High Voltage DC Contactor
ALEV100 Series
100A+/900VDC

ALTRAN MAGNETICS

Product Data Sheet

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

COIL ECONOMIZER
Economized coil for low power consumption

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

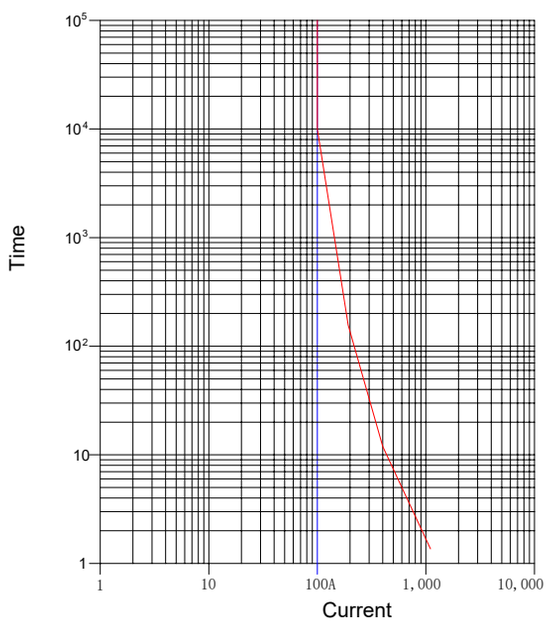
Certification Information

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

Sealing Type: Epoxy/Resin

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

Current Carry Curve



Nomenclature

ALEV100	B	N

Series code:
"ALEV100" = ALEV100

Coil Voltage Code:
"B" = 12VDC
"C" = 24VDC
"E" = 48VDC

Options (applied in this order):
Blank = Std. Options (Bottom Mount, Without Aux, Contact & Polarized Load Terminals)
"A" = With Aux. Contact (SPST-NO)
"S" = Side Mount Version
"N" = Non-Polar Load Terminals

Rev H - 27-Mar-2023

MAIN CONTACT		
Contact Arrangement		1 Form X (SPST-NO)
Rated Operating Voltage		12-900 VDC
Continuous (Carry) Current		100A*1
Short Time Over current		200A (3 minutes) *2
Short Circuit Current		1,250A (1/2 cycle, 60Hz)
Dielectric Withstanding Voltage (initial)	Between Open Contacts	2500VDC, ≤1mA
	Between Contacts to Coil	2,200Vrms, ≤1mA
Insulation Resistance (Initial)	Terminal to Terminal	New: Min 100 MΩ@500VDC End of Life: 50 MΩ@500VDC
	Terminals to Coil	
Voltage Drop (@100A)		≤80mV

OPERATE / RELEASE TIME	
Operate Time Close (includes bounce)	25ms, Max.
Release Time	10ms, Max.

ENVIRONMENTAL DATA		
Shock	Functional	196m/s^2 Sine half-wave pulse
	Destructive	490m/s^2 Sine half-wave pulse
Operating Temperature		-40 to +85 ℃
Vibration, Sine, Peak, 20G		80 to 2,000Hz
Weight		0.42Lb (0.19kg)

EXPECTED LIFE	
Electrical Life	See table below
Mechanical Life	200,000 Cycles

COIL DATA			
Nominal Voltage	12VDC	24VDC	48VDC
Pickup voltage (20 ˚C)	9.6VDC	19.2VDC	38.4VDC
Dropout voltage (20 ˚C)	0.8VDC	1.6VDC	3.3VDC
Coil current (20˚C, voltage rating, nominal)	461mA	250mA	122mA
Coil wattage (20˚C, voltage rating, nominal)	5.5W	6W	6W
Rated coil resistance ±5% (20˚C)	26 Ω	96 Ω	392 Ω

