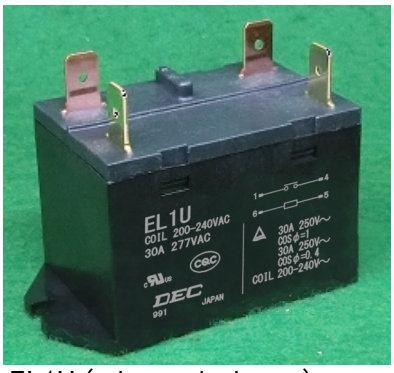
General purpose miniature power relay

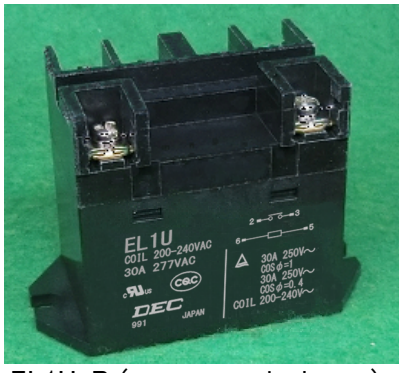
RoHS compliant

# EL series

Power relay series pursuing reliability and safety

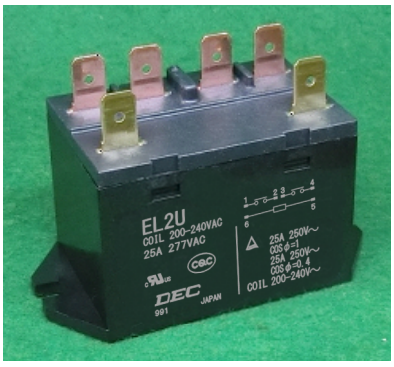



EL1U (tab terminal type)

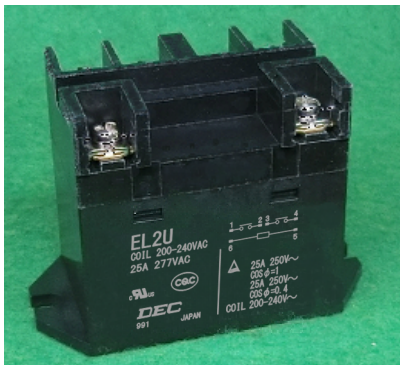



EL1U-B (screw terminal type)


EL1U (PCB terminal type)




EL2U (tab terminal type)




EL2U-B (screw terminal type)


EL2U (PCB terminal type)

## ■ Currently it is used for such purposes

- Packaged air conditioners, Large air conditioners such as commercial air conditioners, Refrigerated display cabinets
- Electric water heaters, Hot water supply equipment such as Eco Cute, Photovoltaic power generation control device
- Power supply for commercial equipment, Power supply for electric tools, Measuring instruments, Medical devices, Disaster prevention equipment
- Machine tools, Molding equipment, Welding machines, Packing machines, Food processing machines, Machinery for agriculture
- Uninterruptible Power Systems (UPS), Copiers power supply, Vending machines, Lighting control panel
- Various large household appliances, Large refrigerator, Large microwave ovens, Bathroom drier

DEC is a professional manufacturer of relays

DEC Daiichi Electric Co., Ltd.

https://www.j-dec.co.jp

General purpose miniature power relay that can be used for a wide range of applications from control to power.

# EL series

## ■ Features

- ○ It has been designed for controlling of high capacity use.
  1a contact 30A, 2a contact 25A.
- ○ Quick-connect, screw, and PCB terminals available.
- ○ AC/DC coil is prepared. No contact chattering for momentary voltage drops up to 50% of rated voltage.
- ○ AC-activated coil is wide range specification of AC 100V to 120V or AC 200V to 240V.
- ○ Primary-secondary insulation distance is 8mm and the contact spacing is 3mm or more, it is a safety design with excellent insulation performance
  "UL 94V-0" molding material is adopted for all insulating materials.

