

# 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](http://littelfuse.com/DCNLH)

## Specifications

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

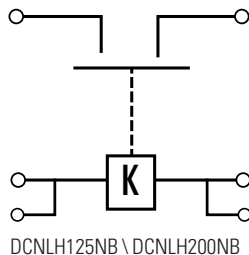
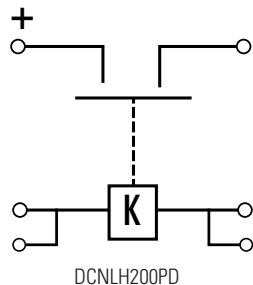
## Applications

- 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



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)						
<a href="#">DCNLH125NB60</a>	125	48	60	SIDE MOUNT	60	Single	No	No	<a href="#">↓</a>
<a href="#">DCNLH200NB12</a>	200	48	60	SIDE MOUNT	12	Single	No	No	<a href="#">↓</a>
<a href="#">DCNLH200NB24</a>	200	48	60	SIDE MOUNT	24	Single	No	No	<a href="#">↓</a>
<a href="#">DCNLH200NB48</a>	200	48	60	SIDE MOUNT	48	Single	No	No	<a href="#">↓</a>
<a href="#">DCNLH200PD12</a>	200	96	110	SIDE MOUNT	12	Single	No	Yes	<a href="#">↓</a>
<a href="#">DCNLH200PD24</a>	200	96	110	SIDE MOUNT	24	Single	No	Yes	<a href="#">↓</a>
<a href="#">DCNLH200PD48</a>	200	96	110	SIDE MOUNT	48	Single	No	Yes	<a href="#">↓</a>

### 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

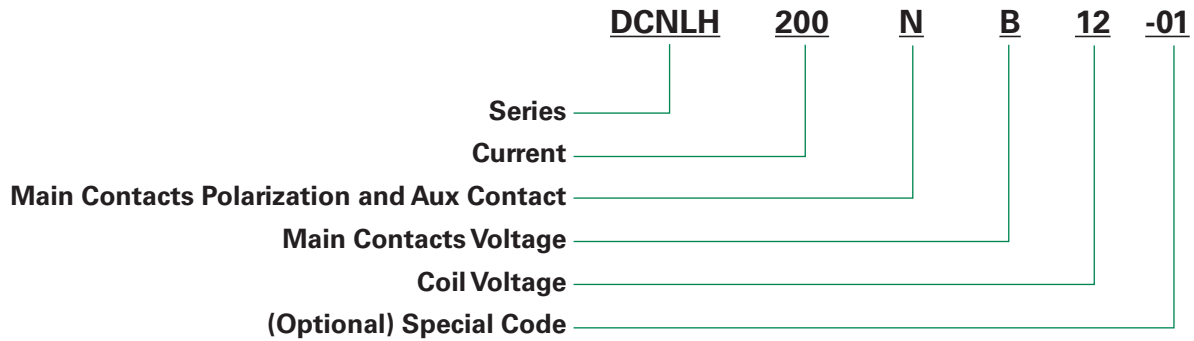
OPERATE / RELEASE TIME		
Close (ms)	DCNLH125	30
	DCNLH200	50
Release (ms)	DCNLH125	30
	DCNLH200	50

ENVIRONMENTAL DATA		
Shock	3G	
Vibration	1~50Hz (freq.1~10Hz, amp;.25/f <sup>2</sup> ; freq.10~50Hz, ampl.250/f <sup>2</sup> )	
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.