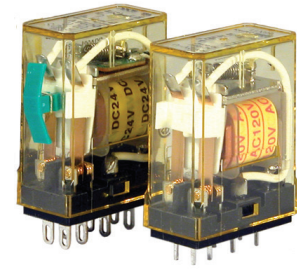


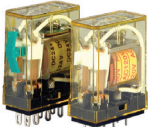

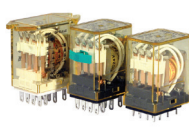
RY/RM Series Miniature Relays

Key features:

- RY2 (3A), RY4 (5A), RM2 (5A)
- General purpose miniature relays
- 3A or 5A contact capacity
- Wide variety of terminal styles and coil voltages meet a wide range of applications
- All 4PDT types have arc barriers.



Part Number Selection

| Contact | Model | Part Number | | Coil Voltage Code |
|--|---|-----------------------------------|----------------------------------|--|
| | | Plug-in Terminal | PC Board Terminal | |
|  DPDT (Slim) 3A | Standard | RY2S-U <input type="checkbox"/> | RY2V-U <input type="checkbox"/> | AC6V, AC12V, AC24V, AC110V, AC120V, AC220V, AC240V DC6V, DC12V, DC24V, DC48V, DC110V |
| | With Indicator | RY2S-UL <input type="checkbox"/> | RY2V-UL <input type="checkbox"/> | |
| | With Check Button | RY2S-UC <input type="checkbox"/> | — | |
| | With Indicator and Check Button | RY2S-ULC <input type="checkbox"/> | — | |
| | Top Bracket Mounting | RY2S-UT <input type="checkbox"/> | — | |
| | With Diode (DC coil only) | RY2S-UD <input type="checkbox"/> | RY2V-UD <input type="checkbox"/> | |
|  DPDT (Wide) 5A | Standard | RM2S-U <input type="checkbox"/> | RM2V-U <input type="checkbox"/> | RYAC6V, AC12V, AC24V, AC110-120V, AC220-240V DC6V, DC12V, DC24V, DC48V, DC100-110V |
| | With Indicator | RM2S-UL <input type="checkbox"/> | RM2V-UL <input type="checkbox"/> | |
| | With Check Button | RM2S-UC <input type="checkbox"/> | — | |
| | With Indicator and Check Button | RM2S-ULC <input type="checkbox"/> | — | |
| | Top Bracket Mounting | RM2S-UT <input type="checkbox"/> | — | |
| | With Diode (DC coil only) | RM2S-UD <input type="checkbox"/> | — | |
|  4PDT 5A | Standard | RY4S-U <input type="checkbox"/> | RY4V-U <input type="checkbox"/> | AC6V, AC12V, AC24V, AC110-120V, AC220-240V DC6V, DC12V, DC24V, DC48V, DC100-110V |
| | With Indicator | RY4S-UL <input type="checkbox"/> | RY4V-UL <input type="checkbox"/> | |
| | With Check Button | RY4S-UC <input type="checkbox"/> | — | |
| | With Indicator and Check Button | RY4S-ULC <input type="checkbox"/> | — | |
| | Top Bracket Mounting | RY4S-UT <input type="checkbox"/> | — | |
| | With Diode (DC coil only) | RY4S-UD <input type="checkbox"/> | — | |
| | With Indicator and Diode (DC coil only) | RY4S-ULD <input type="checkbox"/> | — | |



Top mount models are designed to mount directly to a panel and do not require a socket.

Ordering Information

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

(example) **RY4S-U**

AC110-120V

Part No.

Coil Voltage Code

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers



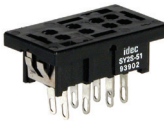

Contactors

Terminal Blocks




Circuit Breakers


Sockets

| Relays | Standard DIN Rail Mount | Finger-safe DIN Rail Mount | Through Panel Mount | PCB Mount |
|--------|-------------------------|----------------------------|---------------------|--------------------|
| RY2S | SY2S-05 | SY2S-05C | SY2S-51 | SY2S-61 |
| RM2 | SM2S-05 | SM2S-05C | SM2S-51 | SY4S-61 SY4S-62 |
| RY4S | SY4S-05 | SY4S-05C | SY4S-51 | |









Hold Down Springs & Clips

| Appearance | Item | Relay | For DIN Mount Socket | For Through Panel & PCB Mount Socket |
|--|---------------------------------------|-----------|----------------------|--------------------------------------|
|  | Pullover Wire Spring | RY2S | SY2S-02F1 | SY4S-51F1 |
| | | RM2 | SY4S-51F1 | SY4S-51F1 |
| | | RY4S | | |
|  | Leaf Spring ¹ (side latch) | RY2S | SFA-202 ² | SFA-302 |
| | | RM2, RY4S | | |
|  | Leaf Spring ¹ (top latch) | RY2S | SFA-101 ² | SFA-301 |
| | | RM2 | | |
| | | RY4S | | |

-  1. Not available for PCB mount socket SY4S-62.
- 2. Order 2 pieces per relay.