## ■ Model numbering system

EL □ □ □ — □ □ — □

| | |
|---|---|
| Rated coil voltage: Numeric part indication | AC (V): 24, 100/120, 200/240<br>DC (V): 12, 24 |
| Coil type | A: AC<br>D: DC |
| Number of contact poles | 1: 1 pole<br>2: 2 poles |
| Shape indication | F: Flange-mounting type (#250 tab terminals)<br>BF: Flange-mounting type (screw terminals)<br>O: PCB terminals |
| Contact configuration | (M): Make contacts |
| Notes | C: Has built-in capacitor type<br>(noise reduction products generated from relays: 20dB or less at noise level 500kHz or more) |

## ■ Safety standards

| | Contact rating | |
|---|---|---|
| | EL1U | EL2U |
| UL<br>(C-UL) | 30A 277V AC (General use) | 25A 277V AC (General use) |
| TUV | 30A ($\cos\phi$=1, $\cos\phi$=0.4) 250V AC | 25A ($\cos\phi$=1, $\cos\phi$=0.4) 250V AC<br>20A ($\cos\phi$=1) 480V AC |
| VDE | 30A ($\cos\phi$=1, $\cos\phi$=0.4) 250V AC | 25A ($\cos\phi$=1, $\cos\phi$=0.4) 250V AC |
| CQC | 30A 277V AC | 25A 277V AC |

| | |
|---|---|
| Electrical Appliances and Materials Safety Act | Conformable |

## ■ Coil ratings

| AC/DC \ Item: Voltage | Rated current (mA) (AC: 50Hz/60Hz) | Coil resistance (Ω) | Operate voltage (V) Ratio to rated voltage | Release voltage (V) Ratio to rated voltage | Maximum voltage (V) Ratio to rated voltage | Power consumption |
|---|---|---|---|---|---|---|
| AC 24 | 71.0 | | 80% max. | 15% min. | 110% | 1.7VA to 2.5VA |
| AC 100/120 | 17.0～20.4 | | | | | |
| AC 200/240 | 8.5～10.2 | | | | | |
| DC 12 | 160 | 75 | 80% max. | 10% min. | 110% | 1.9W |
| DC 24 | 79 | 303 | | | | |

● Notes:
1. Rated current and coil resistance are values at coil temperature of 20℃, with tolerance of +15%/-20% for AC rated current. Tolerance is ±10% for DC coil resistance.
2. Maximum voltage is the maximum value of the allowable voltage fluctuation range of the relay coil operating power supply with the ambient temperature at 20℃.
3. In the rated voltage of AC, "/" (for example, 100/120) is a range rating and can be used in this range of voltage. The current values in the table are shown as typical values at 100V and 200V.

General purpose miniature power relay that can be used for a wide range of applications from control to power.

# EL series

## ■ Ratings・Performance

| Specifications | Item | | | Performance | |
|---|---|---|---|---|---|
| | | | | EL1U | EL2U |
| Contact specification | Contact configuration | | | 1a | 2a |
| | Contact resistance | | | 50mΩ max. (at DC6V 1A) | |
| | Contact material | | | Ag alloy | |
| Ratings | Rated load (resistive load) | | | AC250V 30A | AC250V 25A |
| | Max. switching capacity (resistive load) | | | 7500VA | 6250VA |
| | Max. switching voltage | | | AC277V/DC30V | |
| | Max. switching current | | | 30A | 25A |
| Electrical capability | Insulation resistance | | | 100MΩ min. (at DC500V) | |
| | Dielectric strength | Between coil and contacts | | AC4000V 1 min | |
| | | Between open contacts | | AC2000V 1 min | |
| | | Between opposite polarity contacts | | — | AC2000V 1 min |
| | Impulse withstand voltage (between coil and contacts) | | | 10 000V min. (1.2×50μs) | |
| | Operate time (at rated voltage on, at 20℃) | | | 30ms max. (excluding contact bounce time) | |
| | Release time (at rated voltage off, at 20℃) | | | 30ms max. (excluding contact bounce time) | |
| Mechanical capability | Vibration resistance | Malfunction | | 10 to 55 to 10Hz (double amplitude 1.5mm) | |
| | | Destruction | | 10 to 55 to 10Hz (double amplitude 1.5mm) | |
| | Shock resistance | Malfunction | | 100m/s$^2$ | |
| | | Destruction | | 1000m/s$^2$ | |
| Life | Mechanical endurance (at 180 times/min) | | | 1 000 000 times min. | |
| | Electrical endurance (at 20 times/min) | | Resistive load | 100 000 times min. (AC250V 30A) | 100 000 times min. (AC250V 25A) |
| | | | Inductive load (cosϕ=0.4) | | |
| Conditions for operation | Ambient temperature | | | −25℃ to +60℃ (no freezing and condensing at low temperature) | |
| | Ambient humidity | | | 5% to 85%RH | |
| Mass | | | | Standard type: 90g to 93g<br>Screw terminal type: 128g to 133g | Standard type: 93g to 95g<br>Screw terminal type: 133g to 135g |

