

DCNLH Series

60V DC and 110V DC MAX Contactor Relays



DCNLH200

Description

The DCNLH magnetically latching DC Contactor Relay is ideal for high-current electric control systems of communication power supplies, forklifts, uninterruptible power supplies (UPS), machinery, and more.

This magnetic latching, bistable relay is available with coil voltages of 12V, 24V, 48V or 60V to meet the requirements of various applications.

Web Resources

Download 2D print, installation guide and technical resources at: littelfuse.com/DCNLH

Specifications

| | |
|---------------------------------------|----------------|
| Max Voltage Rating (V DC): | 60, 110 |
| Current Rating Continuous (A): | 125, 200 |
| Coil Voltage Rating (V DC): | 12, 24, 48, 60 |
| Operating Temperature (°C): | -40 to +85 |

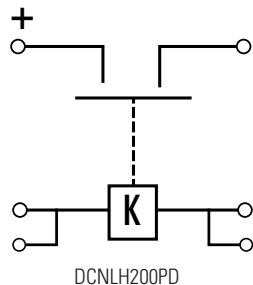
Applications

- Telecom and Datacom Power Supplies
- Material Handling
- Industrial Control Equipment

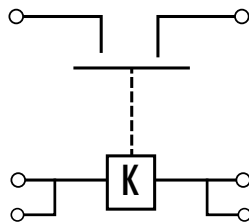
Features and Benefits

- Up to 200A continuous current rating for high-current contact switching
- Up to 800A make break rating
- Main contacts are rated for 48V and 96V (typical)
- Coil voltage options include 12V, 24V, 48V. and 60V
- Magnetic latching, bistable
- Robust Standard Industrial Footprint

Electrical Diagram



DCNLH200PD



DCNLH125NB \ DCNLH200NB

Note: Product coil is activated by positive and negative pulse, $200\text{ms} \leq t \leq 1\text{s}$, square pulse. Long time continuous energizing is not allowed. Positive pulse makes the contact close while negative pulse makes the contact open. After the activation, the permanent magnet in product keeps the state of the contact.

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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) | | | | | | |
| DCNLH125NB60 | 125 | 48 | 60 | SIDE MOUNT | 60 | Single | No | No | ↓ |
| DCNLH200NB12 | 200 | 48 | 60 | SIDE MOUNT | 12 | Single | No | No | ↓ |
| DCNLH200NB24 | 200 | 48 | 60 | SIDE MOUNT | 24 | Single | No | No | ↓ |
| DCNLH200NB48 | 200 | 48 | 60 | SIDE MOUNT | 48 | Single | No | No | ↓ |
| DCNLH200PD12 | 200 | 96 | 110 | SIDE MOUNT | 12 | Single | No | Yes | ↓ |
| DCNLH200PD24 | 200 | 96 | 110 | SIDE MOUNT | 24 | Single | No | Yes | ↓ |
| DCNLH200PD48 | 200 | 96 | 110 | SIDE MOUNT | 48 | Single | No | Yes | ↓ |

Performance Data

| MAIN CONTACT | | |
|------------------------------|-------------------|-----------------|
| Contact Arrangement | MAGNETIC LATCHING | |
| Rated Operating Voltage | DCNLH125 | 48V DC |
| | DCNLH200 | 48V DC / 96V DC |
| Max Short Circuit Current | DCNLH125 | 500A @ 48V DC |
| | DCNLH200 | 800A @ 48V DC |
| Dielectric Withstand Voltage | 1000V AC | |
| Insulation Resistance | DCNLH125-200 | ≥50MΩ @ 500V DC |
| Max Voltage Drop | DCNLH125 | ≤80mV @ 100 A |
| | DCNLH200 | ≤50mV @ 100A |

| COIL DATA | | | | |
|-----------------------------------|--------------|------|------|-------|
| Voltage Rating (V DC) | 12 | 24 | 48 | 60 |
| Pickup Voltage @ 25°C (V DC MAX) | 8.4 | 16.8 | 33.6 | 12-45 |
| Dropout Voltage @ 25°C (V DC MIN) | 8.4 | 16.8 | 33.6 | 12-45 |
| Hold Current (A) | - | - | - | - |
| | DCNLH125NB60 | 13 | | |
| Coil Watts @ 25°C (W) | DCNLH200NB12 | 48 | | |
| | DCNLH200PD12 | 48 | | |
| | DCNLH200PD24 | 29 | | |
| | DCNLH200NB24 | 29 | | |
| | DCNLH200NB48 | 27 | | |
| | DCNLH200PD48 | 27 | | |

| LIFE | |
|-----------------|---------|
| Electrical Life | 6,000 |
| Mechanical Life | 100,000 |

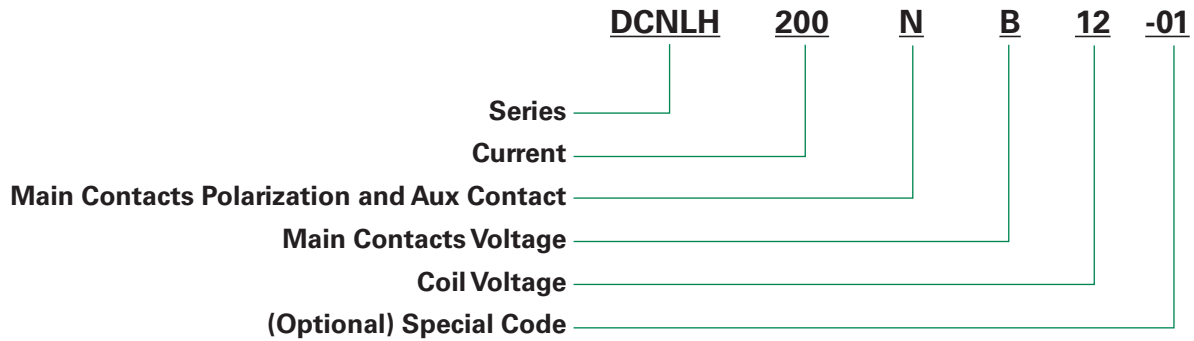
| OPERATE / RELEASE TIME | | |
|------------------------|----------|----|
| Close (ms) | DCNLH125 | 30 |
| | DCNLH200 | 50 |
| Release (ms) | DCNLH125 | 30 |
| | DCNLH200 | 50 |

| ENVIRONMENTAL DATA | | |
|-------------------------------|--|-------|
| Shock | 3G | |
| Vibration | 1~50Hz (freq.1~10Hz, amp;.25/f ² ; freq.10~50Hz, ampl.250/f ²) | |
| Operating Ambient Temperature | -40°C~+85°C | |
| Weight (g) | DCNLH125 | 375 |
| | DCNLH200 | 675 |
| | DCNLH400 | 517.4 |

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Part Number System



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

| MAIN CONTACTS VOLTAGE RATING | | |
|------------------------------|----|------|
| B: | 48 | V DC |
| D: | 96 | V DC |

| COIL VOLTAGE | | |
|--------------|----|------|
| 12: | 12 | V DC |
| 24: | 24 | V DC |
| 48: | 48 | V DC |
| 60: | 60 | V DC |

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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 BOLT SIZE | REFERENCE TORQUE |
| DCNLH200 | DCNLH200NB12 DCNLH200NB24 DCNLH200NB48 DCNLH200PD12 DCNLH200PD24 DCNLH200PD48 | Bolt: M8 | 8-9N.m | Terminal | / | M5 Screws | 4-5N.m |
| | 7-10N.m | | 1.2-1.7N.m | | | | |
| DCNLH125NB60 | DCNLH125NA60 | | | | | | |

- 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.