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 |  | Horseshoe clip for all DIN rail sockets | Y778-011 | For use on DIN rail mount socket when using pullover wire hold down spring. 2 pieces included with each socket. |

Specifications

| Contact Model | Standard Contact | | |
|------------------------------------|--|--|--|
| | RY2 - DPDT Slim | RM2 - DPDT Wide | RY4 - 4PDT |
| Contact Material | Gold-plated silver | Silver | Gold-plated silver |
| Contact Resistance ¹ | 50 mΩ maximum | 30 mΩ maximum | 50 mΩ maximum |
| Minimum Applicable Load | 24V DC, 5 mA; 5V DC, 10 mA (reference value) | 24V DC, 10 mA; 5V DC, 20 mA (reference value) | 24V DC, 5 mA; 5V DC, 10 mA (reference value) |
| Operating 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: 1.4 VA (50 Hz), 1.2 VA (60 Hz) DC: 0.9W |
| Insulation Resistance | 100 MΩ minimum (500V DC megger) | | |
| Dielectric Strength | Between live and dead parts: | | |
| | 1500V AC, 1 minute | 2000V AC, 1 minute | 2000V AC, 1 minute |
| | Between contact and coil: | | |
| | 1500V AC, 1 minute | 2000V AC, 1 minute | 2000V AC, 1 minute |
| | Between contacts of different poles: | | |
| | 1500V AC, 1 minute | 2000V AC, 1 minute | 2000V AC, 1 minute |
| Dielectric Strength | Between contacts of the same pole: | | |
| | 1000V AC, 1 minute | 1000V AC, 1 minute | 1000V AC, 1 minute |
| Operating Frequency | Electrical: 1800 operations/h maximum Mechanical: 18,000 operations/h maximum | | |
| Vibration Resistance | Damage limits: 10 to 55 Hz, amplitude 0.5 mm Operating extremes: 10 to 55 Hz, amplitude 0.5 mm | | |
| Shock Resistance | Damage limits: 1000 m/s ² Operating extremes: 100 m/s ² (DPDT Slim), 200 m/s ² (4PDT, DPDT Wide) | | |
| Mechanical Life | 50,000,000 operations | | |
| Electrical Life | 200,000 operations (220V AC, 3A) | 500,000 operations (220V AC, 5A) | 100,000 operations (220V AC, 5A) 200,000 operations (220V AC, 3A) |
| Operating Temperature ³ | -25 to +55°C (no freezing) | -25 to +45°C (no freezing) | -25 to +55°C (no freezing) ⁴ |
| Operating Humidity | 45 to 85% RH (no condensation) | | |
| Weight (approx.) | 23g | 35g | 34g |



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

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Switches & Pilot Lights

Signaling Lights

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 | | DPDT Slim | DPDT Wide & 4PDT | Max. Continuous Applied Voltage | Pickup Voltage | Dropout Voltage |
| | DPDT Slim | DPDT Wide & 4PDT | DPDT Slim | DPDT Wide & 4PDT | | | | | |
| 6 | 170 | 240 | 150 | 200 | 18.8 | 9.4 | | | |
| 12 | 86 | 121 | 75 | 100 | 76.8 | 39.3 | | | |
| 24 | 42 | 60.5 | 37 | 50 | 300 | 153 | | | |
| 110 | 9.6 | — | 8.4 | — | 6,950 | — | | | |
| 110-120 | — | 9.4-10.8 | — | 8.0-9.2 | — | 4,290 | | | |
| 120 | 8.6 | — | 7.5 | — | 8,100 | — | | | |
| 220 | 4.7 | — | 4.1 | — | 25,892 | — | | | |
| 220-240 | — | 4.7-5.4 | — | 4.0-4.6 | — | 18,820 | | | |
| 240 | 4.9 | — | 4.3 | — | 26,710 | — | | | |

Relays & Sockets

Timers

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) | | |
|-------------|---------------------------------|------------------|----------------------------------|------------------|--|----------------|-----------------|
| | DPDT Slim | DPDT Wide & 4PDT | DPDT Slim | DPDT Wide & 4PDT | Max. Continuous Applied Voltage | Pickup Voltage | Dropout Voltage |
| 6 | 128 | 150 | 47 | 40 | 110% | 80% maximum | 10% minimum |
| 12 | 64 | 75 | 188 | 160 | | | |
| 24 | 32 | 36.9 | 750 | 650 | | | |
| 48 | 18 | 18.5 | 2,660 | 2,600 | | | |
| 100-110 | — | 8.2-9.0 | — | 12,250 | | | |
| 110 | 8 | — | 13,800 | — | | | |