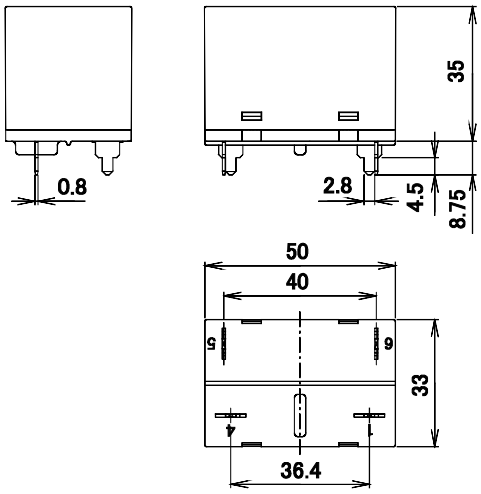
● Notes: The above is the initial value.

General purpose miniature power relay that can be used for a wide range of applications from control to power.

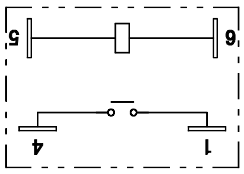
# EL series

EL1U-O
(1 pole PCB terminal type)

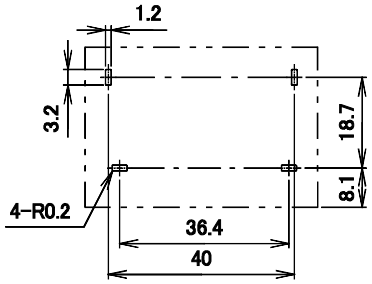
■ Dimensions




■ Schematics




■ PCB mounting holes (tolerances±0.1)

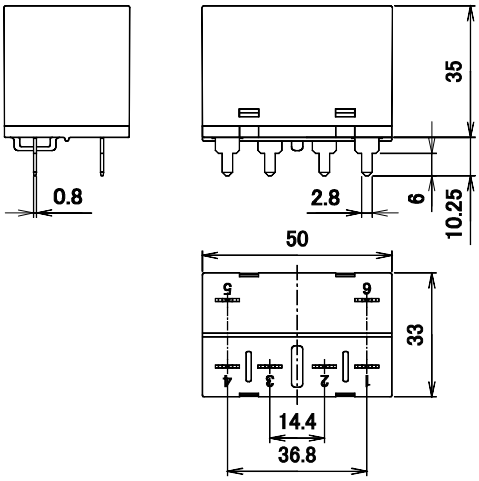



Unit: mm

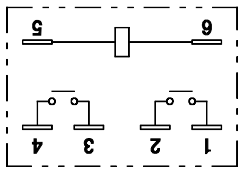
| TOLERANCES |
|---|
| ＜5mm: ±0.2 |
| ≧5mm: ±0.3 |

EL2U-O
(2 poles PCB terminal type)

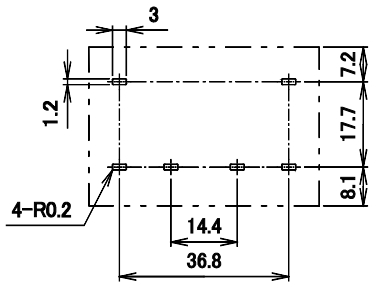
■ Dimensions




■ Schematics




■ PCB mounting holes (tolerances±0.1)

