Spring

Soc	ket	Hold-down
Mounting Style	Type No.	Spring
DIN Rail Mount Socket	SH1B-05A SH1B-05C	SY2S-02F1 SFA-101 SFA-202
Panel Mount Socket	SH1B-51	SY4S-51F1
PC Board Mount Socket	SH1B-62	SFA-302

Applicable Socket and Hold-down Spring									
Soc	ket	Hold-down							
Mounting Style	Type No.	Spring							
DIN Rail Mount Socket	SH2B-05A SH2B-05C	SY4S-02F1 SFA-101 SFA-202							
	SH2B-05D	SFA-502							
Panel Mount Socket	SH2B-51	SY4S-51F1 (SY4S-02F1) SFA-301 SFA-302							
PC Board Mount Socket	SH2B-62	SY4S-51F1 (SY4S-02F1)							
Noto: (SV/S 02E1) is for the relay wi	th chock button							

Note: (SY4S-02F1) is for the relay with check but

Applicable Socket and Hold-down Spring

Soc	Socket					
Mounting Style	Type No.	Spring				
DIN Rail Mount Socket	SH3B-05A SH3B-05C	SH3B-05F1 SFA-101 SFA-202				
Panel Mount Socket	SH3B-51	SY4S-51F1 (SH3B-05F1)				
PC Board Mount Socket	SH3B-62	SFA-301 SFA-302				

Note: (SH3B-05F1) is for the relay with check button.

• Applicable Socket and Hold-down Spring

Soc	Hold-down	
Mounting Style	Type No.	Spring
DIN Rail Mount Socket	SH4B-05A SH4B-05C	SH4B-02F1 SFA-101 SFA-202
Panel Mount Socket	SH4B-51	SY4S-51F1 (SH4B-02F1)
PC Board Mount Socket	SH4B-62	SFA-301 SFA-302

Note 1: Use two SY4S-51F1 hold-down springs for the SH4B-51 and SH4B-62 sockets.

Note 2: (SH4B-02F1) is for the relay with check button.



RH2B-U/RH2B-UL/RH2B-UD/RH2B-ULD

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RH3B-U/RH3B-UL/RH3B-D/RH3B-LD



RH4B-U/RH4B-UL/RH4B-UD/RH4B-LD





35.6 ma

35.6 ma

(Photo: RH2B-U)



SH4B-05A: 61.5 (63.5) max., SH4B-51: 39.6 (41.6) max Dimensions in the () include a hold-down spring.

6.4

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RM Series **Miniature Relays**

DPDT contacts (5A) Plug-in and PC board terminal styles

- Compact miniature size saves space
- Options include indicators and check buttons.



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Types

Tuno		Plug-in Terminal	PC Board Terminal			
туре	Type No.	Coil Voltage Code *	Type No.	Coil Voltage Code *		
Basic	RM2S-U∗ ★	AC6, AC12, AC24, AC50,	RM2V-U∗ ★	AC6, AC12, AC24, AC50, AC100-110, AC110-120, AC200-220, AC220-240		
With Indicator	RM2S-UL∗ ★	AC100-110, AC110-120, AC200-220, AC220-240 DC6, DC12, DC24, DC48,	RM2V-UL* ★	DC6, DC12, DC24, DC48, DC100-110		
With Check Button	RM2S-UC∗ ★	DC100-110	—	_		
Top Bracket Mounting Type	RM2S-UT∗ ★	_	—	_		
With Diode (DC coil only)	RM2S-UD* 🛧	DC6, DC12, DC24, DC48,	_	_		
With Indicator and Diode (DC coil only)	RM2S-ULD* ★	DC100-110	_	-		

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



Coil Ratings

Rated Voltage (V)		Rated Current (mA) ±15% at 20°C 50Hz		Coil Resistance (Ω)	Operation Characteristics (against rated values at 20°C)			
				±10% at 20°C	Max. Continuous Applied Voltage	Min. Pickup Voltage	Dropout Voltage	
	6	240	200	9.4				
	12	121	100	39.3				
Π	24	60.5	50	153		80% maximum	30% minimum	
/60	50	28.9	24	680	- 110% -			
(50	100-110	10.3-11.8	9.1-10.0	3,360				
AC	110-120	9.4-10.8	8.2-9.2	4,290				
	200-220	5.1-5.9	4.3-5.0	13,690				
	220-240	4.7-5.4	4.0-4.6	18,820				
	6	1	50	40				
	12	7	′5	160			4.007	
2	24	36	5.9	650	110%	80%	10% minimum	
	48	18	3.5	2,600		maximum		
	100-110	8.2	-9.0	12,250				



Contact Ratings

	M	aximum Con	tact Capacity	r	
Orationa	Allowable Co	ontact Power	Rated Load		
Current	Resistive Load	Inductive Load	Voltage	Res. Load	Ind. Load
			110V AC	5A	2.5A
5A	1100VA AC	440VA AC	220V AC	5A	2A
	13000000 730000		30V DC	5A	2.5A

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

• UL Ratings

Voltage	Resistive	General use
240V AC	5A	2A
120V AC	—	2.5A
100V DC	0.4A	—
30V DC	5A	_

• CSA Ratings

Voltage	Resistive	General use
240V AC	5A	2A
120V AC	5A	2.5A
100V DC	—	0.4A
30V DC	5A	2.5A

• TÜV Ratings

240V AC	5A
30V DC	5A

AC: cos ø = 1.0, DC: L/R = 0 ms

Characteristics (Reference Data)



• Continuous Load Current vs. Operating Temperature Curve (Basic Type, With Check Button, and Top Bracket Mounting Type)



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Specifications

Silver			
30 mΩ maximum *1			
24V DC, 10 mA; 5V DC, 20 mA (reference value)			
20 ms maximum *2			
20 ms maximum *2			
AC: 1.4 VA (50 Hz), 1.2 VA (60 Hz) DC: 0.9W			
100 M Ω minimum (500V DC megger)			
Between live and dead parts: 2000V AC, 1 minute *3 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			
Electrical: 1800 operations/h maximum Mechanical: 18,000 operations/h maximum			
Coil: 85°C maximum, Contact: 65°C maximum			
Damage limits: 10 to 55 Hz, amplitude 0.5 mm Operating extremes: 10 to 55 Hz, amplitude 0.5 mm			
Damage limits: 1000 m/s ² Operating extremes: 200 m/s ²			
500,000 operations (220V AC, 5A)			
50,000,000 operations			
-25 to +45°C (no freezing) *4			
45 to 85% RH (no condensation)			
35g			

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 Release time of relays with diode: 40 ms maximum
- *3: Relays with indicator or diode: 1000V AC, 1 minute
- *4: For use under different temperature conditions, refer to Continuous Load Current vs. Operating Temperature Curve. The operating temperature range of relays with indicator or doide is -25 to +40°C.

• Electrical Life Curve





Internal Connection (Bottom View)



Dimensions

 Plug-in Type (Solder Terminal) RM2S-U/RM2S-UL RM2S-UD/RM2S-ULD



Total length from the panel surface including relay socket SM2S-05A: 61.5 (63.5) max., SM2S-51: 39.6 (41.6) max. Dimensions in the () include a hold-down spring

35.6 max

Applicable Socket and Hold-down Spring Socket Hold-down Spring Mounting Style Type No. SY4S-02F1 SM2S-05A SFA-101 **DIN Rail Mount** SM2S-05C SFA-202 Socket SM2S-05D SFA-502 SY4S-51F1 Panel Mount SM2S-51 Socket (SY4S-02F1) SFA-301 SM2S-61 SFA-302 PC Board Mount SY4S-51F1 Socket SM2S-62 (SY4S-02F1)

Note: (SY4S-02F1) is for the relay with check button.

 PC Board Terminal Type RM2V-U/RM2V-UL

FLY ():



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• Top Bracket Mounting Type (Solder Terminal) RM2S-UT



91 🚯 🎹 🤇 E



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All dimensions in mm.



RY Series Miniature Relays

DPDT (3A) and 4PDT (5A) contacts Bifurcated contacts are also available

The RY series are general purpose miniature relays with a 3A or 5A contact capacity. A wide variety of terminals styles and coil voltages meet a wide range of applications. All 4PDT types have arc barriers.