Contact Ratings

| Maximum Contact Capacity | | | | | | |
|--------------------------|--------------------|-------------------------|---------------------|-------------|-----------|-----------|
| Contact | Continuous Current | Allowable Contact Power | | Rated Load | | |
| | | Resistive Load | Inductive Load | Voltage (V) | Res. Load | Ind. Load |
| DPDT Slim (RY2) | 3A | 660 VA AC 90W DC | 176 VA AC 45W DC | 110V AC | 3A | 1.5A |
| | | | | 220V AC | 3A | 0.8A |
| | | | | 30V DC | 3A | 1.5A |
| DPDT Wide (RM2) | 5A | 1100VA AC 150W DC | 440VA AC 75W DC | 110V AC | 5A | 2.5A |
| | | | | 220V AC | 5A | 2A |
| | | | | 30V DC | 5A | 2.5A |
| 4PDT (RY4) | 5A | 1200 VA AC 150W DC | 288 VA AC 60W DC | 240V AC | 5A | 1.2A |
| | | | | 30V DC | 5A | 2A |

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

TÜV Ratings

| Voltage | DPDT Slim | DPDT Wide | 4PDT |
|---------|-----------|-----------|------|
| 240V AC | 3A | 5A | 5A |
| 30V DC | 3A | 5A | 5A |

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

UL Ratings

| Voltage | Resistive | | | General use | | |
|---------|-----------|-----------|------|-------------|-----------|------|
| | DPDT Slim | DPDT Wide | 4PDT | DPDT Slim | DPDT Wide | 4PDT |
| 240V AC | 3A | 5A | 5A | 0.8A | 2A | 5A |
| 120V AC | — | — | — | 1.5A | 2.5A | — |
| 100V DC | 0.2A | 0.4A | 0.2A | 0.2A | — | 0.2A |
| 30V DC | 3A | 5A | 5A | 3A | — | 5A |

CSA Ratings

| Voltage | Resistive | | | General use | | |
|---------|-----------|-----------|------|-------------|-----------|------|
| | DPDT Slim | DPDT Wide | 4PDT | DPDT Slim | DPDT Wide | 4PDT |
| 240V AC | 3A | 5A | 5A | 0.8A | 2A | 5A |
| 120V AC | 3A | 5A | — | 1.5A | 2.5A | — |
| 100V DC | — | — | — | 0.2A | 0.4A | 0.2A |
| 30V DC | 3A | 5A | 5A | 1.5A | 2.5A | 1.5A |

Contactors

Terminal Blocks

Circuit Breakers

Socket Specifications

| | Sockets | Terminal | Electrical Rating | Wire Size | Torque |
|----------------------------|----------|---|-------------------|------------------------|----------------|
| DIN Rail Mount Sockets | SY2S-05 | M3 screws with captive wire clamp | 300V, 7A | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| | SM2S-05 | M3 screw with captive wire clamp | 300V, 10A | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| | SY4S-05 | M3 screw with captive wire clamp | 300V, 7A* | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| Finger-safe DIN Rail Mount | SY2S-05C | M3 screws with captive wire clamp, fingersafe | 300V, 7A | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| | SM2S-05C | M3 screw with captive wire clamp, fingersafe | 300V, 10A | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| | SY4S-05C | M3 screw with captive wire clamp, fingersafe | 300V, 7A* | Maximum up to 2-#14AWG | 5.5 - 9 in•lbs |
| Through Panel Mount Socket | SY2S-51 | Solder | 250V, 7A | — | — |
| | SM2S-51 | Solder | 250V, 10A | — | — |
| | SY4S-51 | Solder | 250V, 7A* | — | — |
| PCB Mount Socket | SY2S-61 | PCB Mount | 300V, 7A | — | — |
| | SY4S-61 | PCB Mount | 300V, 7A | — | — |
| | SY4S-62 | PCB Mount | 250V, 7A | — | — |



* When using only 2 poles of the 4-poles, the UL recognized current is 10A.

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

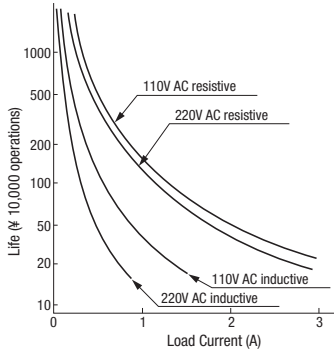
Terminal Blocks

Circuit Breakers

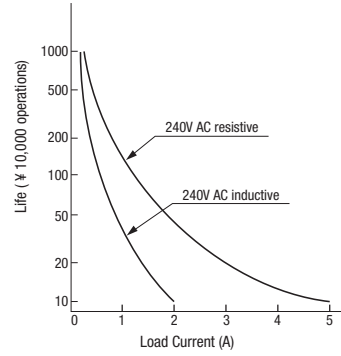
Characteristics (Reference Data)

Electrical Life Curves

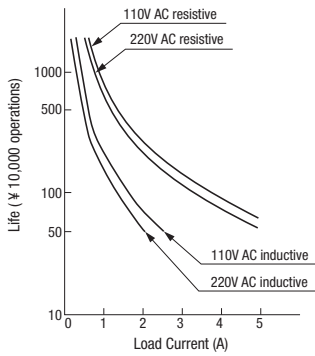
AC Load
(RY2)



