

RL Series Power Relays



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 ² (10G) | 100 m/s ² (10G) |
| | Damage limits | 1,000 m/s ² (100G) | 1,000 m/s ² (100G) |
| Electrical Life (rated load). Operation frequency (1800 operations per hour) | AC resistive load | 200,000 operations min | 200,000 operations min |
| | Inductive load | 100,000 operations min | 100,000 operations min |
| Mechanical Life (without load) | | 1,000,000 operations min | 1,000,000 operations min |
| 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 |

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) ±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) +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

| | | RL1 | RL2 |
|-----------------------------|----------------|-----------------------|-----------------------|
| Allowable Contact Power | Resistive load | 7500VA | 6250VA |
| Rated Load | Resistive load | 250VAC 30A, 30VDC 30A | 250VAC 25A, 30VDC 25A |
| Allowable Switching Current | | 30A | 25A |
| Allowable Switching Voltage | | 277VAC | |

Part Numbers

Flange Mount

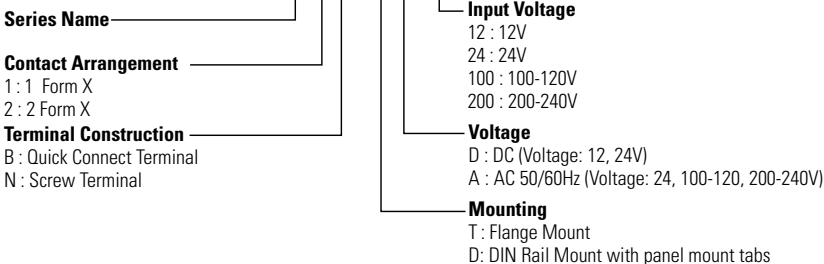
| Coil voltage | | Screw Terminal 1 Pole Flange Mount | Screw Terminal 2 Pole Flange Mount | Quick Connect Terminal 1 Pole Flange Mount | Quick Connect Terminal 2 Pole Flange Mount |
|--------------|-------------|---------------------------------------|---------------------------------------|---|---|
| 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 1 Pole DIN Rail | Screw Terminal 2 Pole DIN Rail | Quick Connect Terminal 1 pole DIN Rail | Quick Connect Terminal 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 | 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 |

