

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 □ | |
| | With Indicator | RH1B-UL □ | — | |
| | With Check Button | RH1B-UC □ | — | AC6V, AC12V, AC24V , AC110V, AC120V , AC220V, AC240V DC6V, DC12V , DC24V , DC48V, DC110V |
| | With Indicator and Check Button | RH1B-ULC □ | — | |
| | Top Bracket Mounting | RH1B-UT □ | — | |
| | With Diode (DC coil only) | RH1B-UD □ | RH1V2-UD □ | DC6V, DC12V , DC24V , DC48V, DC110V |
| | With Indicator and Diode (DC coil only) | RH1B-ULD □ | — | DC12V , DC24V , DC48V, DC110V |
|  DPDT | Standard | RH2B-U □ | RH2V2-U □ | |
| | With Indicator | RH2B-UL □ | RH2V2-UL □ | |
| | With Check Button | RH2B-UC □ | — | AC6V, AC12V, AC24V , AC110-120V , AC220-240V |
| | With Indicator and Check Button | RH2B-ULC □ | — | DC6V, DC12V , DC24V , DC48V, DC100-110V |
| | Top Bracket Mounting | RH2B-UT □ | — | |
| | With Diode (DC coil only) | RH2B-UD □ | RH2V2-UD □ | DC6V, DC12V , DC24V , DC48V, DC100-110V |
| | With Indicator and Diode (DC coil only) | RH2B-ULD □ | RH2V2-ULD □ | |
|  3PDT | Standard | RH3B-U □ | RH3V2-U □ | |
| | With Indicator | RH3B-UL □ | RH3V2-UL □ | |
| | With Check Button | RH3B-UC □ | — | AC6V, AC12V, AC24V , AC110V, AC120V , AC220V, AC240V DC6V, DC12V , DC24V , DC48V, DC110V |
| | 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 □ | |
| | With Indicator | RH4B-UL □ | RH4V2-UL □ | |
| | With Check Button | RH4B-UC □ | — | AC6V, AC12V, AC24V , AC110V, AC120V , AC220V, AC240V DC6V, DC12V , DC24V , DC48V, DC110V |
| | 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 ¹ | Finger-safe DIN Rail Mount ¹ | 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 ² | SY4S-51F1 |
| | | RH2B | SY4S-02F1 ² | |
| | | RH3B | SH3B-05F1 ² | |
| | | RH4B | SH4B-02F1 ² | |
|  | Leaf Spring (side latch) | RH1B, RH2B, RH3B, RH4B | SFA-202 ³ | SFA-302 ³ |
|  | Leaf Spring (top latch) | RH1B, RH2B, RH3B, RH4B | SFA-101 ³ | SFA-301 ³ |

 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 | 330 | 9.4 | 6.4 | 5.4 | | | |
| 12 | 86 | 121 | 165 | 196 | 75 | 100 | 140 | 165 | 165 | 39.3 | 25.3 | 21.2 | | | |
| 24 | 42 | 60.5 | 81 | 98 | 37 | 50 | 70 | 83 | 83 | 153 | 103 | 84.5 | | | |
| 110 | 9.6 | — | 18.1 | 21.6 | 8.4 | — | 15.5 | 18.2 | 18.2 | — | 2,200 | 1,800 | | | |
| 110-120 | — | 9.4-10.8 | — | — | — | 8.0-9.2 | — | — | — | — | — | — | | | |
| 120 | 8.6 | — | 16.4 | 19.5 | 7.5 | — | 14.2 | 16.5 | 16.5 | — | 10,800 | 7,360 | | | |
| 220 | 4.7 | — | 8.8 | 10.7 | 4.1 | — | 7.7 | 9.1 | 9.1 | — | 10,800 | 7,360 | | | |
| 220-240 | — | 4.7-5.4 | — | — | — | 4.0-4.6 | — | — | — | 18,820 | — | — | | | |
| 240 | 4.9 | — | 8.2 | 9.8 | 4.3 | — | 7.1 | 8.3 | 8.3 | — | 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 | | | |
| 24 | 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

Contact Ratings

| Model | Continuous Current | Maximum Contact Capacity | | | | |
|----------------------|--------------------|--------------------------|----------------|-------------|-----------|-----------|
| | | Allowable Contact Power | | Rated Load | | |
| | | Resistive Load | Inductive Load | Voltage (V) | Res. Load | Ind. Load |
| SPDT | 10A | 1540VA 300W | 990VA 210W | 110 AC | 10A | 7A |
| | | | | 220 AC | 7A | 4.5A |
| | | | | 30 DC | 10A | 7A |
| DPDT 3PDT 4PDT | 10A | 1650VA 300W | 1100VA 225W | 110 AC | 10A | 7.5A |
| | | | | 220 AC | 7.5A | 5A |
| | | | | 30 DC | 10A | 7.5A |

Note: Inductive load for the rated load — $\cos \phi = 0.3$, 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 |

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

UL Ratings

| Voltage | Resistive | | | General Use | | | Horsepower Rating | | |
|---------|------------|------|------|-------------|------|------|-------------------|--------|-----|
| | 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 | | | | Horsepower 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 | — | — | — |

Socket Specifications

| | Sockets | Terminal | Electrical Rating | Wire Size | Torque | |
|----------------------------|--|---|---|------------------------|-----------------------------------|-----------------------------------|
| DIN Rail Mount Sockets | SH1B-05 | (Coil) M3 screws (contact) M3.5 screws with captive wire clamp | 250V, 10A | Maximum up to 2-#12AWG | 5.5 - 9 in•lbs 9 - 11.5 in•lbs | |
| | SH2B-05 SH3B-05 SH4B-05 | M3.5 screws with captive wire clamp | 300V, 10A | Maximum up to 2-#12AWG | 9 - 11.5 in•lbs | |
| | Finger-safe DIN Rail Mount | SH1B-05C | (coil) M3 screws (contact) M3.5 screws with captive wire clamp, fingersafe | 250V, 10A | Maximum up to 2-#12AWG | 5.5 - 9 in•lbs 9 - 11.5 in•lbs |
| | | SH2B-05C SH3B-05C SH4B-05C | M3.5 screws with captive wire clamp, fingersafe | 300V, 10A | Maximum up to 2-#12AWG | 9 - 11.5 in•lbs |
| Through Panel Mount Socket | SH1B-51 SH2B-51 SH3B-51 SH4B-51 | Solder | 300V, 10A | — | — | |
| PCB Mount Socket | SH1B-62 | PCB mount | 250V, 10A | — | — | |
| | SH2B-62 SH3B-62 SH4B-62 | PCB mount | 300V, 10A | — | — | |

Accessories

| Item | Appearance | Use with | Part No. | Remarks |
|-------------------------------------|---|--|----------|---|
| Aluminum DIN Rail (1 meter length) |  | All DIN rail sockets | BNDN1000 | The BNDN1000 is designed to accommodate DIN mount sockets. Made of durable extruded aluminum, the BNDN1000 measures 0.413 (10.5mm) in height and 1.37 (35mm) in width (DIN standard). Standard length is 39" (1,000mm). |
| DIN Rail End Stop |  | DIN rail | BNL5 | 9.1 mm wide. |
| Replacement Hold-Down Spring Anchor |  | DIN mount sockets and hold down springs. | Y778-011 | For use on DIN rail mount socket when using pullover wire hold down spring. 2 pieces included with each socket. |