Types

• Plug-in Terminal Type

Contract			DPDT	4PDT		
Contact Type		Type No.	Coil Voltage Code *	Type No.	Coil Voltage Code *	
	Basic	RY2S-U∗ ★		RY4S-U∗ ★		
	With Indicator	RY2S-UL* 🛧	AC6, AC12, AC24, AC50, AC100,	RY4S-UL* ★	AC6, AC12, AC24, AC50,	
	With Check Button	—	AC110, AC113, AC120, AC200, AC220, AC220, AC220, AC230, AC240	RY4S-UC* ★	AC200-220, AC220-240	
	With Indicator and Check Button	_	DC6, DC12, D24, DC48, DC100, DC110	RY4S-ULC* ★	DC6, DC12, DC24, DC48, DC100-110	
Standard	Standard Top Bracket Mounting			RY4S-UT* ★		
	With Diode (DC coil only)	RY2S-UD* ★	DC6, DC12, DC24, DC48, DC100, DC110	RY4S-UD* ★		
	With Indicator and Diode (DC coil only)	_	_	RY4S-ULD∗ ★	DC100-110	
	Basic	RY22S-U* ★	AC6, AC12, AC24, AC50, AC100,	—		
	With Indicator	RY22S-UL* ★	AC110, AC115, AC120, AC200,	—		
Bifurcated	Top Bracket Mounting	RY22S-UT∗ ★	DC6, DC12, DC24, DC48, DC100, DC110	_	_	
	With Diode (DC coil only)	RY22S-UD∗ ★	DC6, DC12, DC24, DC48, DC100, DC110		_	

• PC Board Terminal Type

Contact Type			DPDT	4PDT			
		Type No.	Coil Voltage Code *	Type No.	Coil Voltage Code *		
	Standard	RY2V-U* ★	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200,	RY4V-U* ★	AC6, AC12, AC24, AC50, AC100-110, AC110-120,		
Standard	With Indicator	RY2V-UL∗ ★	AC220, AC230, AC240 DC6, DC12, DC24, DC48, DC100, DC110	RY4V-UL∗ ★	AC200-220, AC220-240 DC6, DC12, DC24, DC48, DC100-110		
	With Diode (DC coil only)	RY2V-UD* ★	DC6, DC12, DC24, DC48, DC100, DC110	_	_		
	Standard	RY22V-U* ★	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200,	_			
Bifurcated	With Indicator	RY22V-UL∗ ★	AC220, AC230, AC240 DC6, DC12, DC24, DC48, DC100, DC110	_	_		
	With Diode (DC coil only)	RY22V-UD∗ ★	DC6, DC12, DC24, DC48, DC100, DC110	_	_		

Type numbers marked with \star in the tables above are UL-recognized, CSA-certified, and TÜV-approved.

Ordering Information

When ordering, specify the Type No. and coil voltage code.

(Example) <u>**RY4S-U</u>** AC100-110</u>

Type No. Coil

Coil Voltage Code



RY Series Miniature Relays

Coil Ratings

	Potod Volta		Rate	ed Current (m	A) ±15% at 2	20°C	Coil Resistance (Ω)		Operation Characteristics (against rated values at 20°C)		d values at 20°C)
	Naleu Volla	ige (v)	50	Hz	60	Hz	±10% at 20°C		Max. Continuous	Min Dickup Voltago	
	DPDT	4PDT	DPDT	4PDT	DPDT	4PDT	DPDT	4PDT	Applied Voltage	wiin. Fickup voitage	Dropout voltage
	6	6	170	240	150	200	18.8	9.4			
	12	12	86	121	75	100	76.8	39.3			
	24	24	42	60.5	37	50	300	153			
	50	50	20.5	28.9	18	24	1,280	680			
<u>ل</u> م	100	100-110	10.5	10.3-11.8	9	9.1-10.0	5,220	3,360			
60	110	—	9.6	—	8.4	_	6,950	—	1100/	80%	30%
(50	115	110-120	8.9	9.4-10.8	7.8	8.0-9.2	7,210	4,290	110%	maximum	minimum
AC	120	_	8.6	_	7.5	_	8,100	_			
	200	200-220	5.6	5.1-5.9	4.9	4.3-5.0	21,442	13,690			
	220	_	4.7	—	4.1	_	25,892	—			
	230	220-240	4.7	4.7-5.4	4.1	4.0-4.6	26,710	18,820			
	240	_	4.9	—	4.3	_	26,710	—			
	DPDT	4PDT	DP	DT	4P	DT	DPDT	4PDT			
	6	6	1:	28	15	50	47	40			
	12	12	6	4	7	5	188	160			
В	24	24	3	2	36	5.9	750	650	110%	80% maximum	10% minimum
	48	48	1	8	18	8.5	2,660	2,600		maximum	
	100	100-110	1	0	8.2	-9.0	10,000	12,250			
	110	_	ł	3	-	_	13,800	—			

Contact Ratings

	Maximum Contact Capacity								
	Continuous	Allowable Co	ontact Power		Rated Load				
Contact	Current	Resistive Load	Inductive Load	Voltage	Resistive Load	Inductive Load			
Standard			1703/0.40	110V AC	ЗA	1.5A			
Contact	ЗA	90W DC 4	660 VA AC	660 VA AC 90W/ DC	660 VA AC 90W DC	176 VA AC	220V AC	ЗA	0.8A
DPDT				30V DC	ЗA	1.5A			
Standard	54	1200 VA AC	288 VA AC	240V AC	5A	1.2A			
4PDT	54	150W DC	60W DC	30V DC	5A	2A			
Bifurcated				110V AC	1A	0.5A			
Contact 1A	1A	176 VA AC	88 VA AC 15W DC	220V AC	0.8A	0.4A			
DPDT	DPDT 30W DC			30V DC	1A	0.5A			

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

• UL Ratings (Standard Contact)

Voltogo	Resi	stive	General use	
vollage	DPDT	4PDT	DPDT	4PDT
240V AC	ЗA	5A	0.8A	5A
120V AC	_	—	1.5A	—
100V DC	0.2A	0.2A	0.2A	0.2A
30V DC	ЗA	5A	ЗA	5A

• UL Ratings (Bifurcated Contact)

Voltage	Resistive	General use
240V AC	0.8A	0.4A
120V AC	1A	0.5A
30V DC	1A	0.5A

• CSA Ratings (Standard Contact)

J					
Voltogo	Resistive		Gener	al use	
vollage	DPDT	4PDT	DPDT	4PDT	
240V AC	3A	5A	0.8A	5A	
120V AC	3A	—	1.5A	_	
100V DC	_	—	0.2A	0.2A	
30V DC	3A	5A	1.5A	1.5A	

• CSA Ratings (Bifurcated Contact)

		· · · ·
Voltage	Resistive	General use
240V AC	0.8A	0.4A
120V AC	1A	0.5A
30V DC	1A	_

• TÜV Ratings (Standard Contact)

	Voltage	DPDT	4PDT		
	240V AC	ЗA	5A		
	30V DC	ЗA	5A		
1	$AC: \cos \alpha = 1.0$ $DC: L/P = 0$ msoc				

AC: cos ø = 1.0, DC: L/R = 0 msec

Specifications

Contact Tune	Standar	d Contact	Bifurcated Contact	
	DPDT	4PDT	DPDT	
Contact Material	Gold-plated silver		Silver-paradium alloy	
Contact Resistance *1	50 mΩ maximum		100 mΩ minimum	
Minimum Applicable Load	24V DC, 5 mA; 5V DC, 10 mA (reference	e value)	1V DC, 100 µA (reference value)	
Operate Time *2	20 ms maximum			
Release Time *2	20 ms maximum			
Power Consumption (approx.)	AC: 1.1 VA (50 Hz), 1 VA (60 Hz) DC: 0.8W	AC: 1.4 VA (50 Hz), 1.2 VA (60 Hz) DC: 0.9W	AC: 1.1 VA (50 Hz), 1 VA (60 Hz) DC: 0.8W	
Insulation Resistance	100 MΩ minimum (500V DC megger)			
Dielectric Strength	Between live and dead parts: 1500V AC, 1 minute *3 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	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	Between live and dead parts: 1500V AC, 1 minute *3 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	
Operating Frequency	Electrical:1800 operationsMechanical:18,000 operation	/h maximum ns/h maximum		
Vibration Resistance	Damage limits:10 to 55 Hz, ampOperating extremes:10 to 55 Hz, amp	ge limits: 10 to 55 Hz, amplitude 0.5 mm ting extremes: 10 to 55 Hz, amplitude 0.5 mm		
Shock Resistance	Damage limits:1000 m/s²Operating extremes:100 m/s² (DPDT)	DT), 200 m/s ² (4PDT)		
Electrical Life	200,000 operations (220V AC, 3A)	100,000 operations (220V AC, 5A) 200,000 operations (220V AC, 3A)	200,000 operations (110V AC, 1A)	
Mechanical Life	50,000,000 operations			
Operating Temperature *4	-25 to +55°C (no freezing)	-25 to +55°C (no freezing) *5	-25 to +55°C (no freezing)	
Operating Humidity	45 to 85% RH (no condensation)			
Weight (approx.)	23g	34g	23g	

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 Release time of relays with diode: 40 ms maximum

*3: Relays with indicator or diode: 1000V AC, 1 minute

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

The operating temperature range of relays with indicator or diode is -25 to +40°C.

*5: When the total current of 4 contacts is less than 15A, the operating temperature range is -25 to +70°C.



Idec

(Basic Type, With Check Button, and Top Bracket Mounting Type)



RY Series Miniature Relays





Dimensions

• Plug-in Terminal Type



(Photo: RY2S-U)



RY22S-U/RY22S-UL



• Applicable Socket and Hold-down Spring

Soc	Hold-down	
Mounting Style	Type No.	Spring
DIN Rail Mount Socket	SY2S-05A SY2S-05C	SY2S-02F1 SFA-101 SFA-202
Panel Mount Socket	SY2S-51	SY4S-51F1
PC Board Mount Socket	SY2S-61	SFA-302

71 🚯 IIII (E **FLY (1):**

RY4S-U/RY4S-UL/RY4S-UD/RY4S-ULD





Applicable Socket and Hold-down Spring					
Soc	Socket				
Mounting Style	Type No.	Spring			
DIN Rail Mount Socket	SY4S-05A SY4S-05C	SY4S-02F1 SFA-101 SFA-202			
	SY4S-05D	SFA-502			
Panel Mount Socket	SY4S-51	SY4S-51F1 (SY4S-02F1)			
PC Board Mount	SY4S-61	SFA-301 SFA-302			
Socket	SY4S-62	SY4S-51F1 (SY4S-02F1)			
Note: (SY4S-02F1)) is for the relay wi	th check button.			

• PC Board Terminal Type RY2V-U/RY2V-UL/RY2V-UD



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FN: (): IUV () ()





RY4V-U/RY4V-UL





RY4S-UT



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All dimensions in mm.

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RR2KP Series Latch Relays

Self-maintained Latch Relays DPDT — 10A contact capacity

The RR2KP series latch relays have a self-holding function using permanent magnets in the magnetic circuit. Applying a voltage on the set (or reset) coil operates the armature and retains the contacts in that position until the opposite coil is energized, hence the latch relays are ideal for memory and flip-flop circuit applications.

- Enhanced self-holding functions, and vibration and shock resistance.
- The self-holding mechanism is not subject to wear unlike mechanical latch relays.
- Recognized by UL and certified by CSA.

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Terminal Style	Туре	Type No.	Coil Voltage Code *	Ordering Information
Pin	Basic	RR2KP-U*	AC6, AC12, AC24, AC50, AC100, AC110, AC115, AC120, AC200,	When ordering, specify the Type No. and coil voltage code.
Terminal	With Check Button	RR2KP-UC*	AC220, AC230, AC240 DC6, DC12, DC24, DC48, DC110	(Example) <u>RR2KP-U</u> AC110 Type No. Coil Voltage Code

Coil Ratings

Rated Voltage (V)		Rated Current (mA) ±15% at 20°C		Coil Resistance (Ω)	Operation Characteristics (against rated values at 20°C)	
		50Hz	60Hz	±10% at 20°C	Maximum Continuous Applied Voltage	Set and Reset Voltage
	6	467	429	3.5		80% maximum
	12	200	184	23.8	- 110%	
	24	100	92	95		
	50	48	44	400		
(TZ	100	24	22	1,600		
/601	110	23	21	1,900		
(20	115	23	21	2,200		
AC	120	24	22	2,200		
	200	12	11	6,400		
	220	10.9	10	7,740		
	230	11.1	10.2	9,190		
	240	11.5	10.6	9,190		
	6	24	40	25		
	12	120		100	110%	80% maximum
8	24	60		400		
	48	30		1,600		
	110	13.8		7,960		

Contact Ratings

Maximum Contact Capacity						
Outitals in a	Orationary	Allowable Contact Power		Rated Load		
Voltage	Continuous	Resistive Load	Inductive Load	Voltage	Res. Load	Ind. Load
		1650 VA AC 300W DC	1100 VA AC 225W DC	110V AC	10A	7.5A
250V AC	104			220V AC	7.5A	5A
125V DC	IUA			30V DC	10A	7.5A
				100V DC	0.5A	0.3A

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

• UL Ratings

Voltage	Resistive	General Use	Motor Load
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	Motor Load
240V AC	10A	7A	1/3 HP
120V AC	10A	7.5A	1/4 HP
100V DC	_	0.5A	_
30V DC	10A	7.5A	_



Specifications

Contact Material	Silver		
Contact Resistance	30 mΩ maximum (initial value)		
Operate Time	25 ms maximum (at the rated voltage)		
Power Consumption (approx.)	AC: 2.4 VA (50 Hz), 2.2 VA (60 Hz) DC: 1.5W		
Insulation Resistance	100 MΩ minimum (500V DC megger)		
Dielectric Strength	Between live and dead parts: 1,500V AC, 1 minute Between contact and coil: 1,500V AC, 1 minute Between contacts of different poles: 1,500V AC, 1 minute Between contacts of the same pole: 1,000V AC, 1 minute		
Operating Frequency	Electrical:1800 operations/h maximumMechanical:18,000 operations/h maximum		
Temperature Rise	Coil: 85°C maximum, Contact: 65°C maximum		
Vibration Resistance	0 to 60 m/s ² (maximum frequency: 55 Hz), Frequency: 5 to 55 Hz, Amplitude: 0.5 mm		
Shock Resistance	100 m/s ² minimum		
Electrical Life	500,000 operations minimum (110V AC, 10A)		
Mechanical Life	5,000,000 operations minimum		
Operating Temperature	-5 to +40°C (no freezing)		
Operating Humidity	45 to 85% RH (no condensation)		
Weight (approx.)	170g		

Characteristics (Reference Data) • Electrical Life Curve



Internal Connection (Bottom View)



Dimensions

Total length from panel surface including relay socket SR3P-05A: 105 (108.5) max., SR3P-511: 87.5 (92) max.



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

All dimensions in mm.

Applicable Socket and Hold-down Spring

	Socket		Hold-down
N	Spring		
DIN Rail Mou	int Socket	SR3P-05A SR3P-05C SR3P-06A	SR3P-06F3
Panel Mount	w/Solder Terminals	SR3P-511	SP2D 511E2
Socket	w/Wire Wrap Terminals	SR3P-70	3135-31113

RH2L Series Latch Relays

Midget Power Latch Relays DPDT — 10A contact capacity

The RH2L series latch relays have a self-holding function by residual magnetism generated by a special magnetic material. The large 10A contact capacity equivalent to the RH and RR series is provided in a miniature relay package as small as the IDEC's RH3 type.

- With a mechanical operation indicator to show the set/reset status.
- Power saving operation by pulse inputs eliminates the need of continuous control voltage.
- Available with plug-in or PC board mount terminals.
- All basic types are recognized by UL and certified by CSA.

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Types

Terminal Style	Type No.	Coil Voltage Code *
Plug-in Terminal	RH2LB-U*	AC6, AC12, AC24, AC50, AC100, AC120
PC Board Terminal	RH2LV2-U*	DC6, DC12, DC24

Coil Ratings

			Set 0	Coil	Reset Coi		Coil	Operation C	haracteristics
Rated Voltage R (V)		Rated Current (mA)		Coil Posistanas (O)	Rated Cu	rrent (mA)	Cail Desistance (O)	(against rated values at 20°C)	
		±15% a	at 20°C	+10% at 20°C	±15% at 20°C		+10% at 20°C	Maximum Continuous	Set and Reset Voltage
		50Hz	60Hz	10/0 41 20 0	50Hz	60Hz	10/0 41 20 0	Applied Voltage	Set and Reset Voltage
	6	227	220	—	68.7	68	—		
Ř	12	103	100	—	34.2	34	_		
/90	24	51.2	50	—	17.1	17	—	- 110%	80%
(50	50	24.7	24	—	10.4	10.3	—		maximum
AC	100	12.3	12	—	4.6	4.6	—		
	120	10.3	10	—	4.2	4.2	—		
	6	33	33	18	18 150		40		
2	12	16	67	72	7	5	160	110%	80% maximum
	24	8	3	288	37	' .5	640		

Contact Ratings

	Maximum Contact Capacity					
0.11.1.1		Allowable Co	Rated Load			
Voltage	Continuous Current	Resistive Load	Inductive Load	Voltage	Res. Load	Ind. Load
		4050.1/4.40	44003/4 40	110V AC	10A	7.5A
250V AC	10A	1650 VA AC	1100VA AC	220V AC	7.5A	5A
1201 00		00011 D0	22011 20	30V DC	10A	7.5A

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

UL Ratings

Voltage	Resistive	General Use	Motor Load
240V AC	7.5A	6.5A	1/3 HP
120V AC	10A	7.5A	1/6 HP
30V DC	10A	_	—

CSA Ratings

Voltage	Resistive	General Use	Motor Load
240V AC	7.5A	5A	1/3 HP
120V AC	10A	7.5A	1/6 HP
30V DC	10A	7.5A	—

Specifications

Contact Material	Silver cadmium oxide		
Contact Resistance	50 m Ω maximum (initial value)		
Set Time	30 ms maximum (AC) 20 ms maximum (DC) (at the rated voltage)		
Reset Time	30 ms maximum (AC) 20 ms maximum (DC) (at the rated voltage)		
Power Consumption (approx.)	Set coil: 1.2 VA (AC), 2W (DC) Reset coil: 0.5 VA (AC), 0.9W (DC)		
Insulation Resistance	100 MΩ minimum (500V DC megger)		
Dielectric Strength	Between live and dead parts: 2,000V AC, 1 minute Between contact and coil: 2,000V AC, 1 minute Between contacts of different poles: 1,500V AC, 1 minute Between contacts of the same pole: 1,000V AC, 1 minute		
Operating Frequency	Electrical: 1800 operations/h maximum Mechanical: 18,000 operations/h maximum		
Vibration Resistance	0 to 60 m/s ² (maximum frequency: 55 Hz), Frequency: 5 to 55 Hz, Amplitude: 0.5 mm		
Shock Resistance	100 m/s ² minimum		
Electrical Life	200,000 operations minimum		
Mechanical Life	10,000,000 operations minimum		
Operating Temperature	-5 to +40°C (no freezing)		
Weight (approx.)	50g		





Type No.