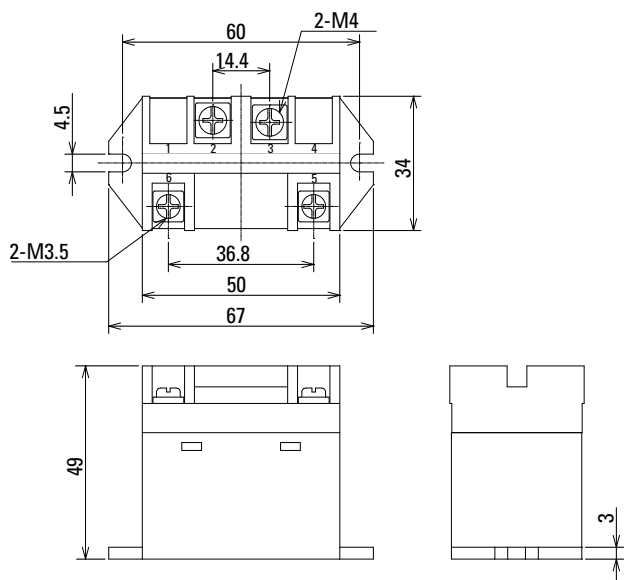
Part Number Structure

RL 1 B - T-A 100

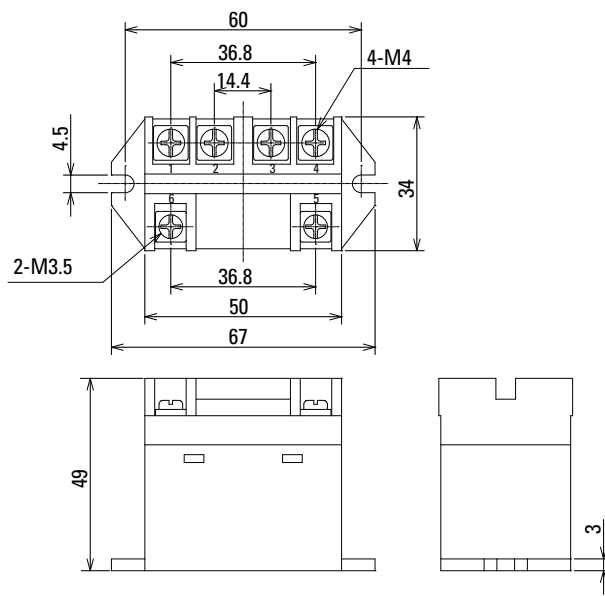


Dimensions

RL1N-T Screw Terminal 1 Pole Flange Mount

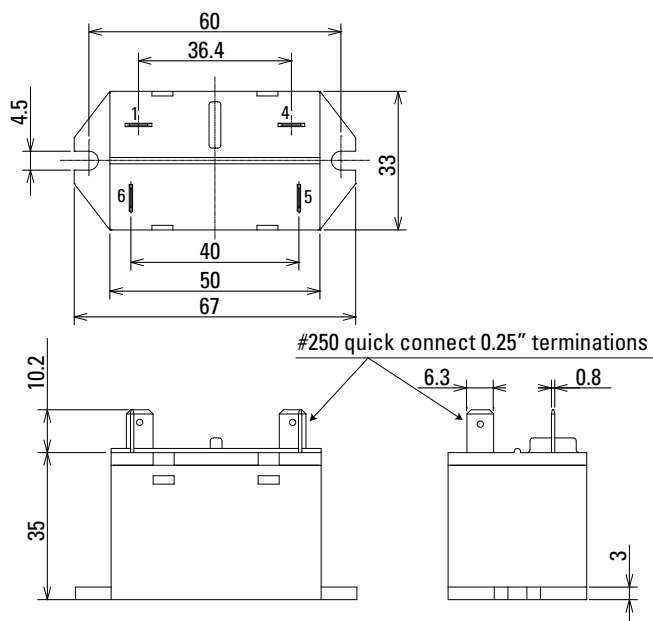


RL2N-T Screw Terminal 2 Pole Flange Mount

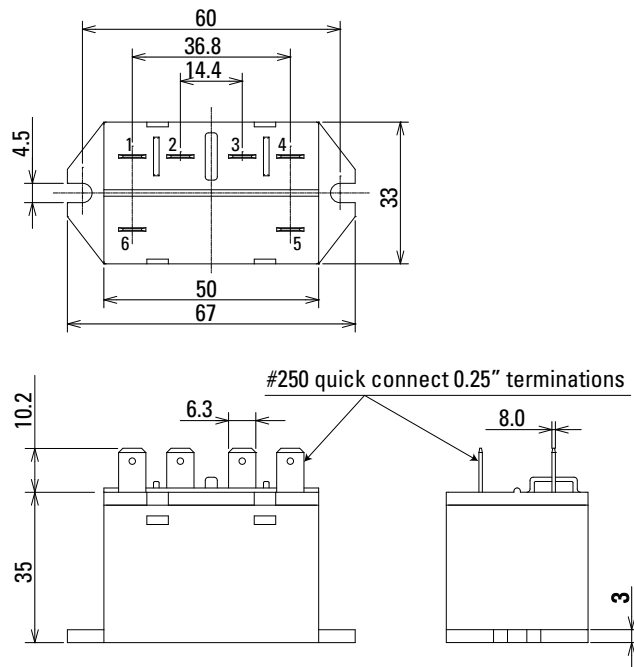


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N·m, Contact terminals (M4): 1.0 - 1.4 N·m

RL1B-T Quick Connect Terminal 1 Pole Flange Mount



RL2B-T Quick Connect Terminal 2 Pole Flange Mount



(All dimensions in mm, except where noted.)

Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

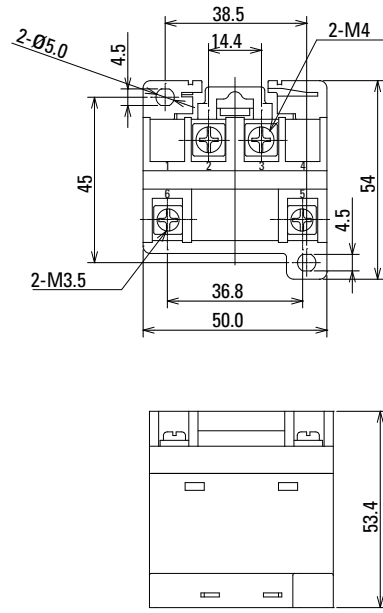
Circuit Breakers

Switches & Pilot Lights

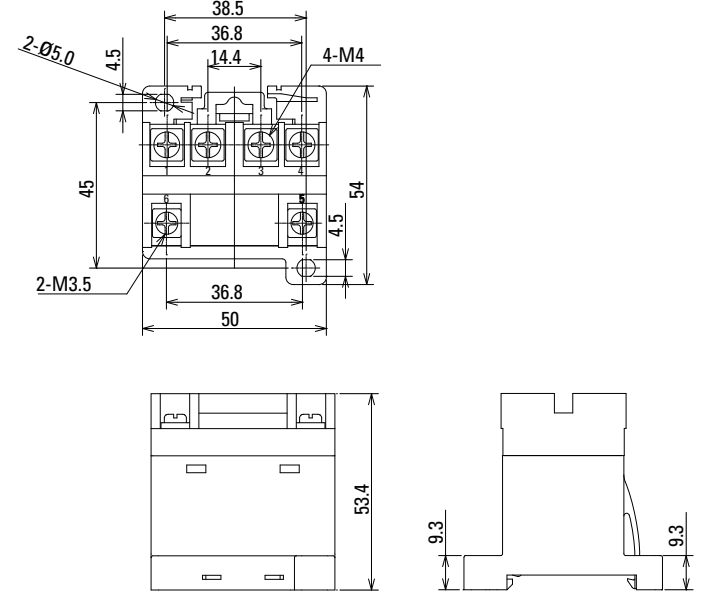
Signaling Lights

Relays & Sockets

RL1N-D Screw Terminal 1 Pole DIN Rail Mount

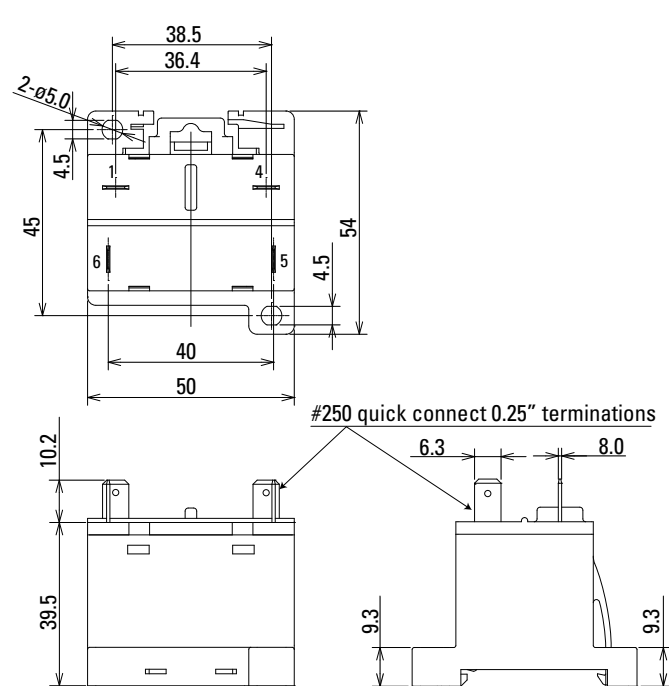


RL2N-D Screw Terminal 2 Pole DIN Rail Mount

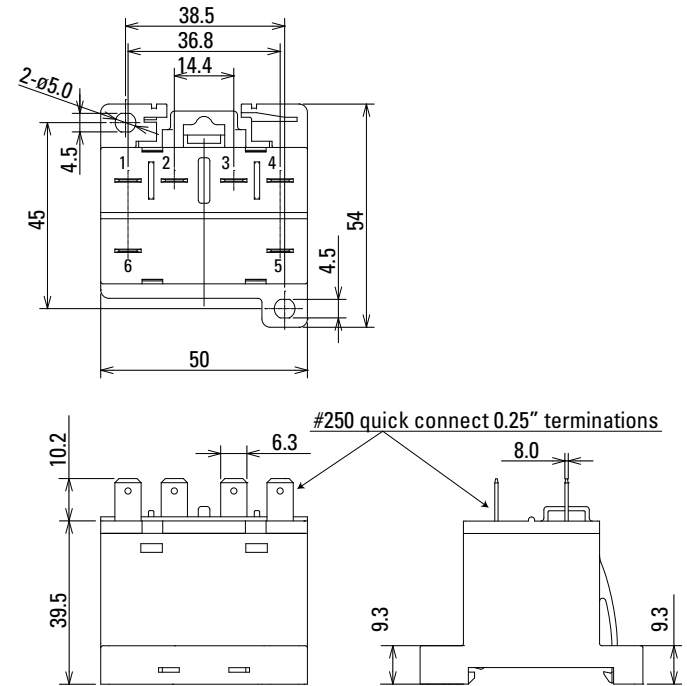


Recommended tightening torque: Coil terminals (M3.5): 0.7 - 0.9 N·m, Contact terminals (M4): 1.0 - 1.4 N·m