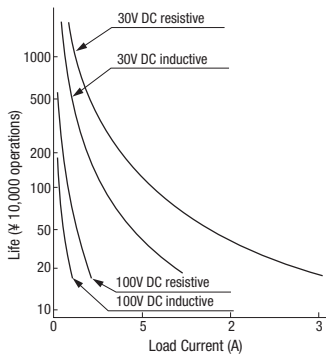
(RY4)



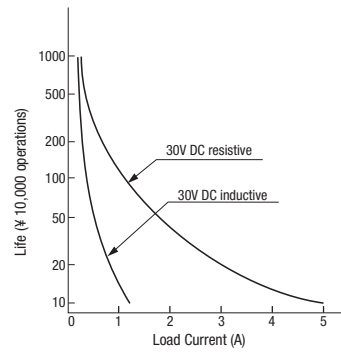
(RM2)



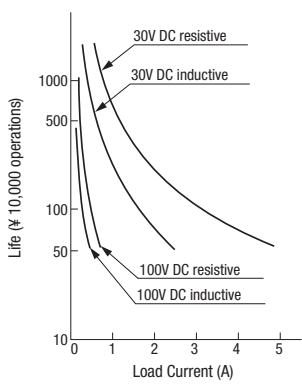
DC Load
(RY2)



(RY4)



(RM2)



Switches & Pilot Lights
Signalming Lights

Relays & Sockets

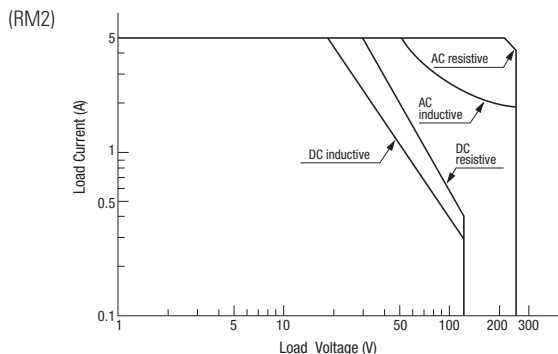
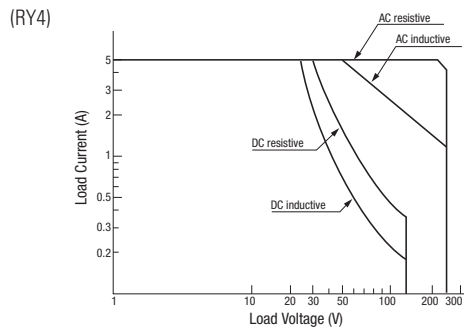
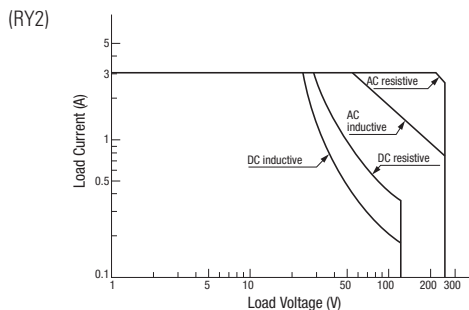
Timers

Contactors

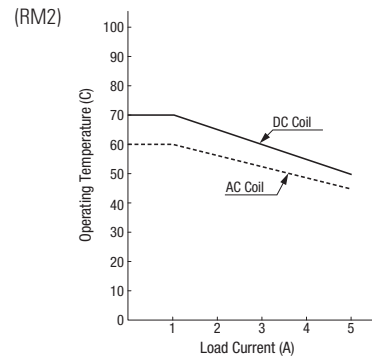
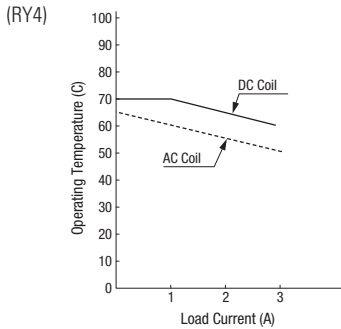
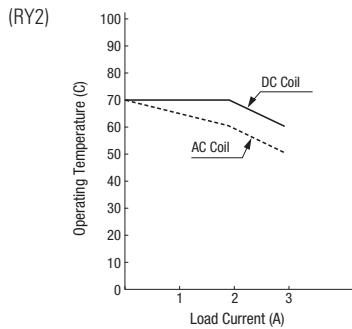
Terminal Blocks