Ordering Information

When ordering, specify the Type No. and coil voltage code.

(Example) RH2LB-U AC120

Coil Voltage Code



Operation Indicator



The red flag appears when the contacts are set.

Internal Connection (Bottom View)



Dimensions • RH2LB (Plug-in Terminal)





• RH2LV2 (PC Board Terminal)



All dimensions in mm.

Applicable Socket and Hold-down Spring

Socket	Hold-down Spring	
Mounting Style	riola-down opring	
DIN Rail Mount Socket	SH3B-05A SH3B-05C	SH3B-05F1 SFA-101 SFA-202
Panel Mount Socket	SH3B-51	SY4S-51F1
PC Board Mount Socket	SH3B-62	SFA-301 SFA-302

For details about sockets and hold-down springs, see page 40.

Instructions

- 1. Do not use the RH2L relays in environments where magnetic particles and dust are present in large quantities or external magnetic field is strong, or in the vicinity of largecurrent circuits.
- Do not use the RH2L relays in circuits whose power source contains heavy surges.
- 3. When two or more RH2L relays are mounted in a row, separate the relays by 6 mm or more.
- 4. Do not energize the set and reset coils at the same time.
- 5. Because of the polarity of the coil, connect the DC input voltage to correct terminals of the DC coil type.

RY2KS Series Latch Relays

Self-maintained Latch Relays DPDT — 3A contact capacity

The RY2KS series latch relays have a self-holding function using permanent magnets in the magnetic circuit. Applying a voltage on the set (or reset) coil operates the armature and retains the contacts in that position until the opposite coil is energized, hence the latch relays are ideal for memory and flip-flop circuit applications.

- Mountable in the same space as other miniature relays using the same sockets.
- Recognized by UL and certified by CSA.

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Types

Terminal Style	Туре	Туре No.	Coil Voltage Code *
Plug-in	Basic	RY2KS-U*	AC6, AC12, AC24, AC50, AC100, AC120
Terminal	With Check Button	RY2KS-UC*	DC6, DC12, DC24, DC48, DC100, DC110

 Ordering Information

 When ordering, specify the Type No. and coil voltage code.

 (Example)
 RY2KS-U

 Type No.
 Coil Voltage Code

Coil Ratings

Rated Voltage (V)		Rated Current (mA) ±15% at 20°C 50Hz		Coil Resistance (Ω)	Operation Characteristics (against rated values at 20°C)	
				±10% at 20°C	Maximum Continuous Applied Voltage	Set and Reset Voltage
	6	260	250	6.3		
Η	12	120	115	30.3		
/90	24	58	56	132	1100/	80% maximum
(50	50	27	26	606	110%	
A V V	100	13.5	13	2,630		
	120	11.2	10.8	3,840		
	6	200		30		
	12	100		120		
U	24	50		480	- 110%	80% maximum
	48	25		1,920		
	100	1	2	8,330		
	110	11		10,000		

Contact Ratings

Maximum Contact Capacity						
0.11.1.1		Allowable Co	Rated Load			
Voltage	Continuous Current	Resistive Load	Inductive Load	Voltage	Res. Load	Ind. Load
250V AC 125V DC	ЗA	660VA AC 90W DC	176VA AC 45W DC	110V AC	ЗA	1.5A
				220V AC	ЗA	0.8A
				30V DC	ЗA	1.5
				100V DC	0.2A	0.12A

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

• UL Ratings

Voltage	Resistive	General Use
240V AC	ЗA	0.8A
120V AC	ЗA	1.5A
30V DC	ЗA	_

• CSA Ratings

38

Voltage	Resistive	General Use
240V AC	ЗA	0.8A
120V AC	ЗA	1.5A
100V DC	—	0.2A
30V DC	3A	1.5A

Specifications

Contact Material	Gold-plated silver
Contact Resistance	50 mΩ maximum (initial value)
Set Time	25 ms maximum (at the rated voltage)
Reset Time	25 ms maximum (at the rated voltage)
Power Consumption (approx.)	AC: 1.6 VA (50 Hz), 1.5 VA (60 Hz) DC: 1.2W
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and dead parts: 1,500V AC, 1 minute Between contact and coil: 1,000V AC, 1 minute Between contacts of different poles: 1,000V AC, 1 minute Between contacts of the same pole: 700V AC, 1 minute
Operating Frequency	Electrical: 1800 operations/h maximum Mechanical: 18,000 operations/h maximum
Temperature Rise	Coil: 85°C maximum, Contact: 65°C maximum
Vibration Resistance	0 to 60 m/s ² (maximum frequency: 55 Hz), Frequency: 5 to 55 Hz, Amplitude: 0.5 mm
Shock Resistance	200 m/s ² minimum
Electrical Life	200,000 operations minimum
Mechanical Life	5,000,000 operations minimum
Operating Temperature	-5 to +40°C (no freezing)
Weight (approx.)	67g





Characteristics (Reference Data)

• Electrical Life Curve



Internal Connection (Bottom View)



Dimensions



All dimensions in mm.

• Applicable Socket and Hold-down Spring

Socket	Hold-down Spring	
Mounting Style	riola-down opinig	
DIN Rail Mount Socket	SY4S-05A SY4S-05C	SFA-202
Panel Mount Socket	SY4S-51	SY4S-51F3
	SY4S-61	(SY4S-02F3) SFA-302
PC Board Mount Socket	SY4S-62	SY4S-51F3 (SY4S-02F3)

Notes:

- 1. For the relays with check button, use the parenthesized holddown springs shown in the above table. When the spring is used, sockets cannot be mounted closely side by side.
- 2. Leaf springs come in pairs.
- 3. Use the hold-down springs in environments where the relays are subject to vibrations or shocks.

For details about sockets and hold-down springs, see page 40.