RL1B-D Quick Connect Terminal 1 Pole DIN Rail Mount



RL2B-D Quick Connect Terminal 2 Pole DIN Rail Mount



Timers

Contactors

Terminal Blocks

Circuit Breakers

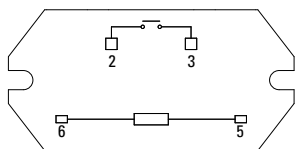
Accessories

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

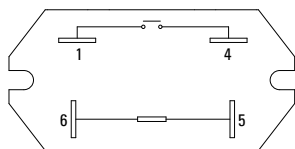
Applicable for screw terminal models only

Terminal Arrangements (Top View)

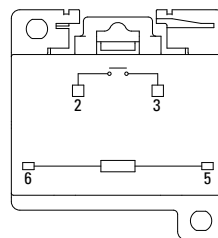
Screw Terminal
1 Pole Flange Mount



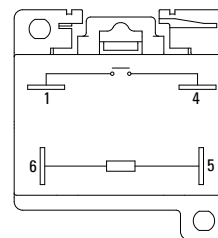
Quick Connect Terminal
1 Pole Flange Mount



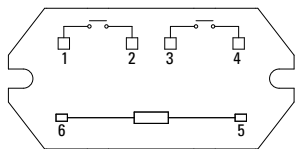
Screw Terminal
1 Pole DIN Rail Mount



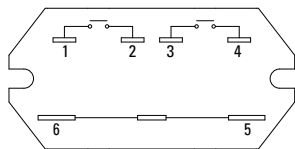
Quick Connect Terminal
1 Pole DIN Rail Mount



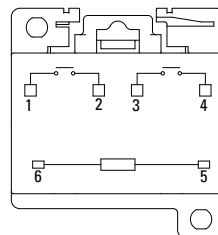
Screw Terminal
2 Pole Flange Mount



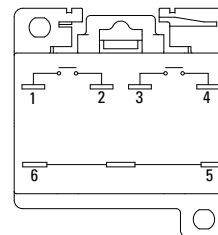
Quick Connect Terminal
2 Pole Flange Mount



Screw Terminal
2 Pole DIN Rail Mount

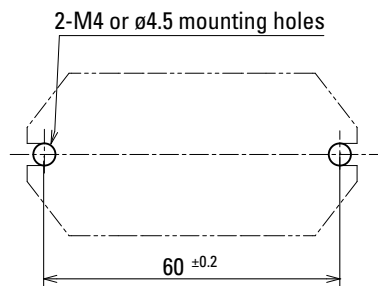


Quick Connect Terminal
2 Pole DIN Rail Mount

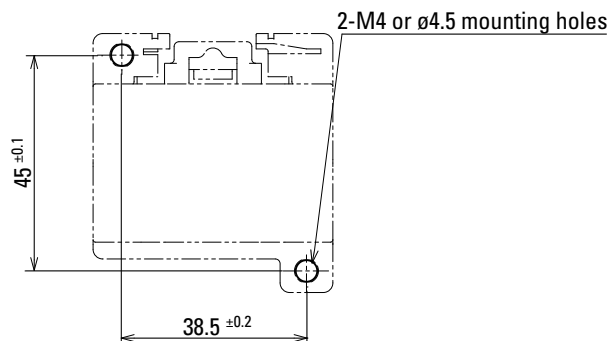


Mounting Hole Dimensions

Flange Mount



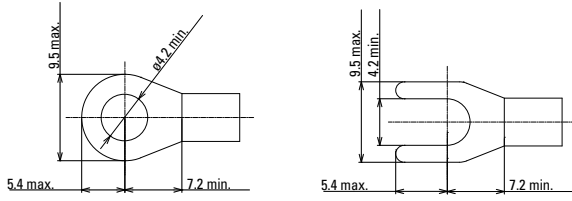
DIN Rail Mount with Panel Mount Tabs



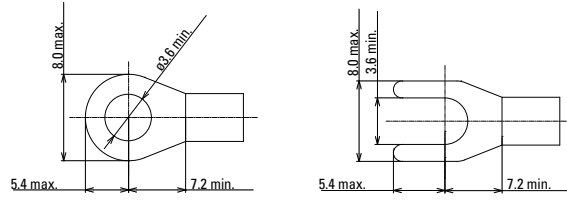
Recommended tightening torque: 0.6 - 0.9 N·m

Recommended ring or fork terminations for screw terminals.

