

DCNHF150 Series

1000V DC Max Contactor Relays



Description

The DCNHF150 Series high-voltage DC contactor is designed for electric vehicle and industrial applications, including battery power supply, charging systems, motor control, circuit insulation, circuit protection, and safety devices. Its compact design helps minimize operational noise, while the corrosion-resistant resin housing ensures reliable performance in harsh automotive environments.

Sealed, non-polarized contacts are designed to accommodate various system polarities and prevent electrical arc leakage for maximum safety. The SPST-NO circuitry supports 150A continuous current and up to 1000V maximum voltage.

Available with 12V or 24V coil ratings and installable in any orientation, the DCNHF150 Series contactor delivers flexible, high-performance DC switching for demanding applications.

Web Resources

Download 2D print, installation guide and technical resources at: littelfuse.com/DCNHF150

Ordering Information

PART NUMBER	RATED CURRENT(A)	POLARIZED	AUX. CONTACT	COIL VOLTAGE(V DC)	MOUNTING	POWER CONNECTION
DCNHF150NG12-F	150	No	No	12	Bottom	Internal Thread
DCNHF150NG24-F	150	No	No	24	Bottom	Internal Thread

Specifications

Rating Continuous Current:	150A
Contact Max. Voltage:	1000V DC
Contact Circuitry:	SPST NO
Ingress Protection:	Contact IP67
Contacts Material:	Copper Alloy
Terminals:	M6 Copper
Contact Torque:	M6 Bolt: 8~10N·m
Housing:	Nylon UL 94 V-0
Coil Connector:	Yazaki 7283-1020 (compatible option)
Coil Type:	Single
Mounting Method:	M5 Bolt
Mounting Torque:	M5 Bolt: 3~4N·m
Normal Position:	Any Mounting Position
Approvals:	
CE:	EN 60947-4-1,2018

Applications

- Battery Electric Vehicles
- Hybrid Electric Vehicles
- Material Handling
- Electric Maintenance and Transport Vehicles
- Industrial applications

Features and Benefits

- High voltage (1000V) contactor for EV applications
- Compact structure, helping reduce noise when turned on
- Resin housing provides corrosion resistance in harsh automotive environments
- Sealed contacts with no leakage of electrical arc for maximum safety
- No mounting orientation restrictions
- Ceramic arc chamber enables higher contact voltage capability
- RoHS and REACH compliant

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Performance Data

MAIN CONTACT	
Contact Arrangement	1 Form, SPST-NO
Operating Voltage	12-1000V DC
Continuous Current	150A
Max Short Circuit	2500A, 1s
Max Breaking Limit	2000A@450V DC, 1cycle
Dielectric Withstanding Voltage	Between open contacts: 3000V AC, ≤1mA,1min Between contact and coil: 4000V AC, ≤1mA,1min
Insulation Resistance	Min. 100 MΩ@1000V DC
Contact Voltage Drop	≤80mV@150A

COIL DATA		
Rating Voltage	12V DC	24V DC
Voltage (Max)	14.4V DC	28.8V DC
Pickup Voltage (25°C)	≤9V DC	≤18V DC
Release Voltage (25°C)	≥1V DC	≥2V DC
Rating Power (25°C)	6.5W	6.5W

Note: The coil of the product may operate at maximum voltage for a maximum duration of 30 minutes.

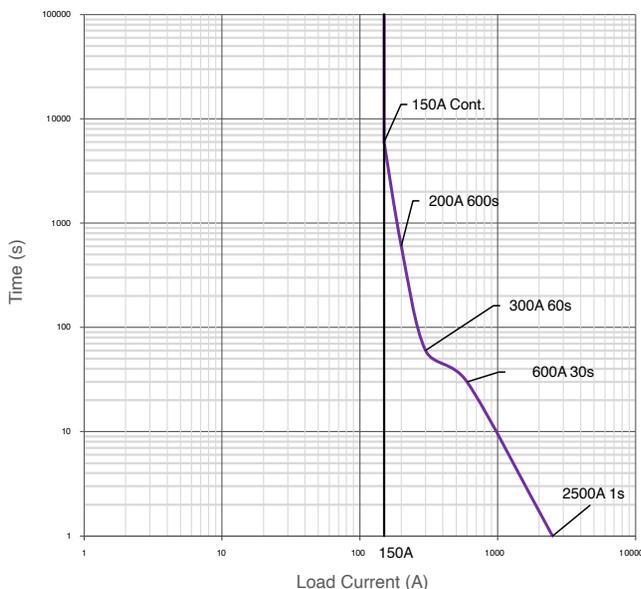
LIFE	
Electrical Life	3000cycles, 150A@450V DC 500cycles, 150A@750V DC 300cycles, 100A@1000V DC
Mechanical Life	200,000 cycles

