

# DCNLB Series

## 60V DC Max Contactor Relays



DCNLB400NB

### Description

Designed for the electric control systems of communication power supplies, uninterruptible power supplies (UPS), engineering machines, and more, the DCNLB Series 48V High-Current DC Contactor Relay is a normally closed relay that is available in single-coil and double-coil configurations. The high-current contactor relay is also available with coil voltage ratings of 24V, 48V, and 60V to suit various stationary applications.

### Web Resources

Download 2D print, installation guide and technical resources at: [littelfuse.com/DCNLB](https://littelfuse.com/DCNLB)

### Specifications

|                                       |               |
|---------------------------------------|---------------|
| <b>Max Voltage Rating (V DC):</b>     | 60            |
| <b>Current Rating Continuous (A):</b> | 100, 200, 400 |
| <b>Coil Voltage Rating (V DC):</b>    | 24, 48, 60    |
| <b>Ingress Protection:</b>            | IP 40         |
| <b>Operating Temperature (°C):</b>    | -40 to +85    |

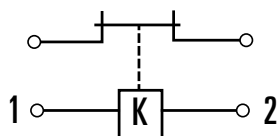
### Applications

- Communication Power Supplies
- UPS

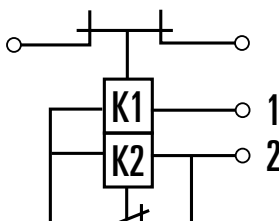
### Features and Benefits

- Up to 400A continuous current rating for high-current contact switching
- Able to make and break up to 1600A
- Main contacts are rated for 48V (typical) and 60V (max)
- Coil voltage options include 24V, 48V, and 60V
- Normally closed, monostable relay design
- Available in single-coil and double-coil configurations
- Non-polarized contacts

### Electrical Diagram



Single Coil



Dual Coil

# DCNLB Series

## 60V DC Max Contactor Relays

### Ordering Information

| PART NUMBER                     | CONTINUOUS CURRENT (A) | VOLTAGE RATING        |                    | MOUNTING   | COIL VOLTAGE (V DC) | COIL TYPE | AUX CONTACT | POLARIZED | 2D PRINT          |
|---------------------------------|------------------------|-----------------------|--------------------|------------|---------------------|-----------|-------------|-----------|-------------------|
|                                 |                        | SYSTEM NOMINAL (V DC) | MAX VOLTAGE (V DC) |            |                     |           |             |           |                   |
| <a href="#">DCNLB100NB48</a>    | 100                    | 48                    | 60                 | SIDE MOUNT | 48                  | Single    | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB200NB24</a>    | 200                    | 48                    | 60                 | SIDE MOUNT | 24                  | Single    | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB200NB48</a>    | 200                    | 48                    | 60                 | SIDE MOUNT | 48                  | Single    | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB200NB48-01</a> | 200                    | 48                    | 60                 | SIDE MOUNT | 48                  | Dual      | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB200NB60</a>    | 200                    | 48                    | 60                 | SIDE MOUNT | 60                  | Single    | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB400NB24</a>    | 400                    | 48                    | 60                 | SIDE MOUNT | 24                  | Dual      | No          | No        | <a href="#">↓</a> |
| <a href="#">DCNLB400NB48</a>    | 400                    | 48                    | 60                 | SIDE MOUNT | 48                  | Dual      | No          | No        | <a href="#">↓</a> |

### Performance Data

| MAIN CONTACT                 |                              |
|------------------------------|------------------------------|
| Contact Arrangement          | SPST NC                      |
| Rated Operating Voltage      | 48V DC                       |
| Max Short Circuit Current    | DCNLB100NB<br>400A @ 48V DC  |
|                              | DCNLB200NB<br>800A @ 48V DC  |
|                              | DCNLB400NB<br>1600A @ 48V DC |
| Dielectric Withstand Voltage | 1000V AC                     |
| Insulation Resistance        | ≥50MΩ @ 500VDC               |
| Max Voltage Drop             | ≤ 50mV @ 100A                |

| PART NUMBER     | COIL VOLTAGE (V DC) | COIL TYPE | PICKUP VOLTAGE @ 25°C (V DC MAX) | DROPOUT VOLTAGE @ 25°C (V DC MIN) | HOLD CURRENT (A) | COIL WATTS @ 25°C (W) |      |
|-----------------|---------------------|-----------|----------------------------------|-----------------------------------|------------------|-----------------------|------|
|                 |                     |           |                                  |                                   |                  | Start Up              | Hold |
| DCNLB100NB48    | 48                  | Single    | 30                               | 4                                 | 0.23             | 11                    | -    |
| DCNLB200NB24    | 24                  | Single    | 15                               | 2                                 | 0.4              | 10                    | -    |
| DCNLB200NB48    | 48                  | Single    | 30                               | 4                                 | 0.26             | 12                    | -    |
| DCNLB200NB48-01 | 48                  | Dual      | 30                               | 4                                 | 0.12             | 230                   | 8    |
| DCNLB200NB60    | 60                  | Single    | 37                               | 5                                 | 0.24             | 14.5                  | -    |
| DCNLB400NB24    | 24                  | Dual      | 15                               | 2                                 | 0.23             | 180                   | 8    |
| DCNLB400NB48    | 48                  | Dual      | 30                               | 4                                 | 0.13             | 180                   | 8    |

| LIFE            |         |
|-----------------|---------|
| Electrical Life | 3,000   |
| Mechanical Life | 100,000 |