Contact Terminals



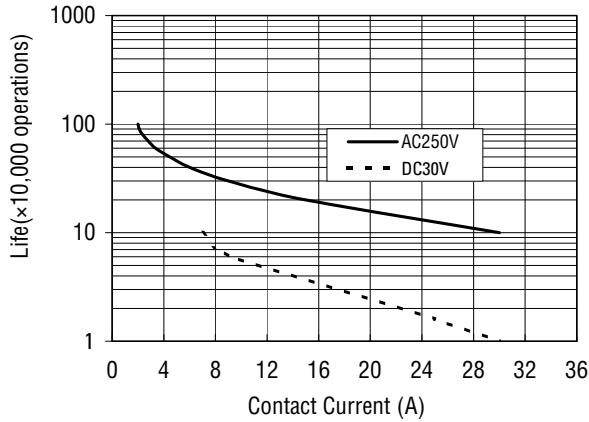
Coil Terminals



Electrical Life Curves

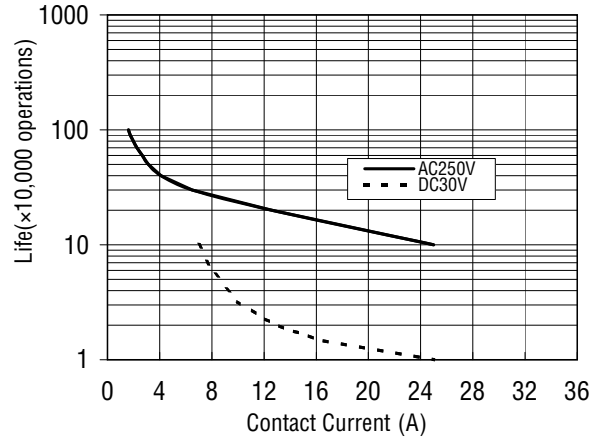
RL1

1 pole



RL2

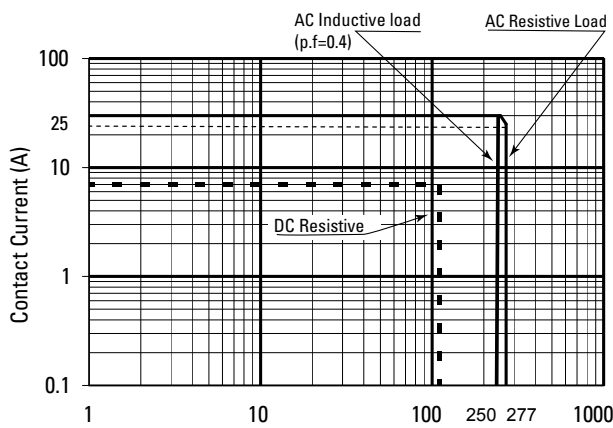
2 poles



Maximum Switching Capacity

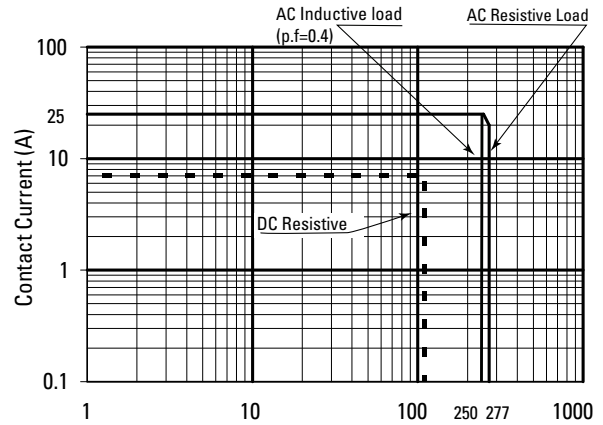
RL1

1 pole



RL2

2 poles



Switches & Pilot Lights

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers