

# Power Relays: RL Series



Quick Connect  
Flange Mount



Screw Terminal  
DIN Rail Mount



## SPECIFICATIONS

|   |                          | RL1  | RL2  |
|---|--------------------------|--|--|
| Number of poles   |                          | 1 pole                                       | 2 poles                                      |
| Contact Configuration   |                          | 1X (SPST, double make)                       | 2X (DPST, double make)                       |
| Contact material  |                          | Ag Alloy                                     | Ag Alloy                                     |
| Operating Time and Release Time   |                          | 30ms max                                     | 30ms max                                     |
| Degree of Protection  |                          | IP40   | IP40   |
| Dielectric strength   | Between contact and coil | 4,000V AC for 1 minute                       | 4,000V AC for 1 minute                       |
|   | Between pole             | 2,000V AC for 1 minute                       | 2,000V AC for 1 minute                       |
|   | Between contact sets     | -  | 2,000V AC for 1 minute                       |
| Vibration Resistance  | Operating extremes       | Frequency 10 to 55 Hz, Amplitude 0.75mm      | Frequency 10 to 55 Hz, Amplitude 0.75mm      |
|   | Damage limits            | Frequency 10 to 55 Hz, Amplitude 0.75mm      | Frequency 10 to 55 Hz, Amplitude 0.75mm      |
| Shock Resistance  | Operating extremes       | 100 m/s <sup>2</sup> (10G)                   | 100 m/s <sup>2</sup> (10G)                   |
|   | Damage limits            | 1,000 m/s <sup>2</sup> (100G)                | 1,000 m/s <sup>2</sup> (100G)                |
| Electrical Life (rated load).<br>Operation frequency (1800 operations per hour) | AC resistive load        | 200,000 operations minimum                   | 200,000 operations minimum                   |
|   | Inductive load           | 100,000 operations minimum                   | 100,000 operations minimum                   |
| Mechanical Life (without load)  |                          | 1,000,000 operations minimum                 | 1,000,000 operations minimum                 |
| Operating Temperature   |                          | -25 to +55°C                                 | -25 to +55°C                                 |
| Operating Humidity  |                          | 5 to 85% (without condensation)              | 5 to 85% (without condensation)              |
| Weight  |                          | Between 90 and 135 grams, depending on model | Between 90 and 135 grams, depending on model |

## STANDARDS COMPLIANCE

| Agency ratings           | RL1   | RL2   |
|--------------------------|---|---|
| Standard current ratings | 30 A, 277 Vac, General Use, 100,000 Cycles        | 25 A, 277 Vac, General Use, 100,000 cycles        |
| HP ratings               | 1.5 HP, 120 Vac, 10,000 Cycles                    | 1.5 HP, 120 Vac, 10,000 Cycles                    |
|                          | 3 HP, 277 Vac, 30,000 Cycles                      | 3 HP, 277 Vac, 30,000 Cycles                      |
| FLA and LRA ratings      | 20 FLA, 120 LRA, 120 Vac, 50/60 Hz, 30,000 Cycles | 20 FLA, 120 LRA, 120 Vac, 50/60 Hz, 30,000 Cycles |
|                          | 17 FLA, 102 LRA, 277 Vac, 50/60 Hz, 30,000 Cycles | 17 FLA, 102 LRA, 277 Vac, 50/60 Hz, 30,000 Cycles |

## PRODUCT DESCRIPTION

Designed with a 1- and 2-pole 3HP/277V AC rating in an economical and compact package, 30A RL power relays are the superior choice for HVAC panels, energy management and applications requiring higher voltage loads and inductive kick-back. Choose from panel or DIN rail mounting.

Unlike the competition, when DIN rail mounted, RL relays don't require a socket or adaptor. Quick Connect terminals allow faster installation on commercial applications, while screw terminations are ideal for industrial applications.