Socket Selection Guide

Number SR2-06A Signaporal (SR2-06C) Signaporal (SR2-07C) Signapora (SR2-07C) S	Mounting Style	Series	Type No.	Туре	No. of Poles	Color	Terminal Screw Applicable Wire	Approvals	Rated Insulation Voltage/ Rated Current	Applicable Relay, etc.	Page
Number SR2-06.0 Finge-sale 2 Gray Mail			SR2P-05A	Standard		Black	140.5	—			
Rate SR2-06A Standard Black <t< td=""><td></td><td></td><td>SR2P-05C</td><td>Finger-safe</td><td>2</td><td>Gray</td><td>1 M3.5 2 mm² max.</td><td>UL, CSA, TÜV</td><td>250V, 10A</td><td>RR2P, GT3 (8-pin), GT5P</td><td></td></t<>			SR2P-05C	Finger-safe	2	Gray	1 M3.5 2 mm ² max.	UL, CSA, TÜV	250V, 10A	RR2P, GT3 (8-pin), GT5P	
SR SRP-06A Standart SRP-06A Standart Standart Black SRP-06A Cmp LCSA, TUV STAP RRP, RR3PA, RR2AP, RR2AP, RR1BA, RR2AP, RR3PA, RR3PA, RR1BA, RR2AP, RR3PA, RR1BA, RR3PA, RR1BA, RR2AP, RR3PA, RR1BA, RR3PA, RR1BA, RR3PA, RR1BA, RR3PA, RR3P, RR3PA, RR3PA,			SR2P-06A	Standard		Black	2	_			43
SR3-Poic Singen-site 3 Gray Mass		SR	SR3P-05A	Standard		Black		—			
SR3-06A Standard			SR3P-05C	Finger-safe	3	Gray	M3.5	UL, CSA, TÜV	2501/ 104	GT3 (11-pin)	
SRB06A Standard SHB-05A Standard Similar Similar SHB-05C Standard Similar SHB-05C Standard Similar SHB-05C Black Similar SHB-05C M3-5 coll ferminal: Mo SHB-05C Coll seminal: TA SHB-05C RH1B.R.R2BA, RR3B 44 SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C RH2B.R12LB RH2B RH2B.R12LB RH2B SHB-05C Finger-sile 2 Black SHB-05C Similar SHB-05C Similar SHB-05C Similar SHB-05C RH2B RH2B RH2B RH2B SHB-05C Finger-sile 2 Black Cray Cray Cray RH2B RH2B RH2B RH2B SMS-05C Finger-sile 2 Black Cray Cray Cray RH2B RH2B <		SR3P-06A	Standard		Black	2 mm ² max.	_	230V, 10A			
Number Shiflabox Standard Shiflabox Standardx Standardx Standardx<			SR3B-05A	Standard	3	Black		—		RR1BA, RR2BA, RR3B	
Number ShtB-box Finger-sale 2 Gray 2 Cold terminal: 7A) Note Number ShtB-box Sinadard 3 Black			SH1B-05A	Standard	1	Black	M3.5 (coil terminal: M3)	_	250V, 10A	RH1B	44
Number SN28-065 Sindard SH28-065 Sindard Sindard SH38-065 Sindard SH38-065 Sindard SH38-065 Sindard SH38-065 Sindard SH38-065 Sindard SH38-065 Sindard SH38-067 Sindard SH38-07 Sindard SH38-07 Sindard SH38-07 Sindard SH38-07 <thsindard SH38-07</thsindard 			SH1B-05C	Finger-safe		Gray	$2 \text{ mm}^2 \text{ max.}$	UL, CSA, TÜV	(coil terminal: 7A)		
SH2 SH28-050 Finge-sale (SH38-05A Standard (SH38-05A			SH2B-05A	Standard		Black					
Sh Sh28-060 Simal Image: Shadard Black Topologic Shadard Black Topologic Shadard Black Topologic Shadard RH3B, RH2LB RH3B, RH		011	SH2B-05C	Finger-safe	2	Gray		UL, CSA, TÜV		RH2B	
NRAII SH38-05A Standard SH38-05C Standard SH38-		SH	SH2B-05D	Slim		Black	M2 5		_		
$ \begin{array}{ c $			SH3B-05A	Standard	3	Black	$2 \text{ mm}^2 \text{ max.}$	_	250V, 10A	RH3B_RH2LB	45
Mount SH4B-05A Standard SH4B-05C 4 rog Black Gray			SH3B-05C	Finger-safe		Gray		UL, CSA, TÜV			
SH2-50C Finger-safe SM2505A C Gray Standard SM2505B UL, CSA, TUV (2mm ² max.) CCA, TUV (UL, CSA, TUV) CMM ² (UL, CSA, TUV) RM2S, RU2S, GT5Y-2 46 SM2505C Simandard SM2505D Simandard SM2505D 2 Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard Simandard SY4505D 2 Simandard S	Mount		SH4B-05A	Standard	4	Black				RH4B	
SM25-05C Sindard SM25-05C Finger-safe 2 Gray 2mm ² max. UL, CSA, TÜV Z50V, 7A (UL, TÜV: 10A) RM2S, RU2S, GT5V-2 46 SM25-05D Silm			SH4B-05C	Finger-safe		Gray		UL, CSA, TÜV			
SM SM2S-05C Finger-safe SM2S-05D C Gray 2 mm ² max. UL, CSA, TÚV RM2S, RU2S, GT5Y-2 46 SM2S-05D Sim Biack M3, 125 mm ² (2 mm ² max.) - 250V, 10A RM2S, RU2S, GT5Y-2 46 SY2S-05C Finger-safe SY4S-05C Standard SY4S-05C 2 Biack Gray - - 250V, 10A RM2S, RU2S, GT5Y-2 47 SY4S-05C Finger-safe SY4S-05C Gray M3, 125 mm ² (2 mm ² max.) - 250V, 7A RY2S, RV2S, RU4S, RV42S, GT5Y-U 47 SV4S-05D Silm - Biack (2 mm ² max.) - 250V, 6A RU42S, GT5Y-U 47 SU2S-11L Spring-clamp 2 Gray Gray 210 15 mm ² State 12 bit mm ² - 250V, 6A RU42S, RV4S, GT5Y-U 48 SU2S-11 Solder 2 Gray Gray 2 - - 250V, 6A RU4S, RU42S, RV4S, GT5Y-U 48 SR3P-70 Wire-wrap 3 - UL, CSA 250V, 10A RR3P, RT3B, RR2E, AR3B 49			SM2S-05A	Standard		Black	M3	_	250V, 7A		
SM2S-05D Slim Black (2mm ² max,) — 250V, 10A Revenue (2mm ² max,) — 250V, 10A Revenue (2m ² max,) — 250V, 7A Revenue (2m ² max,) — 250V, 7A Revenue (2m ² max,) — 250V, 6A Rudes, RV2S, RU4S, RV4S, GT5Y-2 250V, 6A Rudes, RU42S, RV4S, GT5Y-2 250V, 6A Rudes, RU42S, RV4S, GT5Y-2 250V, 6A Rudes, RU4S, RU4S		SM	SM2S-05C	Finger-safe	2	Gray	2 mm ² max.	UL, CSA, TÜV	V 250V, 7A (UL, TÜV: 10A)	RM2S, RU2S, GT5Y-2	46
Panel SY2S-05A Standard Standard 2 Black Gray MA 2			SM2S-05D	Slim		Black	M3, 1.25 mm ² (2 mm ² max.)	-	250V, 10A		
Panel SY SY25:05 Finger-safe SY45:05A Z Gray Standard SY45:05D M3 Standard SY45:05C UL, CSA, TÜV 250V, 7A RT25, R125, R125, R145, R125, R145, R1425, GT5Y-U 47 V SY45:05D Silm Gray SY45:05D Silm Gray Black M3, 1,25 mm ² (2 mm ² max.) UL, CSA, TÜV R125, R125, R145, R1425, GT5Y-U R1425, R1425, R1425, GT5Y-U R1425, R145, GT5Y-U R1425, R1425, R1425, GT5Y-U R1425, R1425, R1425, GT5Y-U R1425, R1425, GT5Y-U R1425, R1425, GT5Y-U R1425, R1425, GT5Y-U R1425, GT5Y-U R1425, GT5Y-U R1425, GT5Y-U R145, R1425, GT5Y-U			SY2S-05A	Standard	2	Black		_		DV20 DV220	
SY Y4S-05A Standard SY4S-05C Finger-safe SY4S-05D Hads Sim Park (Gray C			SY2S-05C	Finger-safe	2	Gray	M3	UL, CSA, TÜV	2501/ 74	K120, K1220	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	SY	SY	SY4S-05A	Standard		Black	2 mm ² max.	_	2300, 7A		47
Image: branch			SY4S-05C	Finger-safe	4	4 Gray		UL, CSA, TÜV		RY4S, RY2KS, RU4S,	
$ \begin{array}{ c $			SY4S-05D	Slim		Black	M3, 1.25 mm ² (2 mm ² max.)	—	250V, 6A	RU42S, GT5Y-U	