Circuit Breakers

Maximum Switching Capacity



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



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

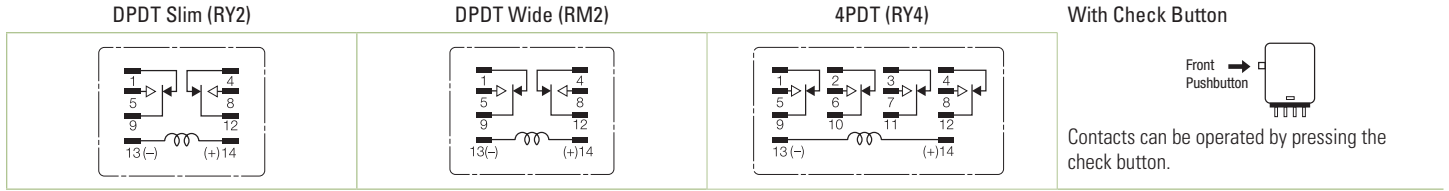
Contactors

Terminal Blocks

Circuit Breakers

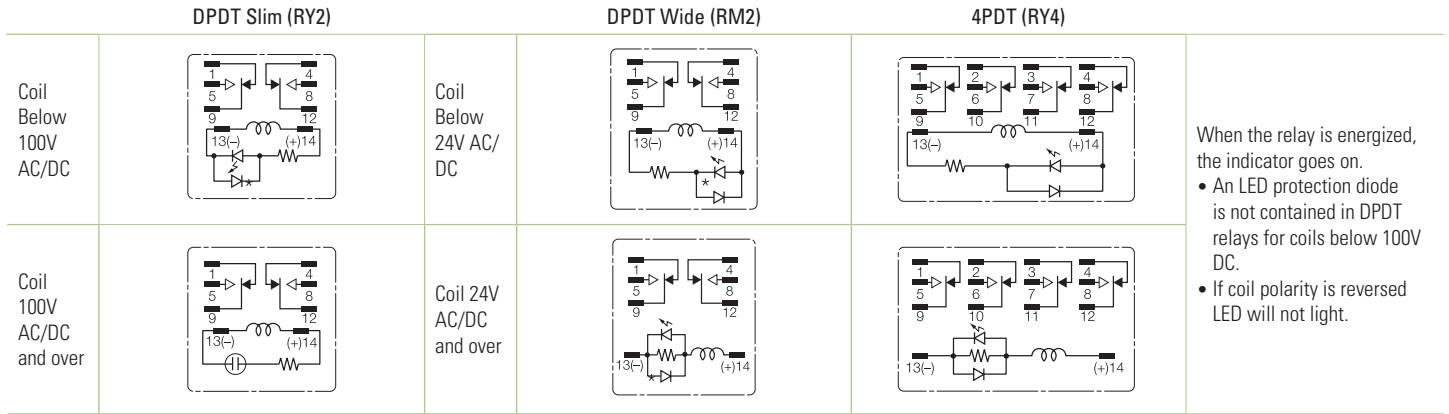
Switches & Pilot Lights

Internal Connection (View from Bottom)
Standard Type



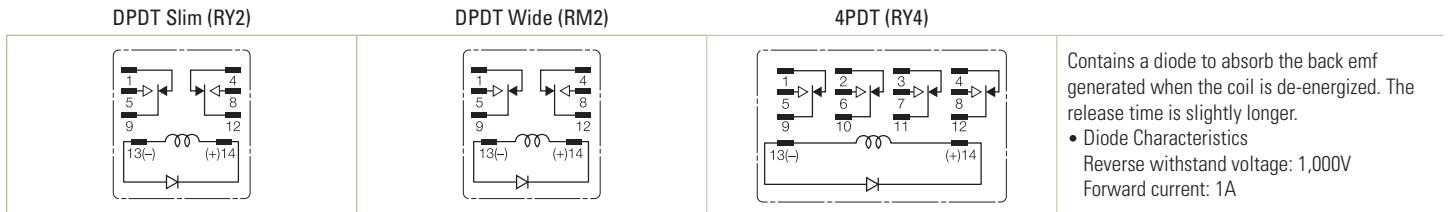
Signaling Lights

With Indicator (-L type)



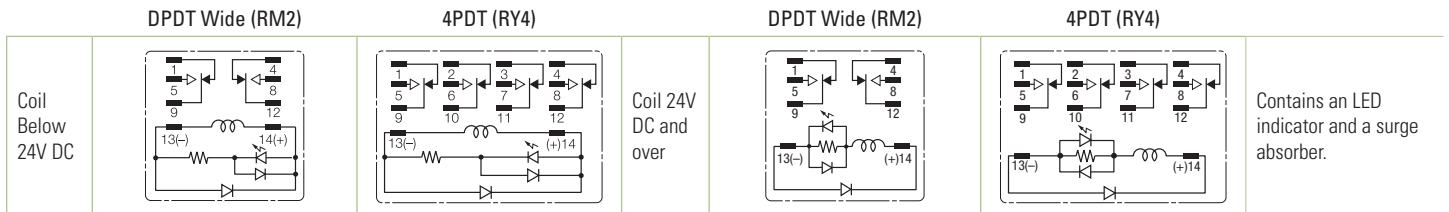
Relays & Sockets

With Diode (-D type)



Timers

With Indicator and Diode (-LD type)