## KEY FEATURES

- 3HP at 277VAC, 1.5HP at 120VAC
- Single pole rated at 30A, double pole at 25A
- Double Make contacts
- Flange mount or DIN-rail mount with panel mount tabs
- #250 quick-connect or screw terminations
- AC or DC Coil Inputs
- Designed for Motor, Lighting, and Heater Loads
- Up to 7500 VA maximum switching power
- RoHS compliant



## COIL RATINGS

| Rated Voltage |             | Coil Voltage Code | Rated Current (mA)<br>±10%      |      | Coil Resistance (Ω) | Operating Characteristics at 20°C |                 |                           | Power Consumption |
|---------------|-------------|-------------------|---------------------------------|------|---------------------|-----------------------------------|-----------------|---------------------------|-------------------|
|               |             |                   |                                 |      |                     | Pickup Voltage                    | Dropout Voltage | Maximum Allowable Voltage |                   |
| DC            | 12V         | D12               | 160                             |      | 75                  | 80% max                           | 15% min         | 110%                      | 1.9W              |
|               | 24V         | D24               | 79.0                            |      | 303                 |                                   |                 |                           | 1.9W              |
| Rated Voltage |             | Coil Voltage Code | Rated Current (mA)<br>+15% -25% |      | Coil Resistance (Ω) | Operating Characteristics at 20°C |                 |                           | Power Consumption |
|               |             |                   | 50Hz                            | 60Hz |                     | Pickup Voltage                    | Dropout Voltage | Maximum Allowable Voltage |                   |
| AC (50-60Hz)  | 24V         | A24               | 71.0                            | 69.5 | -                   | 80% max                           | 10% min         | 110%                      | 1.7-2.5VA         |
|               | 100V - 120V | A100              | 17.0                            | 16.6 | -                   |                                   |                 |                           | 1.7-2.5VA         |
|               | 200V - 240V | A200              | 8.5                             | 8.1  | -                   |                                   |                 |                           | 1.7-2.5VA         |

## CONTACT RATINGS

|                             |                |                                    |
|-----------------------------|----------------|------------------------------------|
| Allowable Contact Power     | Resistive load | 7500VA AC 1-pole, 6250VA AC 2-pole |
| Rated Load                  | Resistive load | 250V AC 30A (1 pole)               |
|                             |                | 250V AC 25A (2 pole)               |
| Allowable Switching Current |                | 30A (1 pole)                       |
|                             |                | 25A (2 pole)                       |
| Allowable Switching Voltage |                | 277VAC                             |

## PART NUMBERS

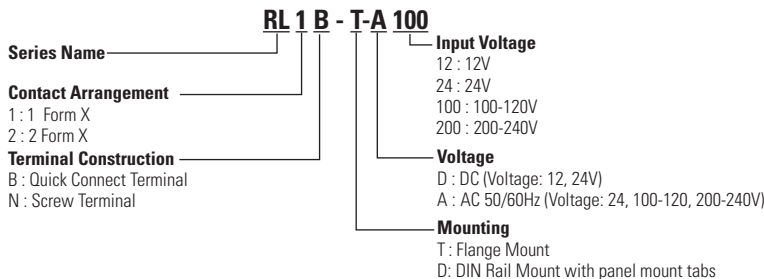
### Flange Mount

| Coil voltage |             | Screw Terminal<br>1 Pole Flange Mount | Screw Terminal<br>2 Pole Flange Mount | Quick Connect Terminal<br>1 Pole Flange Mount | Quick Connect Terminal<br>2 Pole Flange Mount |
|--------------|-------------|---------------------------------------|---------------------------------------|---|---|
| DC           | 12V         | RL1N-T-D12                            | RL2N-T-D12                            | RL1B-T-D12                                    | RL2B-T-D12                                    |
|              | 24V         | RL1N-T-D24                            | RL2N-T-D24                            | RL1B-T-D24                                    | RL2B-T-D24                                    |
| AC           | 24V         | RL1N-T-A24                            | RL2N-T-A24                            | RL1B-T-A24                                    | RL2B-T-A24                                    |
|              | 100V - 120V | RL1N-T-A100                           | RL2N-T-A100                           | RL1B-T-A100                                   | RL2B-T-A100                                   |
|              | 200V - 240V | RL1N-T-A200                           | RL2N-T-A200                           | RL1B-T-A200                                   | RL2B-T-A200                                   |

