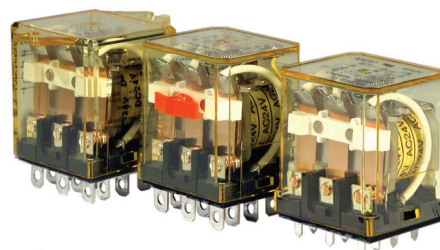


## RH Series Compact Power Relays

### Key features

- SPDT through 4PDT, 10A contacts
- Compact power type relays
- Miniature power relays with a large capacity
- 10A contact capacity
- Compact size saves space



### Part Number Selection

Contact	Model	Part Number		Coil Voltage Code (Standard Stock in bold)	
		Blade Terminal	PCB Terminal		
 SPDT	Standard	RH1B-U □	RH1V2-U □	AC6V, AC12V, <b>AC24V</b> , AC110V, <b>AC120V</b> , AC220V, <b>AC240V</b> DC6V, <b>DC12V, DC24V</b> , DC48V, DC110V	
	With Indicator	RH1B-UL □	—		
	With Check Button	RH1B-UC □	—		
	With Indicator and Check Button	RH1B-ULC □	—		
	Top Bracket Mounting	RH1B-UT □	—		
	With Diode (DC coil only)	RH1B-UD □	RH1V2-UD □		DC6V, <b>DC12V, DC24V</b> , DC48V, DC110V
	With Indicator and Diode (DC coil only)	RH1B-ULD □	—		<b>DC12V, DC24V</b> , DC48V, DC110V
 DPDT	Standard	RH2B-U □	RH2V2-U □	AC6V, AC12V, <b>AC24V, AC110-120V</b> , <b>AC220-240V</b> DC6V, <b>DC12V, DC24V</b> , DC48V, DC100-110V	
	With Indicator	RH2B-UL □	RH2V2-UL □		
	With Check Button	RH2B-UC □	—		
	With Indicator and Check Button	RH2B-ULC □	—		
	Top Bracket Mounting	RH2B-UT □	—		
	With Diode (DC coil only)	RH2B-UD □	RH2V2-UD □		DC6V, <b>DC12V, DC24V</b> , DC48V, DC100-110V
	With Indicator and Diode (DC coil only)	RH2B-ULD □	RH2V2-ULD □		
 3PDT	Standard	RH3B-U □	RH3V2-U □	AC6V, AC12V, <b>AC24V</b> , AC110V, <b>AC120V</b> , AC220V, <b>AC240V</b> DC6V, <b>DC12V, DC24V</b> , DC48V, DC110V	
	With Indicator	RH3B-UL □	RH3V2-UL □		
	With Check Button	RH3B-UC □	—		
	With Indicator and Check Button	RH3B-ULC □	—		
	Top Bracket Mounting	RH3B-UT □	—		
	With Diode (DC coil only)	RH3B-UD □	—		DC6V, DC12V, DC24V, DC48V, DC110V
	With Indicator and Diode (DC coil only)	RH3B-ULD □	—		
 4PDT	Standard	RH4B-U □	RH4V2-U □	AC6V, AC12V, <b>AC24V</b> , AC110V, <b>AC120V</b> , AC220V, <b>AC240V</b> DC6V, <b>DC12V, DC24V</b> , DC48V, DC110V	
	With Indicator	RH4B-UL □	RH4V2-UL □		
	With Check Button	RH4B-UC □	—		
	With Indicator and Check Button	RH4B-ULC □	—		
	Top Bracket Mounting	RH4B-UT □	—		
	With Diode (DC coil only)	RH4B-UD □	RH4V2-UD □		DC6V, DC12V, DC24V, DC48V, DC110V
	With Indicator and Diode (DC coil only)	RH4B-ULD □	—		



PCB terminal relays are designed to mount directly to a circuit board without any socket.

#### Ordering Information

When ordering, specify the Part No. and coil voltage code:

(example) **RH3B-U** **AC120V**  
 Part No.                      Coil Voltage Code

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Switches & Pilot Lights

**Sockets** (for Blade Terminal Models)

Relays	Standard DIN Rail Mount <sup>1</sup>	Finger-safe DIN Rail Mount <sup>1</sup>	Through Panel Mount	PCB Mount
RH1B	SH1B-05	SH1B-05C	SH1B-51	SH1B-62
RH2B	SH2B-05	SH2B-05C	SH2B-51	SH2B-62
RH3B	SH3B-05	SH3B-05C	SH3B-51	SH3B-62
RH4B	SH4B-05	SH4B-05C	SH4B-51	SH4B-62



1. DIN Rail mount socket comes with two horseshoe clips. Do not use unless you plan to insert pullover wire spring. Replacement horseshoe clip part number is Y778-011.

Signaling Lights

**Hold Down Springs & Clips**

Appearance	Item	Relay	For DIN Mount Socket	For Through Panel & PCB Mount Socket
	Pullover Wire Spring	RH1B	SY2S-02F1 <sup>2</sup>	SY4S-51F1
		RH2B	SY4S-02F1 <sup>2</sup>	
		RH3B	SH3B-05F1 <sup>2</sup>	
		RH4B	SH4B-02F1 <sup>2</sup>	
	Leaf Spring (side latch)	RH1B, RH2B, RH3B, RH4B	SFA-202 <sup>3</sup>	SFA-302 <sup>3</sup>
	Leaf Spring (top latch)	RH1B, RH2B, RH3B, RH4B	SFA-101 <sup>3</sup>	SFA-301 <sup>3</sup>



2. Must use horseshoe clip when mounting in DIN mount socket. Replacement horseshoe clip part number is Y778-011.  
3. Two required per relay.