30 SU4S-11L Spring-clamp 4 Stranded wire: 0.2 to 1.25 mm ² CU, CSA, CL 250V, 6A RU4S, RU42S, RY4S, GT5Y-4 RU4S, RU42S, RY4S, GT5Y-4 48 Number of the strand		911	SU2S-11L	Spring-clamp	2	Grav	Solid wire: 0.2 to 1.5 mm ²		250V, 10A	RU2S, RM2S, GT5Y-2	
Number Name SR2P-511 Solder 2 Number Name Number Nam<		30	SU4S-11L	Spring-clamp	4	Glay	Stranded wire: 0.2 to 1.25 mm ²	UL, USA, UE	250V, 6A	RU4S, RU42S, RY4S, GT5Y-4	48
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			SR2P-511	Solder	2		—	UL, CSA		PP2P CT3 (8 pip) CT5P	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			SR2P-70	Wire-wrap	2		—	_		RR2P, GT3 (8-pin), GT5P	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		SR	SR3P-511	Solder		Black	—	UL, CSA	250V, 10A	RR3P, RR3PA, RR2KP,	
Panel Mount SR3B-51 Solder UL, CSA RR1BA, RR2BA, RR3B 4 SH4 SH1B-51 Solder 2 UL, CSA 250V, 10A RH1B RH2B 49 SH3B-51 Solder 2 UL, CSA 250V, 10A RH2B RH3B, RH2LB RH3B, RH2LB RH3B, RH2LB RH3B, RH2LB RH4B UL, CSA 250V, 10A RH3B, RH2LB RH4B UL, CSA 250V, 10A RH3B, RH2LB RH3B, RH2LB RH3B, RH2LB RH4B UL, CSA 250V, 10A RH3B, RH2LB RH4B UL, CSA 250V, 10A RH3B, RH2LB UL, CSA 250V, 10A RH3B, RH2LS, RU3S, RU4S, RU3S, RU2S, GT5Y-U UL, CSA 250V, 10A RH4B RH3B, RH2LB RH3B, RH2LB UL, CSA 250V, 10A RH4B			SR3P-70	Wire-wrap	3			—			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			SR3B-51	Solder			_	UL, CSA		RR1BA, RR2BA, RR3B	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Panel		SH1B-51		1		_	UL, CSA	250V, 10A (coil terminal: 7A)	RH1B	49
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Mount	SH	SH2B-51	Solder	2	Black	_	UL, CSA		RH2B	1
$ \begin{array}{ c c c c c c c c } \hline SH4B-51 & 4 & & UL, CSA & RH4B \\ \hline SM & SM2S-51 & Solder & 2 \\ SY & SY2S-51 & Solder & 2 \\ \hline SY4S-51 & Solder & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY2S-51 & SY2S-51 & SY2S-51 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY2S-51 & SY2S-51 & SY2S-51 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY4S-52 & PC board & 2 \\ \hline SY4S-51 & PC board & 2 \\ \hline SY5S+51 & PC board & 2 \\ \hline SY55+51 & PC board & 2 \\ \hline $		_	SH3B-51		3			UL, CSA	250V, 10A	RH3B, RH2LB	1
$ \begin{array}{ c c c c c c c c } \hline SM & SM2S-51 & Solder & 2 \\ \hline SY & SY2S-51 \\ \hline SY & SY4S-51 \end{array} & Solder & 2 \\ \hline SY4S-51 & Solder & 2 \\ \hline SY4S-51 & Solder & 4 \end{array} \\ \hline & & & & & & & \\ \hline & & & & & \\ \hline & & & &$					4	1		UL, CSA	1	RH4B	
$ \begin{array}{ c c c c c c c } \hline \\ SY \\ \hline SY \\ SY \\ \hline SY \\ SY \\ SY \\ S$		SM	SM2S-51	Solder	2		_	UL, CSA	250V, 10A	RM2S, RU2S, GT5Y-2	
SY SY4S-51 Solder 4 DBACK — UL, CSA 250V, 7A (Note) RY4S, RY2KS, RU4S, RU42S, GT5Y-U PC Board Mount SH1B-62 SH4B-62 A 1 A — UL, CSA 250V, 7A (Note) RH1B RH1B A A A B B B B B A A B </td <td></td> <td></td> <td>SY2S-51</td> <td></td> <td>2</td> <td>Diack</td> <td>_</td> <td>UL, CSA</td> <td>250V, 7A</td> <td>RY2S, RY22S</td> <td>50</td>			SY2S-51		2	Diack	_	UL, CSA	250V, 7A	RY2S, RY22S	50
Nome SH1B-62 SH2B-62 SH3B-62 PC board SH3B-62 1 2 SH3B-62 1 2 3 1 2 3 - UL, CSA 250V, 10A (coil terminal: 7A) RH1B Amount RH2B Mount SH4B-62 PC board 2 4 Black - UL, CSA 250V, 10A RH2B RH3B, RH2LB F1 SM SM2S-61 SM2S-62 PC board 2 2 Black - UL, CSA 250V, 10A RH2B RH3B, RH2LB F1 SM SM2S-61 SM2S-62 PC board 2 2 Black - UL, CSA 250V, 10A RM2S, RU2S, GT5Y-2 RM2S, RU2S, GT5Y-2 SY SY2S-61 SY4S-62 PC board 2 4 Black - UL, CSA 250V, 7A RY2S, RY2S 52 SY4S-62 Y4S-61 PC board 2 4 Black - UL, CSA 250V, 7A RY4S, RY2KS, RU4S, RU42S, GT5Y-U 52		SY	SY4S-51	Solder	4	DIACK		UL, CSA	250V, 7A (Note)	RY4S, RY2KS, RU4S, RU42S, GT5Y-U	
SH SH2B-62 SH3B-62 PC board 2 3 Black — UL, CSA RH2B RH3B, RH2LB RH2B RH3B, RH2LB RH4B Mount SH4B-62 4 — UL, CSA 250V, 10A RH3B, RH2LB RH4B Mount SM2S-61 SM2S-62 PC board 2 2 Black — UL, CSA 250V, 10A RH2B RH3B, RH2LB RH4B SM SM2S-61 SM2S-62 PC board 2 2 Black — UL, CSA 250V, 10A RM2S, RU2S, GT5Y-2 RM2S, RU2S, GT5Y-2 RM2S, RU2S, GT5Y-2 RM2S, RU2S, RU2			SH1B-62		1		_	UL, CSA	250V, 10A (coil terminal: 7A)	RH1B	
Bit SH3B-62 SH3B-62 SH4B-62		SH	SH2B-62	PC board	2	Black		UL. CSA	RH2B	RH2B	-
PC Board Mount SH4B-62 4 — UL, CSA RH4B SM SM2S-61 SM2S-62 PC board 2 Black — UL, CSA RM2S, RU2S, GT5Y-2 SM SM2S-62 PC board 2 Black — UL, CSA 250V, 10A RM2S, RU2S, GT5Y-2 SY SY2S-61 SY2S-61 2 — UL, CSA 250V, 7A RY2S, RY2S SY SY4S-61 PC board 4 Black — UL, CSA 250V, 7A RY4S, RY2KS, RU4S, RV4S, GT5Y-U			SH3B-62	PC board 2			_	UL, CSA	250V, 10A	RH3B, RH2LB	51
Mount SM2S-61 SM2S-62 PC board 2 Black — UL, CSA 250V, 10A RM2S, RU2S, GT5Y-2 SY SY2S-61 SY4S-62 PC board 2 Black — UL, CSA 250V, 10A RM2S, RU2S, GT5Y-2 RM2S, RU2S SY SY4S-61 SY4S-62 PC board 2 — UL, CSA 250V, 7A RY2S, RY2S 52	DC Boord		SH4B-62	1	4	1		UL, CSA	1 '	RH4B	
SM PC board 2 Black - UL, CSA 250V, 10A RM2S, RU2S SY SY2S-61 PC board 2 Black - UL, CSA 250V, 10A RM2S, RU2S SY SY4S-61 PC board 4 Black - UL, CSA 250V, 7A RY2S, RY2S SY4S-62 - UL, CSA 250V, 7A RY4S, RY2KS, RU4S, RV4S, RV4S, RV4S, RV4S, RV4S, RV4S, RV4S, GT5Y-U - UL, CSA 250V, 7A RV42S, GT5Y-U	Mount		SM2S-61			-		UL, CSA		RM2S, RU2S. GT5Y-2	1
SY2S-61 PC board 2 — UL, CSA 250V, 7A RY2S, RY2S 52 SY4S-61 PC board 4 Black — UL, CSA 250V, 7A (Note) RY4S, RY2KS, RU4S, RU4S, RU4S, RU4S, GT5Y-U 52		SM	SM2S-62	PC board	2	Black	_	UL, CSA	250V, 10A	RM2S, RU2S	
SY SY4S-61 SY4S-62 PC board 4 Black — UL, CSA 250V, 7A (Note) RY4S, RY2KS, RU4S, RU42S, GT5Y-U 52		<u> </u>	SY2S-61		2			UL, CSA	250V, 7A	RY2S, RY22S	
SY4S-62 4 — UL, CSA 250V, 7A RU42S, GT5Y-U		SY	SY4S-61	PC board		Black		UL, CSA	250V, 7A (Note)	RY4S RY2KS RU4S	52
			SY4S-62	-	4		_	UL, CSA	250V, 7A	RU42S, GT5Y-U	