Note: Electrical life rating is based on resistive load with 27μH maximum inductance in circuit. Because your application may be different, we suggest you test the contactor in your circuit to verify life is as required.

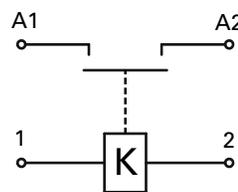
OPERATE / RELEASE TIME	
Pickup Time (includes bounce)	≤30ms
Release Time	≤10ms

ENVIRONMENTAL DATA	
Shock, 11ms ½ Sine, Operating	20g, Peak
Vibration, Sine	10-2000Hz, 5g, Peak
Operating Temperature	-40°C~+85°C
Humidity	5%-85%RH
Weight	320g

Carry Current vs Time at 65°C Chart



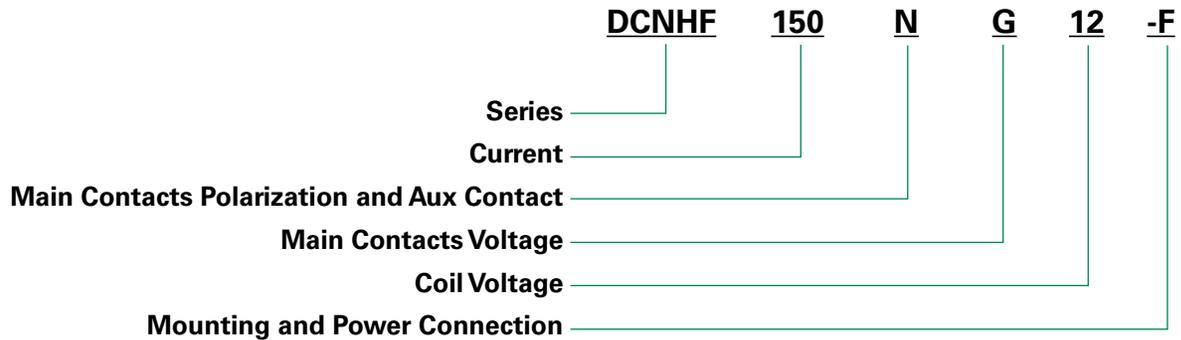
Electrical Diagram



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Part Number System



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

MAIN CONTACT TEST VOLTAGE		
G:	750	V DC

COIL VOLTAGE		
12:	12	V DC
24:	24	V DC

MOUNTING		POWER CONNECTION
F:	Bottom	Internal Thread

- Be sure to use washer to prevent screws from loosening, all the terminals or copper bar must be in direct contact with the contactor's terminals. Screw tightening torque is specified below. Exceeding the maximum torque can lead to product failure.
 - Contact torque: in (8 ~10) N.m.
 - Mounting torque: in (3~4) N.m.
- Contact terminals are non-polarized, Coil terminals are non-polarized, so refer to drawing during connecting. We suggest using a varistor rather than diode as a surge protector.
- Do not use if dropped.
- Avoid installing in a strong magnetic field (close to a transformer or magnet), or near a heat source.
- Electrical life

Use per load capability and life cycle limits so as not to cause a function failure (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 occurs. It is necessary to take layout into account and to make sure power shall be cut off within 1 second.
- Lifetime of internal gas diffusion

The contactor is sealed and filled with gas, lifetime of gas diffusion is determined by temperature in contact chamber (ambient temperature + temperature generated by contact operation). Operate only in an ambient temperature from -40°C to +85°C.
- Drive power must be greater than coil power or it will reduce performance capability.
- Avoid debris or oil contamination on the main terminals to optimize contact and avoid excess heat generation.
- Applications with capacitors will require a pre-charge circuit.