Polarized Load

Voltage (VDC)	650	450
Current(A)	100	100
Electrical Life (cycles)	2,000	10,000

Non-Polarized Load

Voltage (VDC)	650	450
Current(A)	100	100
Electrical Life (cycles)	1,000	10,000

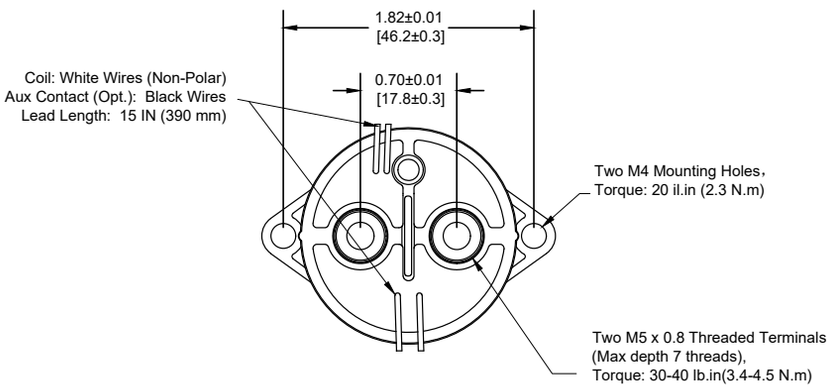
AUX. CONTACT	
Aux. Contact Arrangement	1 Form A
Aux. Contact/Current Max.	2A@30VDC/3A@125VAC
Aux. Contact Current Min.	100mA@8V
Aux. Contact Resistance Max.	0.417ohms@30VDC/ 0.150ohms@125VAC

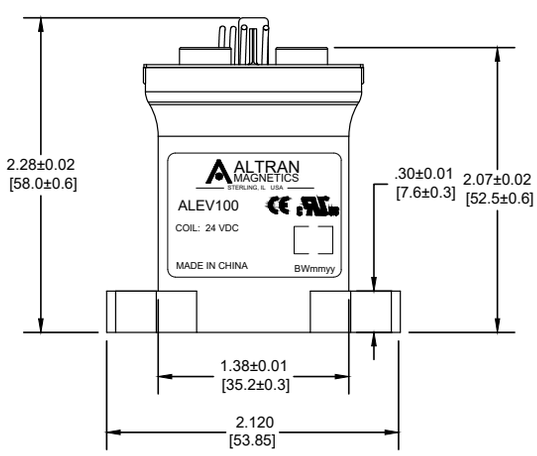
Note:

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.

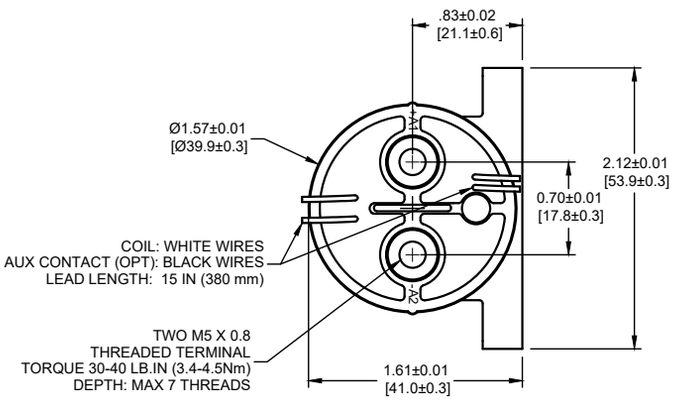
Outline Dimensions : inches (mm)

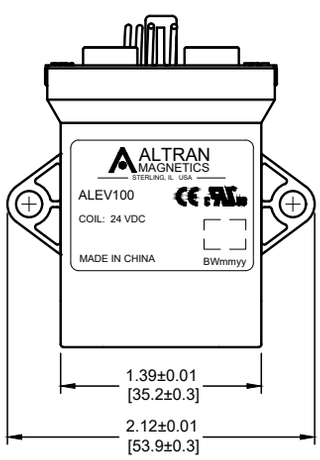
A. Bottom mount:

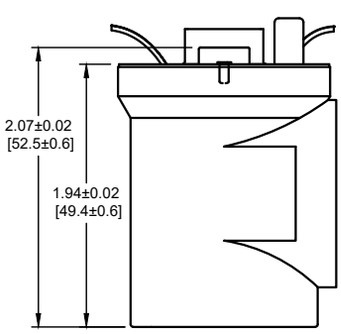




B. Side mount:







Notes:

1. The polarity of the product has the polarity of “+A1” and “-A2” on the outer cover, and the non-polar product has no polarity mark.
2. The wire size is 22 AWG.

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. Nut 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) Max.
- Mounting torque: 20 lb.in (2.3 N.m)

2. Contact terminals are polarized so refer to drawing during connecting. We suggest using a varistor rather than diode as a surge protector.

3. Do not use if dropped.

4. Avoid installing in a strong magnetic field (close to a transformer or magnet), or near a heat source.

5. 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.

6. 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 to +85 ˚C.

7. Coil drive power must be greater than coil power or it will reduce performance capability.

8. Avoid debris or oil contamination on the main terminals to optimize contact and avoid excess heat generation.