Note: When using only 2 poles of the 4-pole sockets SY4S-51 and SY4S-61, the UL rated current is 10A.

• Terminal Screw Tightening Torque for DIN Rail Mount Sockets

Socket Series	Terminal Screw Tightening Torque	Socket Series	Terminal Screw Tightening Torque
SR	1.0 to 1.3 N·m	SM	0.6 to 1.0 N·m
SH	1.0 to 1.3 N·m	SY	0.6 to 1.0 N·m



Sockets and Applicable Hold-down Springs • DIN Rail Mount Sockets

Socket	Applicable Relays and	Hold-dov	vn Spring
Type No.	Timers	Wire Spring	Leaf Spring
SR2P-05A RR2P		SR2B-02F1	_
SR2P-05C GT5P		—	SFA-203
SP2P 06A	RR2P	SR2B-02F1	SFA-202
SINZF-00A	GT3 (8-pin), GT5P	—	SFA-202
	RR3P, RR3PA	SR3B-02F1	—
SR3P-05A	RR2KP	SR3P-06F3	—
	GT3 (11-pin)	—	SFA-203
	RR3P, RR3PA	SR3B-02F1	SFA-202
SR3P-06A	RR2KP	SR3P-06F3	
	GT3 (11-pin)	_	SFA-202
SR3B-05	RR1BA, RR2BA, RR3B	SR3B-02F1	SFA-202
SH1B-05A SH1B-05C	RH1B	SY2S-02F1	SFA-101 SFA-202
SH2B-05A	RH2B	SY4S-02F1	SFA-101 SFA-202
SH2B-05C	RH2B-R	_	SFA-202
	RH2B	_	SFA-502
SH2B-05D	RH2B-R	_	SFA-511
SH3B-05A SH3B-05C	RH3B, RH2LB	SH3B-05F1	SFA-101 SFA-202
SH4B-05A SH4B-05C	RH4B	SH4B-02F1	SFA-101 SFA-202
SM2S-05A	RM2S, RU2S	SY4S-02F1	SFA-101 SFA-202
311/23-030	GT5Y-2	—	SFA-202
OMOG OFF	RM2S, RU2S	—	SFA-502
5IVI25-05D	GT5Y-2	—	SFA-511
SY2S-05A SY2S-05C	RY2S, RY22S	SY2S-02F1	SFA-101 SFA-202
SY4S-05A	RY4S, RU4S, RU42S	SY4S-02F1	SFA-101 SFA-202
3143-050	RY2KS, GT5Y-4	—	SFA-202
SVAS OFD	RY4S, RU4S, RU42S	—	SFA-502
3143-03D	RY2KS, GT5Y-4	_	SFA-511
SU2S-11L	RU2S, RM2S	_	SFA-101 SFA-202
	GT5Y-2		SFA-202
SU4S-11L	RU4S, RU42S, RY4S	_	SFA-101 SFA-202
	GT5Y-4		SFA-202

Panel Mount Sockets and PC Board Mount Sockets					
Socket	Applicable Relays and	Hold-dov	vn Spring		
Type No.	Timers	Wire Spring	Leaf Spring		
0000 544	RR2P	SR3P-01F1	—		
SR2P-511 SR2P-70	GT3 (8-pin)	—	SFA-402		
	GT5P	—	SFA-302		
0000 544	RR3P, RR3PA	SR3P-01F1	—		
SR3P-511 SR3P-70	RR2KP	SR3P-511F3	—		
	GT3 (11-pin)	_	SFA-402		
SR3B-51	RR1BA, RR2BA, RR3B	SR3B-02F1	—		
SH1B-51 SH1B-62	RH1B	SY4S-51F1	SFA-301 SFA-302		
SH2B-51	RH2B	SY4S-51F1 (SY4S-02F1)	SFA-301 SFA-302		
	RH2B-R	_	SFA-302		
SH2B-62 RH2B		SY4S-51F1 (SY4S-02F1)	_		
SH3B-51 SH3B-62	RH3B, RH2LB	SY4S-51F1 (SH3B-05F1)	SFA-301 SFA-302		
SH4B-51 SH4B-62	RH4B	SY4S-51F1 × 2 (SH4B-02F1)	SFA-301 SFA-302		
SM2S-51	RM2S, RU2S	SY4S-51F1 (SY4S-02F1)	SFA-301 SFA-302		
51125-01	GT5Y-2	—	SFA-302		
SM2S-62	RM2S, RU2S	SY4S-51F1 (SY4S-02F1)	_		
SY2S-51 SY2S-61	RY2S, RY22S	SY4S-51F1	SFA-301 SFA-302		
	RY4S, RU4S, RU42S	SY4S-51F1 (SY4S-02F1)	SFA-301 SFA-302		
SY4S-51 SY4S-61	RY2KS	SY4S-51F3 (SY4S-02F3)	SFA-302		
	GT5Y-4	—	SFA-302		
SV45 62	RY4S, RU4S, RU42S	SY4S-51F1 (SY4S-02F1)	_		
5145-62	RY2KS	SY4S-51F3 (SY4S-02F3)	_		

Note 1: When mounting relays with check button on panel mount or PC board mount sockets, use hold-down springs shown in (). Hold-down springs for relays with check button are not available for SR2P-511, SR2P-70, SR3P-511, and SR3P-70.

Note 2: For close mounting of panel mount or PC board mount sockets, use wire springs or SFA-302 leaf springs.

Note 3: SM2S-62 and SY4S-62 sockets cannot be used on GT5Y-2 and GY5Y-4 timers.

• Hold-down Springs

		<u> </u>	
Туре	Type No.	Ordering Type No.	Package Quantity
	SR2B-02F1	SR2B-02F1PN10	
	SR3B-02F1	SR3B-02F1PN10	
	SR3P-01F1	SR3P-01F1PN10	
	SR3P-06F3	SR3P-06F3PN10	
	SR3P-511F3	SR3P-511F3PN10	
Wire	SH3B-05F1	SH3B-05F1PN10	10
Spring	SH4B-02F1	SH4B-02F1PN10	10
	SY2S-02F1	SY2S-02F1PN10	1
	SY4S-02F1	SY4S-02F1PN10	
	SY4S-02F3	SY4S-02F3PN10	
	SY4S-51F1	SY4S-51F1PN10	
	SY4S-51F3	SY4S-51F3PN10	
	SFA-101	SFA-101PN20	
	SFA-202	SFA-202PN20	
	SFA-203	SFA-203PN20	
Leaf Spring	SFA-301	SFA-301PN20	20
	SFA-302	SFA-302PN20	(10 pairs)
	SFA-402	SFA-402PN20	
	SFA-502	SFA-502PN20	
	SFA-511	SFA-511PN20	









SR3B-02F1

SY4S-51F3

SFA-302

SY4S-02F1



30 SFA-101

69

SR3P-01F1





SFA-202

SY2S-02F1

SR3P-06F3







SY4S-02F3

09 SR3P-511F3

SFA-511

(04/10/25)

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Accessories for Sockets

Name	Appearance	Specifications	Type No.	Ordering Type No.	Package Quantity	Remarks
		Aluminum Weight: Approx. 200g	BAA1000	BAA1000PN10	10	Length: 1m
		Steel Weight: Approx. 320g	BAP1000	BAP1000PN10	10	Width: 35 mm
Mounting Clin	a and a second	Zinc-plated steel	BNL5	BNL5PN10	10	Used on a DIN rail to fasten
		Weight: Approx. 15g	BNL6	BNL6PN10	10	relay sockets
DIN Rail Spacer		Plastic (black)	SA-406B	SA-406B	1	Thickness: 5 mm Used for adjusting spacing between sockets mounted on a DIN rail
End Spacer	J.	Plastic (black)	SA-203B	SA-203B	1	Used for mounting DIN rail
Intermediate Spacer			SA-204B	SA-204B	1	panel surface

• Accessories for SU Sockets

Name	Appearance	Specifications	Type No.	Ordering Type No.	Package Quantity	R	emarks
Screwdriver		Weight: Approx. 20g	BC1S-SD0	BC1S-SD0	1	Used for wi terminals c	ring spring-clamp on the SU sockets
Jumper		Brass jumper with ABS sheath Rated current: 3A Weight: Approx. 3g	SU9Z-J5	SU9Z-J5PN10	10	Used for in relay coil te maximum o can be cut lengths	terconnecting erminals on a of five SU sockets; to required
Diada Madula	100 H		SU9Z-D11	SU9Z-D11PN10	10	A1: – A2: +	For absorbing
Diode Module		6 10 220V DC	SU9Z-D12	SU9Z-D12PN10	10	A1: + A2: –	in DC coils
RC Module	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6 to 240V AC	SU9Z-R21	SU9Z-R21PN10	10	For absorb ages in AC	ing surge volt-
		6 to 12V AC/DC	SU9Z-L31	SU9Z-L31PN10	10		
	17) H	24 to 48V AC/DC	SU9Z-L32	SU9Z-L32PN10	10	Non-polarized LED indica-	
	μê.	100 to 120V AC/DC	SU9Z-L33	SU9Z-L33PN10	10	coil is ener	gized
		200 to 240V AC/DC	SU9Z-L34	SU9Z-L34PN10	10		



DIN Rail Mount Sockets

SR Series







(04/10/25)







46







Panel Mount Sockets

SR Series











PC Board Mount Sockets

SH Series







52

(04/10/25)

Accessories

DIN Rails



The BAA is a 35-mm-wide DIN rail made of durable extruded aluminum.

The BAP is a 35-mm-wide DIN rail made of rust proof sheet steel.

Mounting Clip



Use of the BNL5 or BNL6 mounting clip is recommended at the both ends of the socket row mounted on the DIN rail to prevent the sockets from moving sideways.