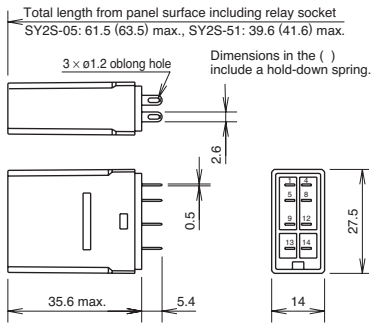
Contactors

Terminal Blocks

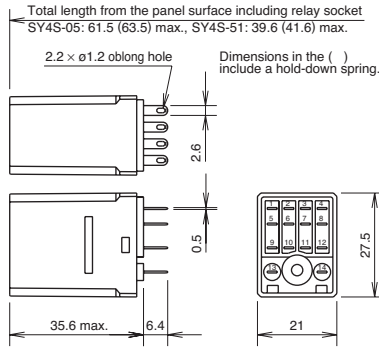
Circuit Breakers

Dimensions (mm)

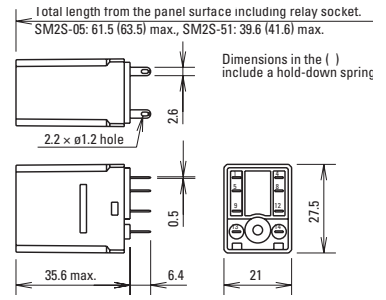
RY2S



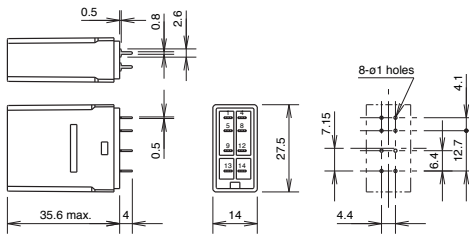
RY4S



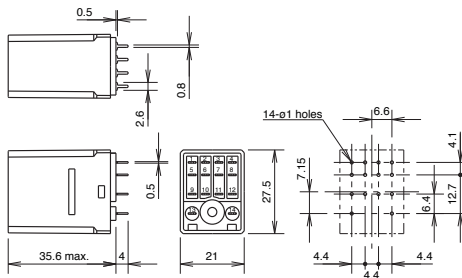
RM2S



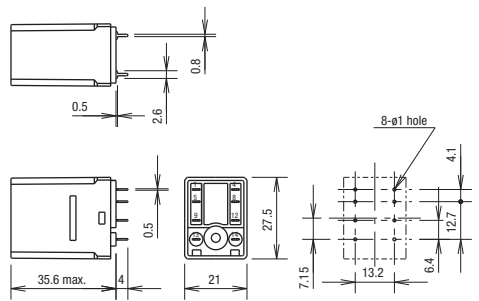
RY2V



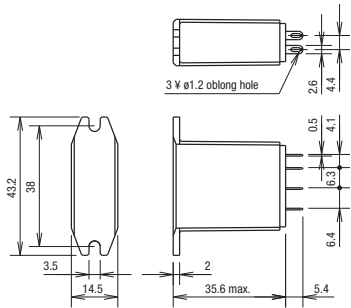
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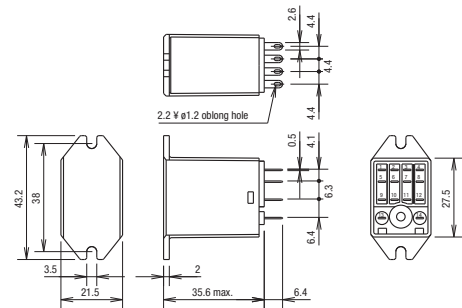
RM2V