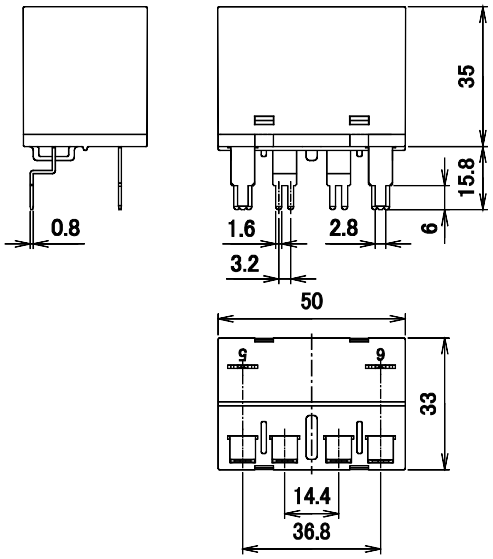



Unit: mm

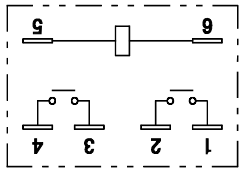
| TOLERANCES |
|---|
| ＜5mm: ±0.2 |
| ≧5mm: ±0.3 |

EL2U-O
(2 poles PCB terminal,
high capacity type)

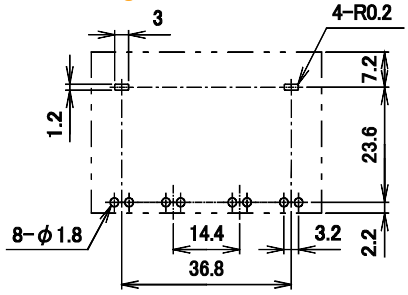
■ Dimensions




■ Schematics




■ PCB mounting holes (reference)




Unit: mm

| TOLERANCES |
|---|
| ＜5mm: ±0.2 |
| ≧5mm: ±0.3 |

DEC is a professional manufacturer of relays

DEC Daiichi Electric Co., Ltd.

https://www.j-dec.co.jp

General purpose miniature power relay that can be used for a wide range of applications from control to power.