Relays & Sockets

**AC Coil Ratings**

Voltage (V)	Rated Current (mA) ±15% at 20°C								Coil Resistance (Ω) ±10% at 20°C				Operation Characteristics (against rated values at 20°C)		
	AC 50Hz				AC 60Hz				SPDT	DPDT	3PDT	4PDT	Max. Continuous Applied Voltage	Pickup Voltage	Dropout Voltage
	SPDT	DPDT	3PDT	4PDT	SPDT	DPDT	3PDT	4PDT							
6	170	240	330	387	150	200	280	330	18.8	9.4	6.4	5.4			
12	86	121	165	196	75	100	140	165	76.8	39.3	25.3	21.2			
<b>24</b>	42	60.5	81	98	37	50	70	83	300	153	103	84.5			
110	9.6	—	18.1	21.6	8.4	—	15.5	18.2	6,950	—	2,200	1,800			
<b>110-120</b>	—	9.4-10.8	—	—	—	8.0-9.2	—	—	—	—	—	—			
<b>120</b>	8.6	—	16.4	19.5	7.5	—	14.2	16.5	8,100	—	10,800	7,360			
220	4.7	—	8.8	10.7	4.1	—	7.7	9.1	25,892	—	10,800	7,360			
<b>220-240</b>	—	4.7-5.4	—	—	—	4.0-4.6	—	—	—	18,820	—	—			
<b>240</b>	4.9	—	8.2	9.8	4.3	—	7.1	8.3	26,710	—	12,100	9,120			

Timers

Contactors

**DC Coil Ratings**

Voltage (V)	Rated Current (mA) ±15% at 20°C				Coil Resistance (Ω) ±10% at 20°C				Operation Characteristics (against rated values at 20°C)		
	SPDT	DPDT	3PDT	4PDT	SPDT	DPDT	3PDT	4PDT	Max. Continuous Applied Voltage	Pickup Voltage	Dropout Voltage
6	128	150	240	250	47	40	25	24	110%	80% maximum	10% minimum
12	64	75	120	125	188	160	100	96			
<b>24</b>	32	36.9	60	62	750	650	400	388			
48	18	18.5	30	31	2,660	2,600	1,600	1,550			
100-110	—	8.2-9.0	—	—	—	12,250	—	—			
110	8	—	12.8	15	13,800	—	8,600	7,340			



Standard coil voltages are in **BOLD**.

Terminal Blocks

Circuit Breakers

## Specifications

Contact Material	Silver cadmium oxide		
Contact Resistance <sup>1</sup>	50mΩ maximum		
Minimum Applicable Load	24V DC, 30 mA; 5V DC, 100 mA (reference value)		
Operating Time <sup>2</sup>	SPDT DPDT	20ms maximum	
	3PDT 4PDT	25ms maximum	
Release Time <sup>2</sup>	SPDT DPDT	20ms maximum	
	3PDT 4PDT	25ms maximum	
Power Consumption (approx.)	SPDT	AC: 1.1VA (50Hz), 1VA (60Hz)	DC: 0.8W
	DPDT	AC: 1.4VA (50Hz), 1.2VA (60Hz)	DC: 0.9W
	3PDT	AC: 2VA (50Hz), 1.7VA (60Hz)	DC: 1.5W
	4PDT	AC: 2.5VA (50Hz), 2VA (60Hz)	DC: 1.5W
Insulation Resistance	100MΩ minimum (500V DC megger)		
Dielectric Strength <sup>3</sup>	SPDT	Between live and dead parts: 2,000V AC, 1 minute	Between contact and coil: 2,000V AC, 1 minute
	DPDT 3PDT 4PDT	Between live and dead parts: 2,000V AC, 1 minute	Between contact and coil: 2,000V AC, 1 minute
Operating Frequency	Electrical:	1,800 operations/hour maximum	
	Mechanical:	18,000 operations/hour maximum	
Vibration Resistance	Damage limits:	10 to 55Hz, amplitude 0.5 mm	
	Operating extremes:	10 to 55Hz, amplitude 0.5 mm	
Shock Resistance	Damage limits:	1,000m/s <sup>2</sup> (100G)	
	Operating extremes:	200m/s <sup>2</sup> (20G - SPDT, DPDT) 100m/s <sup>2</sup> (10G - 3PDT, 4PDT)	
Mechanical Life	50,000,000 operations minimum		
Electrical Life	DPDT	500,000 operations minimum (120V AC, 10A)	
	SPDT 3PDT 4PDT	200,000 operations minimum (120V AC, 10A)	
Operating Temperature <sup>4</sup>	SPDT DPDT	-25 to +70°C (no freezing)	
	3PDT 4PDT		
Operating Humidity	45 to 85% RH (no condensation)		
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 diode is -25 to +40°C.