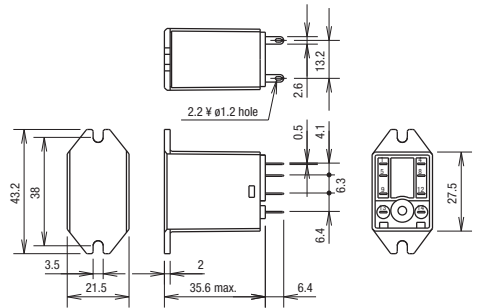
RY2S-UT



RY4S-UT



RM2S-UT



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

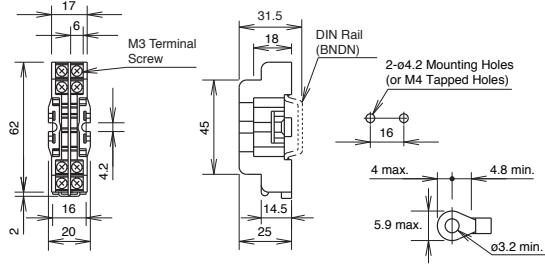
Terminal Blocks

Circuit Breakers

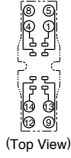
Dimensions

Standard DIN Rail Mount Sockets

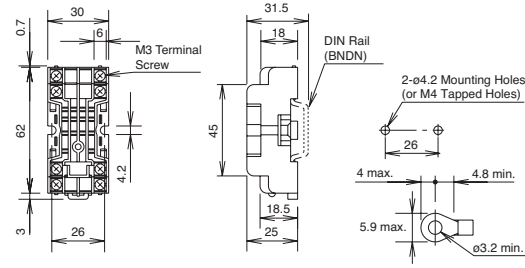
SY2S-05



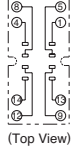
Terminal Arrangement



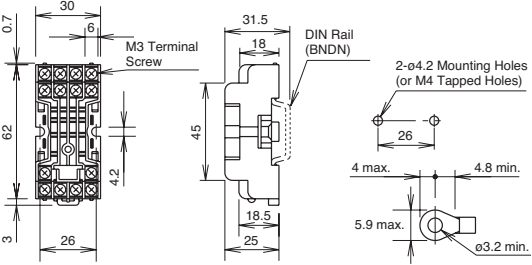
SM2S-05



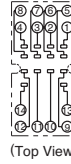
Terminal Arrangement



SY4S-05

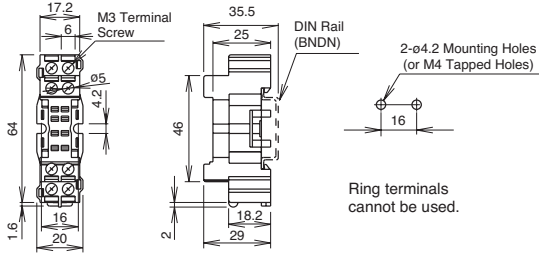


Terminal Arrangement

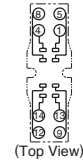


Finger-safe DIN Rail Mount Sockets

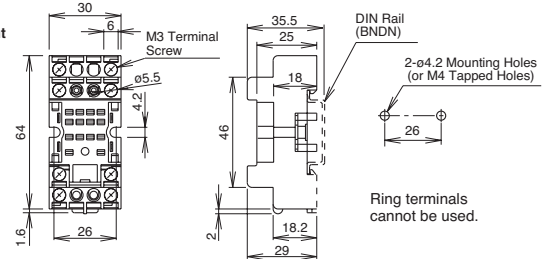
SY2S-05C



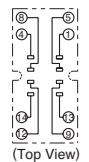
Terminal Arrangement



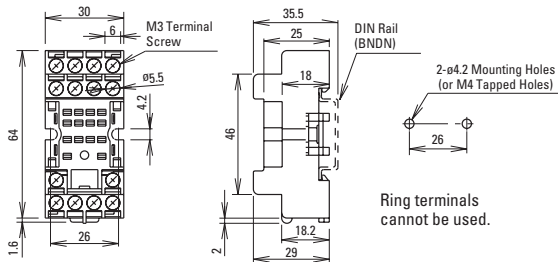
SM2S-05C



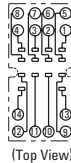
Terminal Arrangement



SY4S-05C



Terminal Arrangement



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

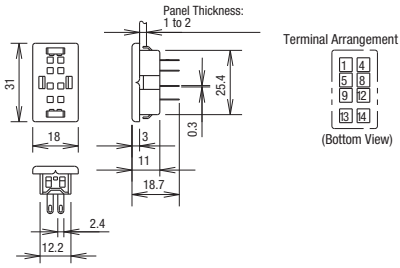
Contactors

Terminal Blocks

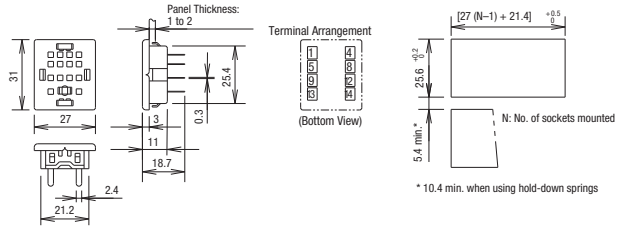
Circuit Breakers

Through Panel Mount Socket

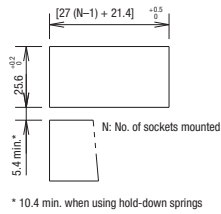
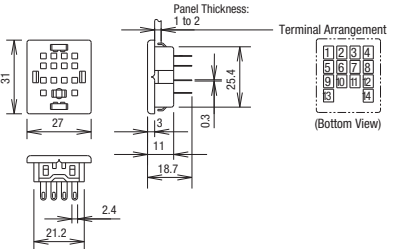
SY2S-51