### DIN Rail Mount with Panel Mount Tabs

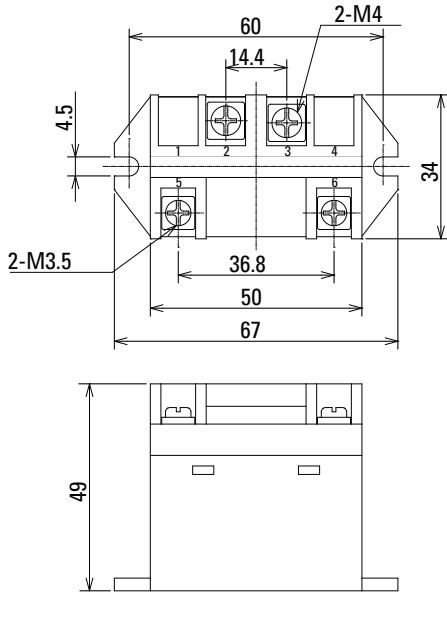
| Coil voltage |             | Screw Terminal<br>1 Pole DIN Rail | Screw Terminal<br>2 Pole DIN Rail | Quick Connect Terminal<br>1 pole DIN Rail | Quick Connect Terminal<br>2 Pole DIN Rail |
|--------------|-------------|-----------------------------------|-----------------------------------|---|---|
| DC           | 12V         | RL1N-D-D12                        | RL2N-D-D12                        | RL1B-D-D12                                | RL2B-D-D12                                |
|              | 24V         | RL1N-D-D24                        | RL2N-D-D24                        | RL1B-D-D24                                | RL2B-D-D24                                |
| AC/DC        | 24V         | RL1N-D-A24                        | RL2N-D-A24                        | RL1B-D-A24                                | RL2B-D-A24                                |
|              | 100V - 120V | RL1N-D-A100                       | RL2N-D-A100                       | RL1B-D-A100                               | RL2B-D-A100                               |
|              | 200V - 240V | RL1N-D-A200                       | RL2N-D-A200                       | RL1B-D-A200                               | RL2B-D-A200                               |