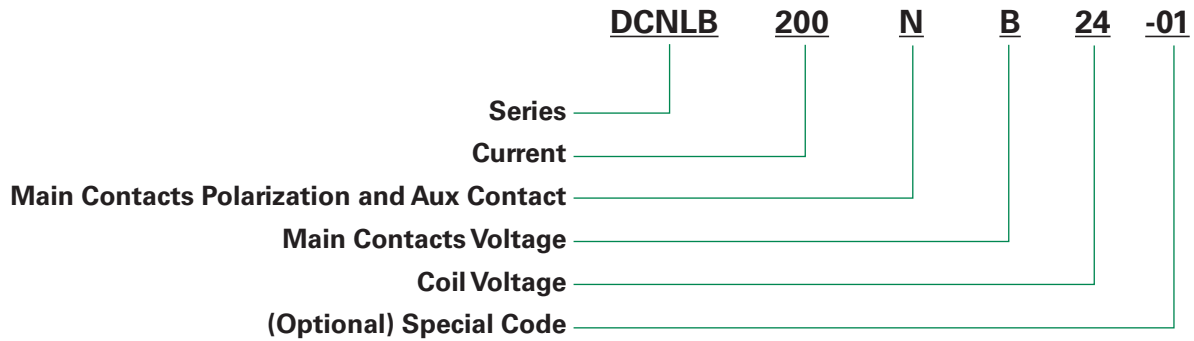
| OPERATE / RELEASE TIME |                               |    |
|------------------------|-------------------------------|----|
| Release (ms)           | DCNLB100NB<br>DCNLB200NB      | 50 |
|                        | DCNLB200NB48-01<br>DCNLB400NB | 30 |

| ENVIRONMENTAL DATA            |            |                                                                                       |
|-------------------------------|------------|---------------------------------------------------------------------------------------|
| Shock                         |            | 3G                                                                                    |
| Vibration                     |            | 1~50Hz (freq.1~10Hz, amp;.25/f <sup>2</sup> ; freq.10~50Hz, ampl.250/f <sup>2</sup> ) |
| Operating Ambient Temperature |            | -40°C~+85°C                                                                           |
| Weight (g)                    | DCNLB100NB | 193.3                                                                                 |
|                               | DCNLB200NB | 535                                                                                   |
|                               | DCNLB400NB | 764                                                                                   |

# DCNLB Series

## 60V DC Max Contactor Relays

### Part Number System



| MAIN CONTACTS POLARIZATION AND AUX CONTACT |            |                      |
|--------------------------------------------|------------|----------------------|
|                                            | POLARIZED? | INCLUDE AUX CONTACT? |
| N:                                         | No         | No                   |

| MAIN CONTACTS VOLTAGE RATING |    |      |
|------------------------------|----|------|
| B:                           | 48 | V DC |

| COIL VOLTAGE |    |      |
|--------------|----|------|
| 24:          | 24 | V DC |
| 48:          | 48 | V DC |
| 60:          | 60 | V DC |

# DCNLB Series

## 60V DC Max Contactor Relays

### Application Notes & Definitions

- Be sure to use a washer to prevent screws from loosening. Tighten the screw so that the torque is in the range specified below. Exceeding the maximum torque can lead to product rupture.

| PRODUCT SERIES  | PRODUCT MODEL                                | CONTACT TERMINAL |                  | COIL TERMINAL           |                  | MOUNTING         |                     |
|-----------------|----------------------------------------------|------------------|------------------|-------------------------|------------------|------------------|---------------------|
|                 |                                              | HOLE OR BOLT     | REFERENCE TORQUE | HOLE/BOLT/WIRE/TERMINAL | REFERENCE TORQUE | REFERENCE TORQUE | REFERENCE BOLT SIZE |
| DCNLB100NB48    | DCNLB100NB48                                 | Bolt: M8         | 9~11N.m          | Bolt: M4                | 1.7~2.5N.m       | 4~5N.m           | M5                  |
| DCNLB200NB      | DCNLB200NB24<br>DCNLB200NB48<br>DCNLB200NB60 |                  |                  |                         |                  |                  |                     |
| DCNLB200NB48-01 | DCNLB200NB48-01                              |                  |                  |                         |                  |                  |                     |
| DCNLB400NB      | DCNLB400NB24<br>DCNLB400NB48                 | Bolt: M10        | 30.8-33N.m       |                         |                  | 6.8-7.8N.m       | M6                  |

- Please refer to the drawing for connection polarity.
- Do not use dropped products.
- Avoid installing the product in a strong magnetic field (Close to the transformer or magnet), or near an object with heat radiation.
- Electrical life  
Please use under load capability and life cycle so as not to cause a function failure. (Please also treat the contactor as a product with specified life and replace it when necessary). It is possible to make parts burn around the contactor once operating failure happens. So it is necessary to take layout into account to make sure power shall be cut off within 1 second.
- Do not let particle and oil stain on the main terminal with which the load shall make a reliable contact or it will cause a lot of heat.