SM2S-51

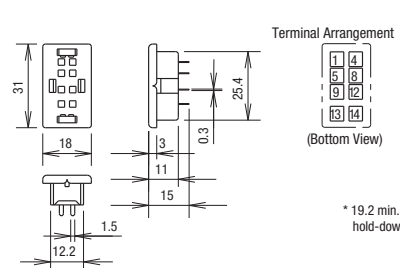


SY4S-51

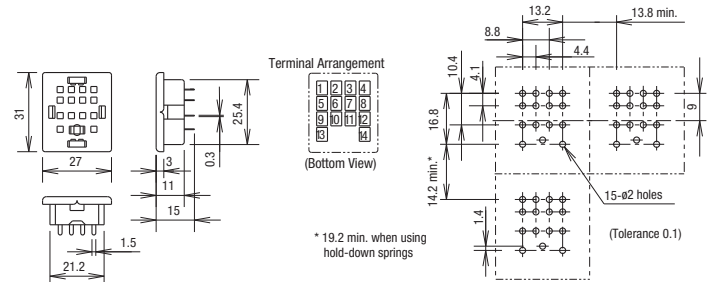


PCB Mount Sockets

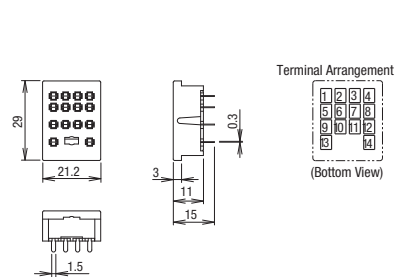
SY2S-61



SY4S-61



SY4S-62



* 17.2 min. when using a hold-down spring.
 ** 43.2 min. when using a hold-down spring for the relay with check button

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Mouser Electronics

Authorized Distributor

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[RY2KS-UAC120V](#) [RY2S-UAC24V](#) [RY4S-ULCAC110-120V](#) [RY4S-ULAC24V](#) [RY4S-UDC12V](#) [RY2S-ULAC120V](#) [RY2S-ULDC24V](#) [RY2S-UDC12V](#) [RY4S-UAC110-120V](#) [RY4S-ULDC24V](#) [RY2S-UDC24V](#) [RY4S-UDC24V](#) [RY2S-UAC120V](#) [RY4S-ULAC110-120V](#) [RY4S-UAC24V](#) [RY4S-ULCAC220-240](#) [RM2S-D-DC24V](#) [RM2S-UTAC120V](#) [RM2S-UTAC240V](#) [RY22S-LDC12V](#) [RY22S-UCAC12V](#) [RY22S-UDC110V](#) [RY22S-ULCAC24V](#) [RY22S-ULDC24V](#) [RY22S-ULDC6V](#) [RY4S-D-DC12V](#) [RY4S-D-DC48V](#) [RY4S-UAC120V](#) [RY4S-UDC5V](#) [RM2V1-AC120V](#) [RM2V-ULAC120V](#) [RY22S-UCAC120V](#) [RY22S-UCAC240V](#) [RY22S-UD-DC24V](#) [RY22S-ULDC48V](#) [RY22S-UTDC48V](#) [RY22V-UCAC24V](#) [RY22V-UCDC24V](#) [RY2LS-UAC24V](#) [RY42S-UCDC12V](#) [RY42S-ULDC24V](#) [RY42V-UDC24V](#) [RY42V-ULCAC120V](#) [RY42V-ULDC12V](#) [RY4S-UAC230V](#) [RY4S-ULCAC100V](#) [RY4V-UDC110V](#) [RY4V-ULCAC240V](#) [RY22S-ULD-DC24V](#) [RY22S-UTDC24V](#) [RY22V-UAC120V](#) [RY22V-UCDC12V](#) [RY22V-UDC6V](#) [RY22V-ULCDC48V](#) [RY2LS-UAC6V](#) [RY2S-D-DC24V](#) [RY2S-LDC24V](#) [RY42S-UAC220-240V](#) [RY42S-UDC12V](#) [RY42S-UTAC110-120V](#) [RY42V-UAC120V](#) [RY42V-UAC220-240V](#) [RY42V-UDC48V](#) [RY42V-ULCDC24V](#) [RY4S-LCD-DC24V](#) [RY4S-ULAC230V](#) [RY4V-ULCDC100V](#) [RY22S-UAC6V](#) [RY22S-UDC6V](#) [RY22V-UCDC48V](#) [RM2V-LD-DC24V](#) [RY22S-LDC24V](#) [RY22S-UAC240V](#) [RY22S-ULAC12V](#) [RY22S-ULAC24V](#) [RY22S-UTAC240V](#) [RY22S-UTAC24V](#) [RY22S-UDC48V](#) [RY22S-ULCDC12V](#) [RY22V-UAC12V](#) [RY22V-ULAC24V](#) [RY22V-ULCDC6V](#) [RY2LS-UAC120V](#) [RY2LV-UAC12V](#) [RY2S-D-DC6V](#) [RY2S-LAC120V](#) [RY2S-LAC50V](#) [RY42S-UAC240V](#) [RY42S-UDC100-110V](#) [RY42S-ULAC12V](#) [RY42S-ULCDC110V](#) [RY42S-ULCDC24V](#) [RY42S-UTAC220-240V](#) [RY42V-UDC6V](#) [RY2S-ULAC12V](#) [RY2S-ULCAC24V](#) [RM2V-UAC120V](#) [RY22S-LRAC120V](#) [RY22S-UAC12V](#) [RY22S-ULAC220V](#)