### Part Number Structure

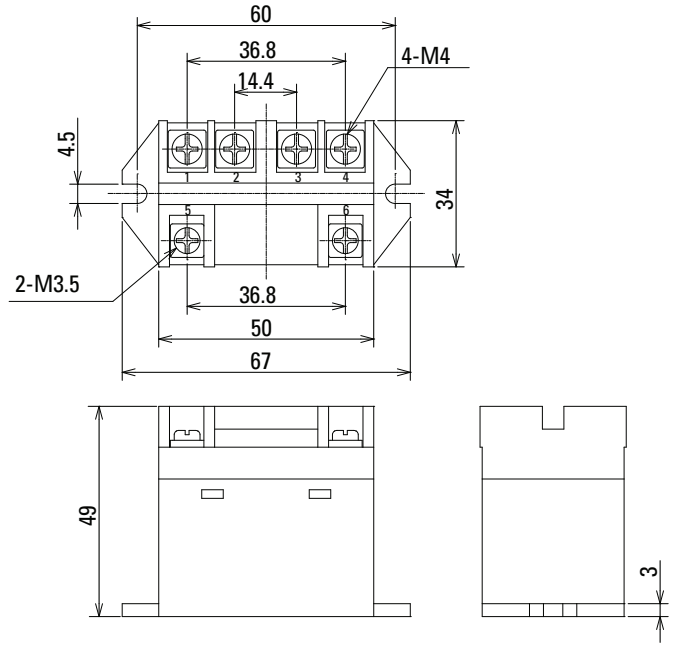


**DIMENSIONS** (All dimensions in mm, except where noted.)

**RL1N-T Screw Terminal 1 Pole Flange Mount**

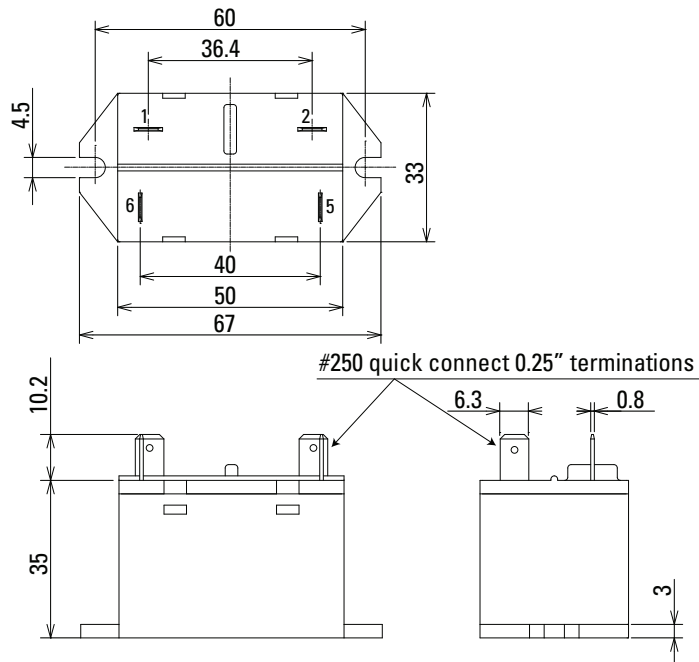


**RL2N-T Screw Terminal 2 Pole Flange Mount**

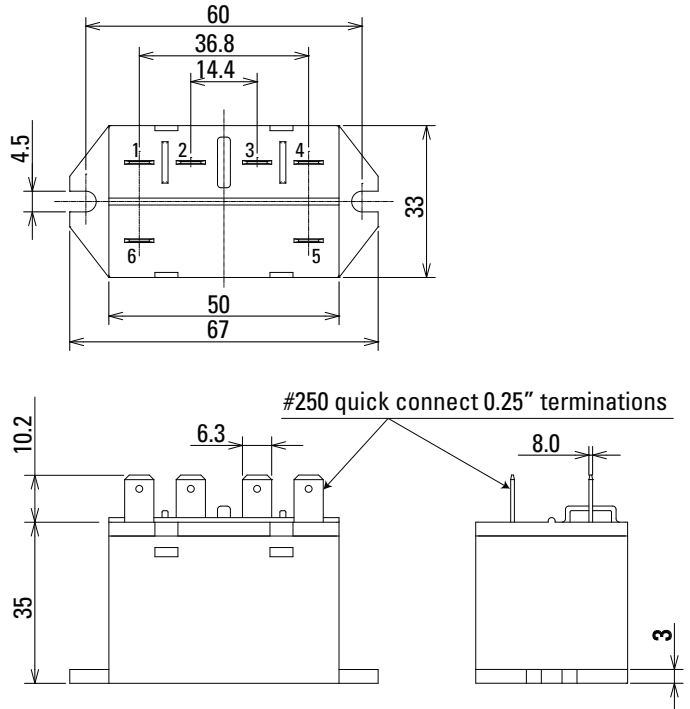


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N-m, Contact terminals (M4): 1.0 - 1.4 N-m

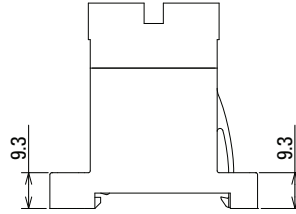
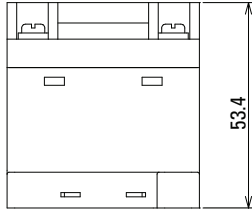
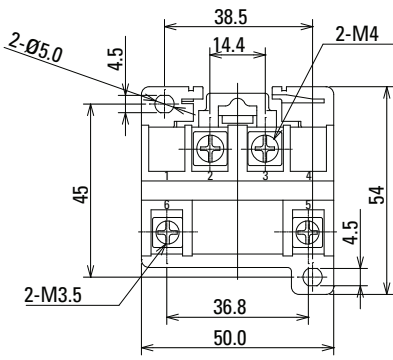
**RL1B-T Quick Connect Terminal 1 Pole Flange Mount**