Type No.	Ordering Type No.	Package Quantity
BNL5	BNL5PN10	10
BNL6	BNL6PN10	10

DIN Rail Spacer



Spacers of 5-mm thick are designed to provide spacing between DIN rail mount sockets when mounted on 35-mm wide DIN rails. The spacers snap on and off the rail like sockets.

Type No.	Package Quantity	Color
SA-406B	1	Black

Material	Type No.	Ordering Type No.	Package Quantity
Aluminum	BAA1000	BAA1000PN10	10
Steel	BAP1000	BAP1000PN10	10



Application Example of Mounting Clip and DIN Rail Spacer

Use DIN rail spacers for adding space between adjoining sockets to prevent miswiring and identify wiring groups.







Surface Mounting of DIN Rail Mount Socket

• End Spacer

Type No.	Package Quantity	Color
SA-203B	1	Black

• Intermediate Spacer



The end spacer and intermediate spacer are used for mounting DIN rail mount sockets on panel surfaces. In collective mounting using these spacers, screws can be eliminated at every other socket. Mounting centers are the same in single mounting and collective mounting.

Note: DIN rail mount sockets can also mount directly on panel surfaces without using these spacers, then the mounting centers are different from when using spacers.





Collective Mounting of Panel Mount Sockets

The SY, SM, and SH series panel mount sockets are designed to mount in panel cut-outs collectively. These sockets can be mounted in the same panel cut-out due to the standardized size.

• Mounting into Panel Cut-out

To mount, insert the sockets with mounting springs facing top and bottom edges of the panel cut-out. Push the mounting spring using a screwdriver until the mounting spring clicks into the panel.



A (Total width of the sockets mounted) $W = A - 5.6^{+0}_{-0.5}$								
	255 255 255		N N N N N N N N N N N N N N N N N N N		HI H		Ē	
SY2S-51	1	SY4S-51	Î	SM2S-51	1 :	SH1B-5	1	SY4S-51

Panel cut-out width W = 18 + 27 + 27 + 18 + 27 + 18 + 18 + 27 + 27 - 5.6 = 201.4 $^{+0}_{-0.5}$

Socket Width

Socket	Width
SH1B-51	18 mm
SH2B-51	27 mm
SH3B-51	36 mm
SH4B-51	45 mm
SM2S-51	27 mm
SY2S-51	18 mm
SY4S-51	27 mm



For photos and dimensions, see page 48.

SU Series Sockets: General Instructions

Parts Description



1256: Spring slots for SFA-101 leaf springs 2345: Spring slots for SFA-202 leaf springs

Applicable Wires

Wire	Size		
Stranded Wire	0.2 to 1.25 mm ² or AWG24 to16		
Solid Wire	0.2 to 1.5 mm ² or AWG24 to16		
Wire Insulation Diameter	ø3.15 mm maximum		

• Strip the wire insulation 9 to 10 mm from the end.



 In applications using ferrules for stranded wires, choose the ferrule listed in the table below. Make sure that an insulation sheath is applied when using the ferrules. When using stranded wires without ferrules, make sure that the core wires have not been loosened.

Applicable Ferrules

Applicable Wire (stranded)		Type No.	Manufacturer	
mm ²	AWG			
0.25	24	AI 0.25-12BU	Phoenix Contact	
—	22	AI 0.34-8TQ		
0.5 20	20	AI 0.5-8WH	FIDENIX CONIACI	
	20	AI 0.5-10WH		

Applicable Screwdriver

• For wiring, use the optional screwdriver (BC1S-SD0) or the following applicable screwdriver.



All dimensions in mm.

Wiring Instructions



1. Insert the optional screwdriver (BC1S-SD0) or an applicable screwdriver into the square-shaped port as shown, until the screw-driver tip

touches the bottom of the spring.



2. Push in the screwdriver until it touches the bottom of the port. The wire port is now open, and the screwdriver is held in place. The

screwdriver will not come off even if you release your hand.



3. While the screwdriver is retained in the port, insert the wire or ferrule into the round-shaped wire port. Each wire port can accommodate one wire or ferrule. When connecting two wires to one ter-

minal, use the adjoining port of the same terminal.



4. Pull out the screwdriver. The connection is now complete.



• When using thin wires with insulation diameter of Ø1.6 mm or less, do not insert the wire too deeply where the insulation inserts into the spring clamp opening. Make sure that the wire insulation is stripped 9 to 10 mm and the wire is inserted to the bottom.



• Do not twist the screwdriver inserted into the screwdriver port in the socket, otherwise the socket may break.







Marking Plate

Write markings on the SU sockets using an oil-based marker, or glue printed mylar on the marking surface. The size of the printed mylar can be 8×9 mm maximum.



• Installing the Marking Plate

Because of its removable structure, the marking plate may have fallen from the socket or become loose in delivery. Make sure that the marking plate is securely installed before starting operation. The marking plate protects the conductive portion of the socket, located under the marking plate, by preventing metal fragments or pieces of wire from dropping inside. Should any such fragments enter the socket, they may cause fire hazard, damage, or malfunction.



SU9Z-J5 Jumper for SU2S-11L and SU4S-11L

The SU9Z-J5 is used to install five sockets. When installing less than five sockets, cut the jumper according to the instructions described below.

The SU9Z-J5 is for coil terminals only.

SU9Z-J5 Jumper Specifications

Rated Current		3A	
Material	Conductor	Nickel-plated brass	
	Sheath	ABS resin	

• Installing the SU9Z-J5 Jumper

Loosen the marking plate on the socket.

Making sure that the SU9Z-J5 jumper is correctly aligned, insert the blades into the ports in the groove of the SU socket.



• Installing the SU9Z-J5 Jumper on Two, Three, or Four SU Sockets

As shown below, slide the jumper in the sheath so that the jumper aligns with the center of the sheath.



With the sheath properly installed on the jumper, cut the sheath and jumper at the points shown below, using cutting pliers. Referring to the drawing on the below right, make sure that the sheath and jumper are cut within the cutting area. Dispose of unused portions according to local waste disposal requirements.



For Connecting	Jumper Quantity	Cutting Area	Discard
2 sockets	2	A, C	Y
2 sockets	1		×
3 sockets	1	А, В	~
4 sockets	1	D	Z

After cutting the jumper and sheath, slide the jumper as shown below, so that the ends of the jumper are not exposed.



• Jumper Wiring to Six or More SU Sockets

To jumper wire six or more SU sockets, connect five sockets using whole jumpers and the remaining sockets using a cut jumper. Then connect the two terminals on adjoining sockets using an applicable wire (see table below).



Jumper Wiring of Terminal 14 between Adjoining Sockets

Wire	Size
Stranded Wire	0.2 to 1.25 mm ²
Solid Wire	0.2 to 1.5 mm ²
AWG	24 to 16

Note 1: Use a wire with cable insulation diameter of ø3.15 mm maximum.

Note 2: Strip the cable insulation 9 to 10 mm from the end.

Safety Precautions

Turn off the power to the SU9Z-J5 jumper before starting installation, removal, wiring, maintenance, or inspection of the jumper, failure to turn power off may cause an electrical shock or fire hazard.

To avoid a short circuit due to incorrect wiring, confirm which terminals are connected to the jumper before starting wiring.



Optional Function Modules

Module	Type No.	Ordering Type No.	Rated Voltage	Polarity	Function	Package Quantity
Diode Module	SU9Z-D11	SU9Z-D11PN10		A1: Negative A2: Positive	For absorbing surge voltages in DC coils. Since the diode module has polarity, connect DC voltage to terminals A1 and A2 correctly, otherwise the relay does not operate.	10
	SU9Z-D12	SU9Z-D12PN10	- 6 to 2200 DC	A1: Positive A2: Negative		10
RC Module	SU9Z-R21	SU9Z-R21PN10	6 to 240V AC	_	For absorbing surge voltages in AC coils.	10
LED Module	SU9Z-L31	SU9Z-L31PN10	6 to 12V AC/DC	Non-polarized Non-polarized LED indicator; goes		10
	SU9Z-L32	SU9Z-L32PN10	24 to 48V AC/DC		larized Non-polarized LED indicator; goes on when the relay coil is energized.	10
	SU9Z-L33	SU9Z-L33PN10	100 to 120V AC/DC	LED		10
	SU9Z-L34	SU9Z-L34PN10	200 to 240V AC/DC			10

The diode module and RC module are for absorbing the counter emf generated in the relay coil. If the relay coil is subjected to excessive external surge voltages, provide a separate surge protection device to prevent damage to the internal surge absorbing element. Do not disassemble the function module, otherwise the module may be damaged.

• Installing the Optional Function Module

Turn power off to the SU socket before starting installation, removal, wiring, maintenance, and inspection. Otherwise the devices may be damaged or electrical shocks may occur.



② When using the SU9Z-J5 jumper, insert the jumper before installing the module.

③ With the marking surface outside, insert the module to the bottom.



Insertion Complete





Specifications and other descriptions in this leaflet are subject to change without notice.



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