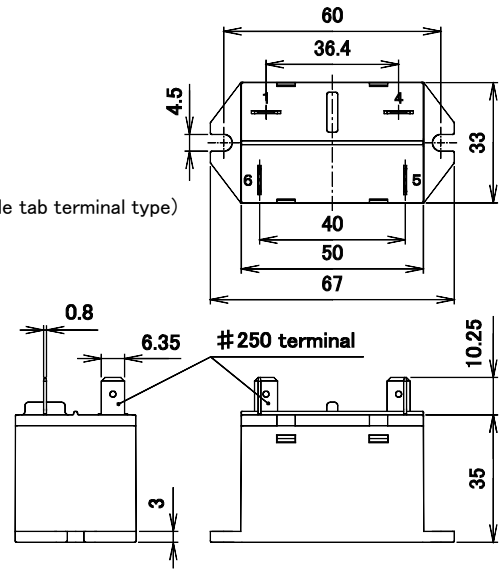
# EL series

## Dimensions

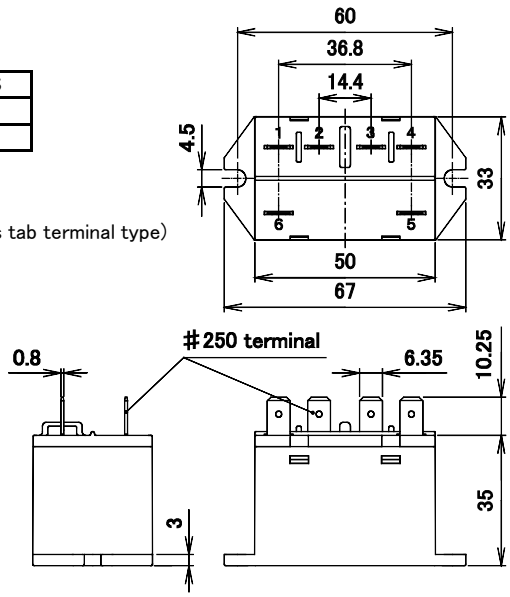
Unit: mm

| TOLERANCES |
| --- |
| ＜5mm: ±0.2 |
| ≧5mm: ±0.3 |

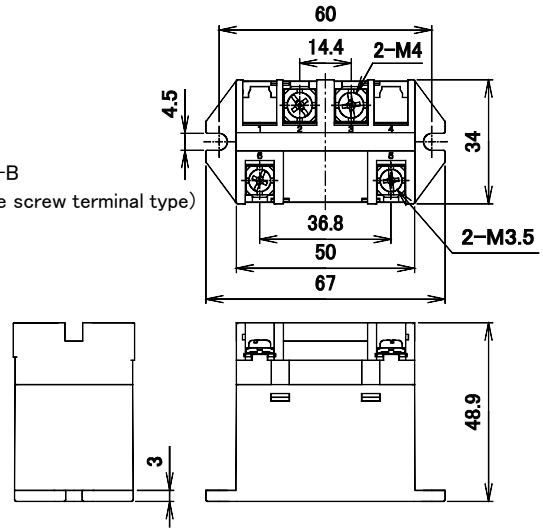
EL1U
(1 pole tab terminal type)



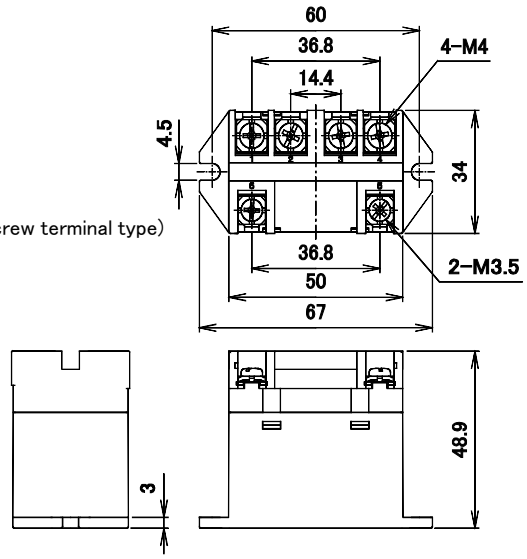

EL2U
(2 poles tab terminal type)




EL1U-B
(1 pole screw terminal type)

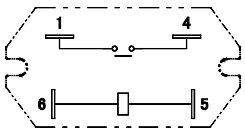



EL2U-B
(2 poles screw terminal type)

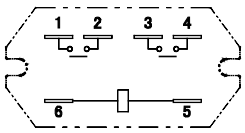



## Schematics

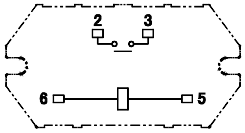
EL1U
(1 pole tab terminal type)



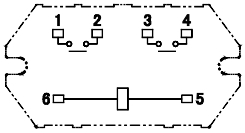

EL2U
(2 poles tab terminal type)



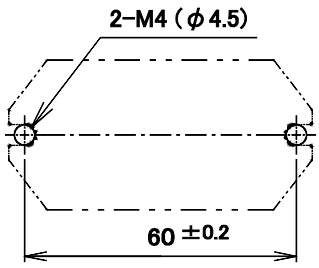

EL1U-B
(1 pole screw terminal type)




EL2U-B
(2 poles screw terminal type)




## Mounting holes (common for flange type)




Unit: mm

DEC is a professional manufacturer of relays

DEC Daiichi Electric Co., Ltd.