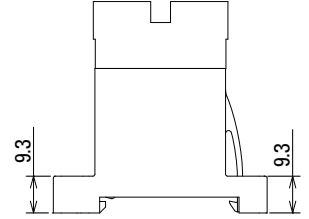
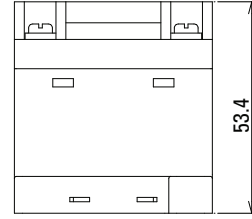
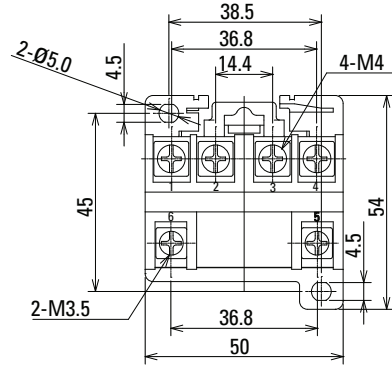
**RL2B-T Quick Connect Terminal 2 Pole Flange Mount**



**RL1N-D Screw Terminal 1 Pole DIN Rail Mount**

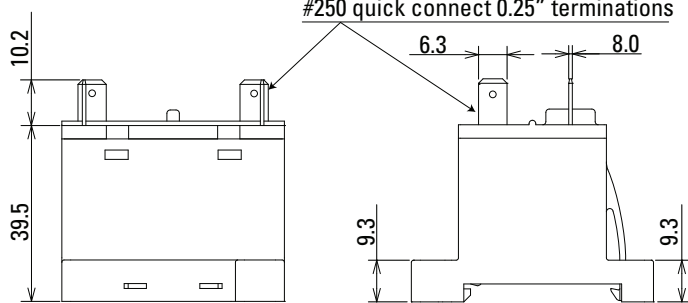
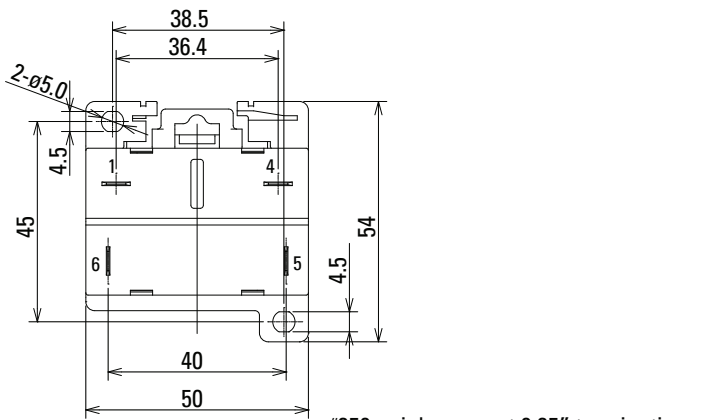


**RL2N-D Screw Terminal 2 Pole DIN Rail Mount**

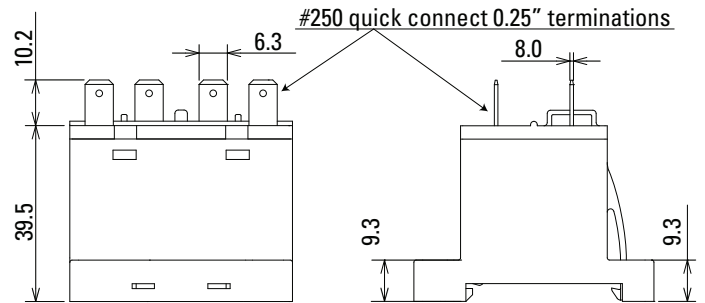
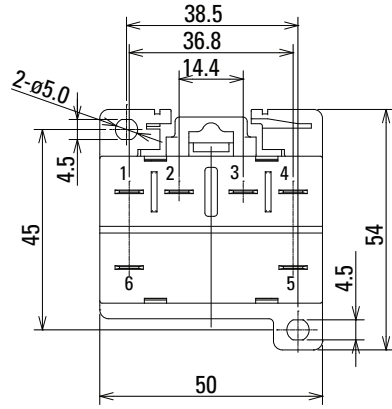


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N-m, Contact terminals (M4): 1.0 - 1.4 N-m

**RL1B-D Quick Connect Terminal 1 Pole DIN Rail Mount**



**RL2B-D Quick Connect Terminal 2 Pole DIN Rail Mount**



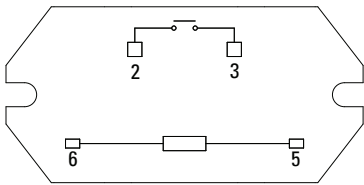
## ACCESSORIES

| Description                | Color | Part Number |
|----------------------------|-------|-------------|
| Finger-safe terminal cover | Clear | RL9Z-C      |

