

## Features

### HIGH CURRENT CARRY AND HIGH VOLTAGE

Inert gas filled arc chamber suitable for high voltage switching

### COMPACT STRUCTURE, LOW NOISE

Small, low-profile design with low noise while carrying or switching loads

### SAFE FOR EXPLOSIVE ENVIRONMENTS

No arc leakage due to a hermetically sealed design

### HIGH RELIABILITY DESIGN

Hermetic sealing creates a stable environment for high voltage switching

### NO SPECIFIC MOUNTING ARRANGEMENT

Mountable in any orientation without reduction of performance

### VARIOUS APPLICATIONS

Battery disconnect, EV charging, energy storage systems, photovoltaics, power control, circuit protection and much more

## Sealing Type: Epoxy

- ✓ Compact design, optional auxiliary contacts available
- ✓ Bi-directional options available



## Certification Information

1. Meet RoHS (2011/65/EU)
2. CE certified
3. UL approved

## Nomenclature

ALEV50

B

A

### Series code:

"ALEV50" = ALEV50

### Coil Voltage Code:

"B" = 12VDC

"C" = 24VDC

"E" = 48VDC

### Options (applied in this order):

Blank = Std. Options (Bottom Mount, Without Aux)

"A" = With Aux. Contact (SPST-NO)

"S" = Side Mount Version

"N" = Non-Polar Load Terminals

# High Voltage DC Contactor

## ALEV50 Series

### 50A+/900VDC



#### Product Data Sheet

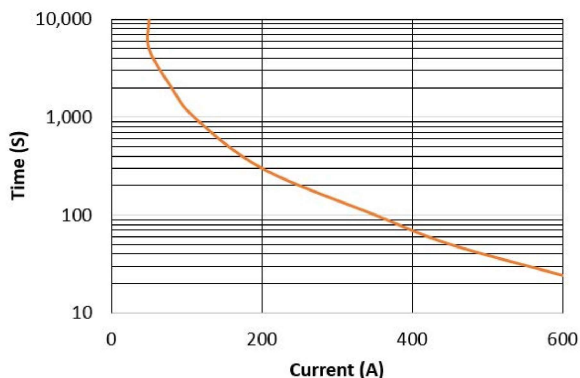
#### MAIN CONTACT

Contact Arrangement	1 Form X (SPST-NO, DM)	
Rated Operating Voltage	12-900 VDC	
Continuous (Carry) Current	50A*1	
Short Term Current	100A (3 minutes) *2	
Max. Short Circuit Current	1,250A (1/2 cycle, 60Hz)	
Dielectric Withstanding Voltage (initial)	Between Open Contacts	5,600Vrms/8,000VDC
	Between Contacts to Coil	2,200Vrms/4,000VDC
Insulation Resistance (initial)	Terminal to Terminal	New: Min 100M $\Omega$ @500VDC End of Life: Min 50M $\Omega$ @500VDC
	Terminals to Coil	
Voltage Drop (@50A)	$\leq 60$ mV	

#### EXPECTED LIFE

(make/break) 50A @+450VDC	8,000 Cycles
(make/break) 50A @+750VDC	2,000 Cycles
Mechanical Life	200,000 Cycles

### Current Carry Curve



Note:

1. Do not meet dielectric & IR after the test.
2. ON:OFF= 1s:9s.
3. The ambient environment of application should not cause any dewing or icing inside the relay. Otherwise, the relay may fail to work consequently.

#### OPERATE / RELEASE TIME

Operate Time Close (includes bounce)	25ms, Max.
Release Time	10ms, Max.

#### ENVIRONMENTAL DATA

Shock	Functional	196m/s <sup>2</sup> Sine half-wave pulse
	Destructive	490m/s <sup>2</sup> Sine half-wave pulse
Operating Temperature		-40 to +85°C
Vibration, Sine, Peak, 20G		80 to 2,000Hz
Weight		0.42Lb (0.19kg)

#### COIL DATA

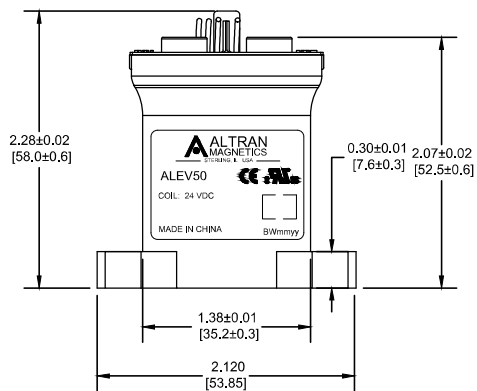
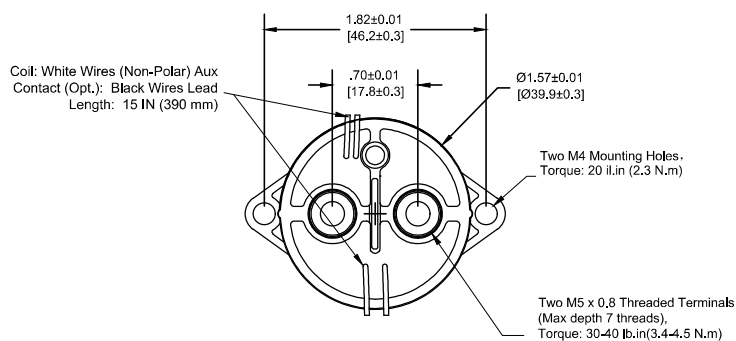
Nominal Voltage	12VDC	24VDC	48VDC
Voltage (Max.)	16VDC	28VDC	52VDC
Pickup voltage (20 °C)	8VDC	16VDC	33VDC
Dropout voltage (20 °C)	1.2VDC	2.4VDC	4.8VDC
Coil current (20°C, voltage rating, nominal)	461mA	250mA	122mA
Coil wattage (20°C, voltage rating, nominal)	5.5W	6W	6W
Max pickup voltage (85°C)	9.6VDC	19.2VDC	38.4VDC
Rated coil resistance $\pm 5\%$ (20°C)	26 $\Omega$	96 $\Omega$	392 $\Omega$

#### AUX. CONTACT

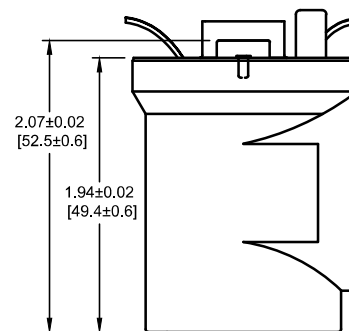
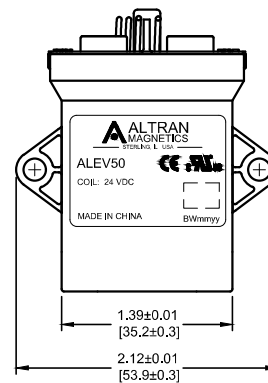
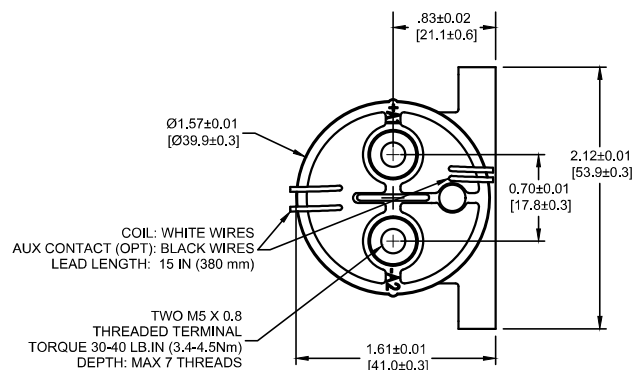
Aux. Contact Arrangement	1 Form A
Aux. Contact/Current Max.	2A@30VDC/3A@125VAC
Aux. Contact Current Min.	100mA@8V
Aux. Contact Resistance Max.	0.417 $\Omega$ @30VDC 0.150 $\Omega$ @125VAC

## Outline Dimensions : inches (mm)

### A. Bottom mount:



### B. Side mount:



**\*Notes:**

1. The wire size is 22 AWG.
2. Polarity sensitive is marked with "+A1", "-A2"; Non-polar type is without mark

## Application Notes

1. Be sure to use split washers to prevent nuts from loosening; all the terminals or conductors 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: 30 - 40 lb.in (3.4 - 4.5 N.m)
  - Mounting torque: 20 lb. in (2.3 N.m)
2. Contact terminals are polarized, so refer to the drawing during connecting. We suggest using a varistor rather than a diode as a surge protector.
3. Do not use if dropped.  
Avoid installing in a strong magnetic field (close to a transformer or magnet) or near a heat source.
4. 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 required to consider the layout and ensure power shall be cut off within 1 second.
5. A lifetime of internal gas diffusion:  
The contactor is sealed and filled with gas, and the lifetime of gas diffusion is determined by the temperature in the contact chamber (ambient temperature + temperature generated by contact operation). Operate only in an ambient temperature from -40 to +85 °C.
6. Coil drive power must be greater than coil power, or it will reduce performance capability.
7. Avoid debris or oil contamination on the main terminals to optimize contact and avoid excess heat generation.