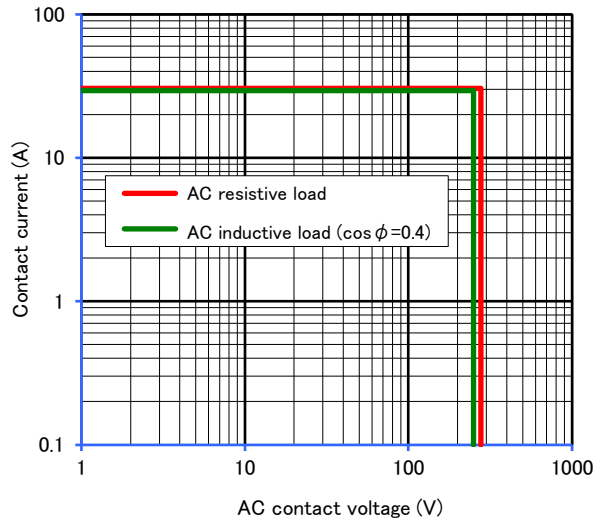
https://www.j-dec.co.jp

# EL series

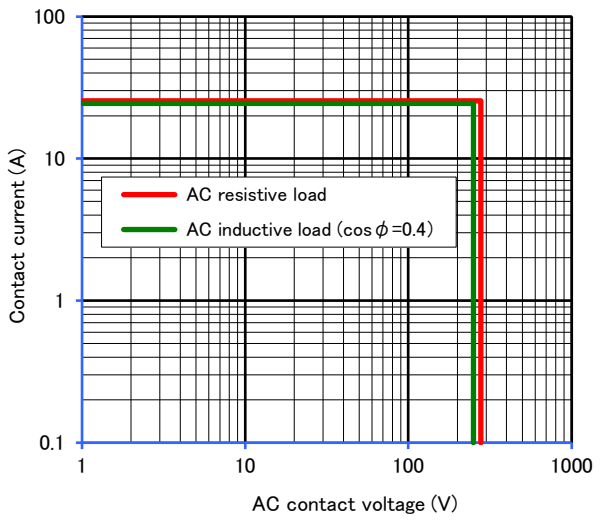
## Reference data

■ Maximum switching capacity

EL1U/EL1U-B

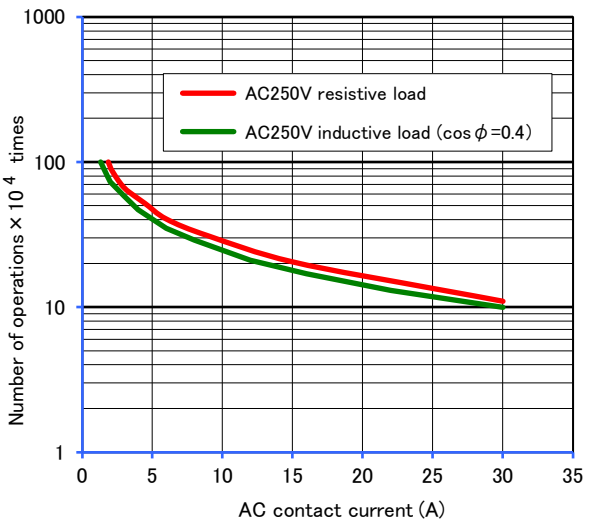



EL2U/EL2U-B

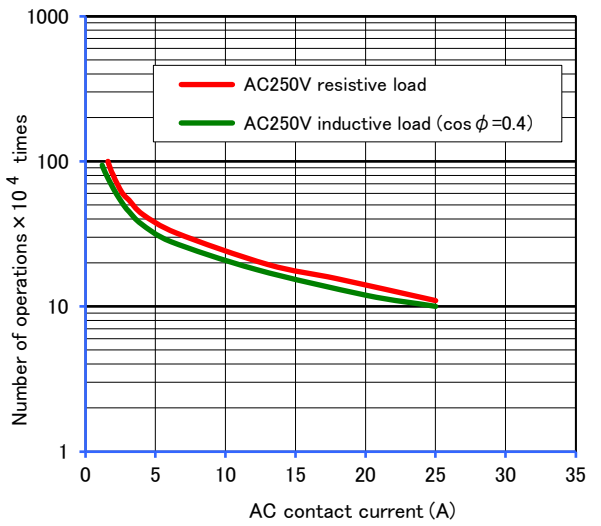



■ Durability curve

EL1U/EL1U-B




EL2U/EL2U-B






DEC is a professional manufacturer of relays

DEC Daiichi Electric Co., Ltd.

Head office 2-2, Noge 3-chome, Setagaya-ku, Tokyo 158-0092, Japan
Phone +81-3-3703-5421
Facsimile +81-3-3703-5426
U R L https://www.j-dec.co.jp E-Mail: sales@j-dec.co.jp

Agency

202205