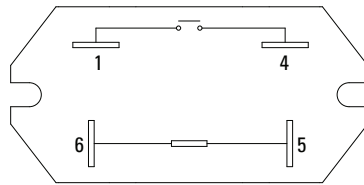
Applicable for screw terminal models only

## TERMINAL ARRANGEMENTS (TOP VIEW)

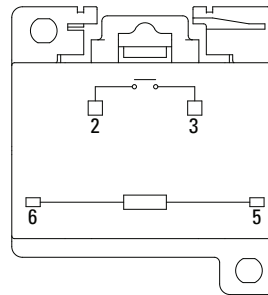
**Screw Terminal  
1 Pole Flange Mount**



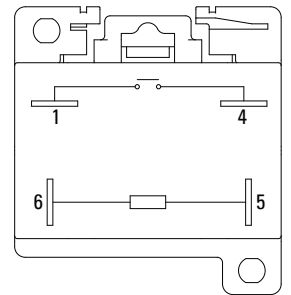
**Quick Connect Terminal  
1 Pole Flange Mount**



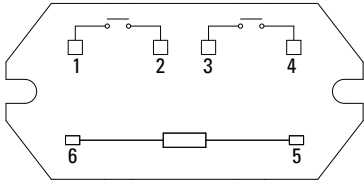
**Screw Terminal  
1 Pole DIN Rail Mount**



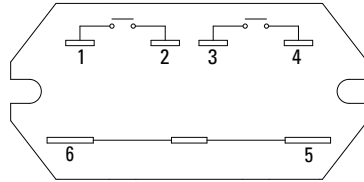
**Quick Connect Terminal  
1 Pole DIN Rail Mount**



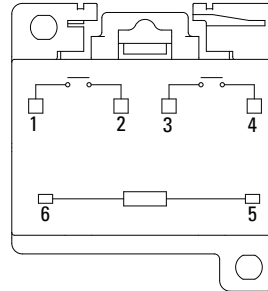
**Screw Terminal  
2 Pole Flange Mount**



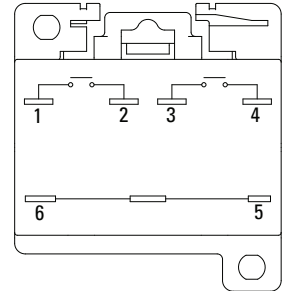
**Quick Connect Terminal  
2 Pole Flange Mount**



**Screw Terminal  
2 Pole DIN Rail Mount**

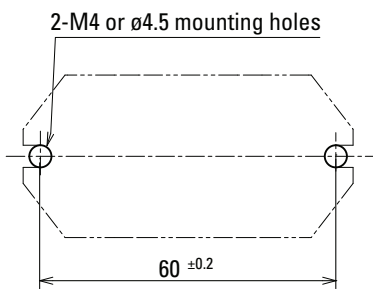


**Quick Connect Terminal  
2 Pole DIN Rail Mount**

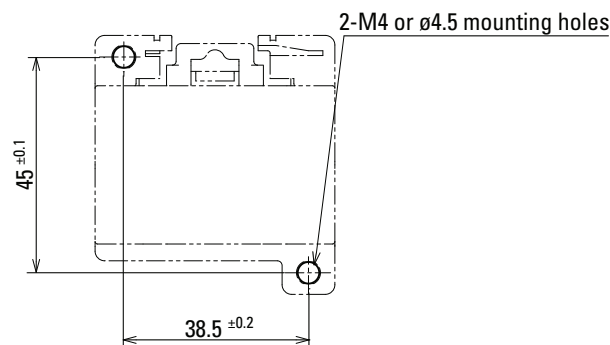


## MOUNTING HOLE DIMENSIONS

**Flange Mount**



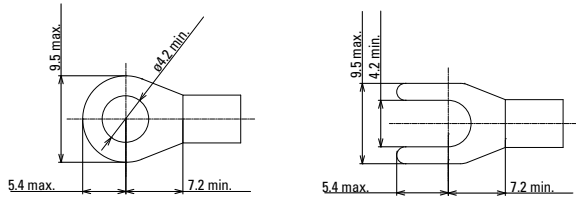
**DIN Rail Mount with Panel Mount Tabs**



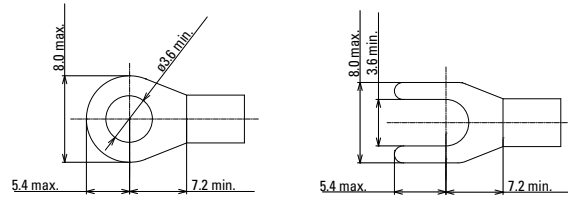
Recommended tightening torque: 0.6 - 0.9 N·m

**Recommended ring or fork terminations for screw terminals.**

**Contact Terminals**



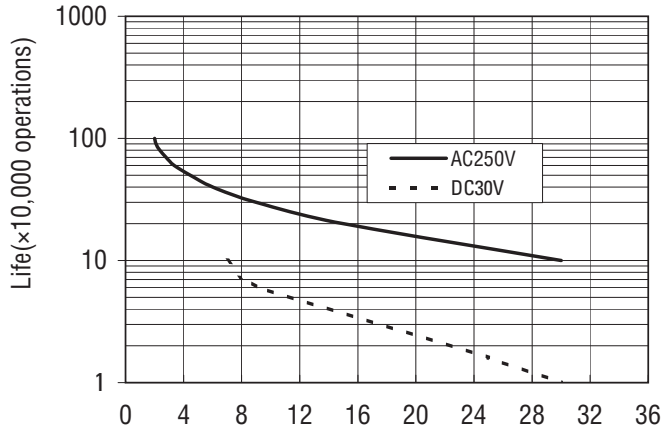
**Coil Terminals**



**Electrical Life Curves**

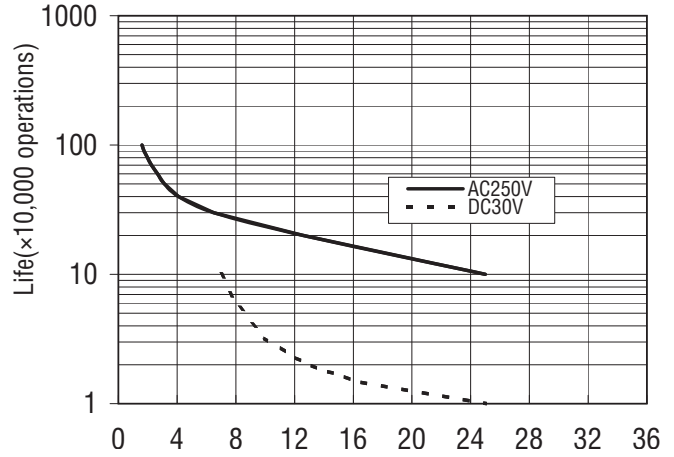
**RL1**

**1 pole**



**RL2**

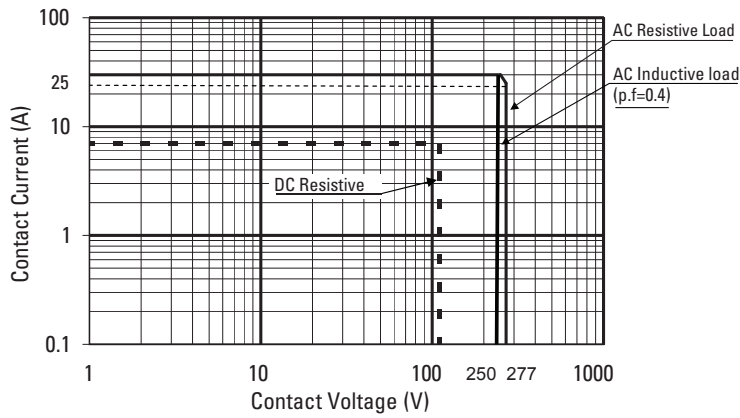
**2 poles**



**Maximum Switching Capacity**

**RL1**

**1 pole**



**RL2**

**2 poles**

