

## 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

## Sealing Type: Epoxy/Resin

- ✓ Bidirectional switching option



## Certification Information

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

## Nomenclature

AEV150

M

-

Series code:  
"AEV150" = AEV150

Coil Voltage Code:  
"M" = 12-24 VDC

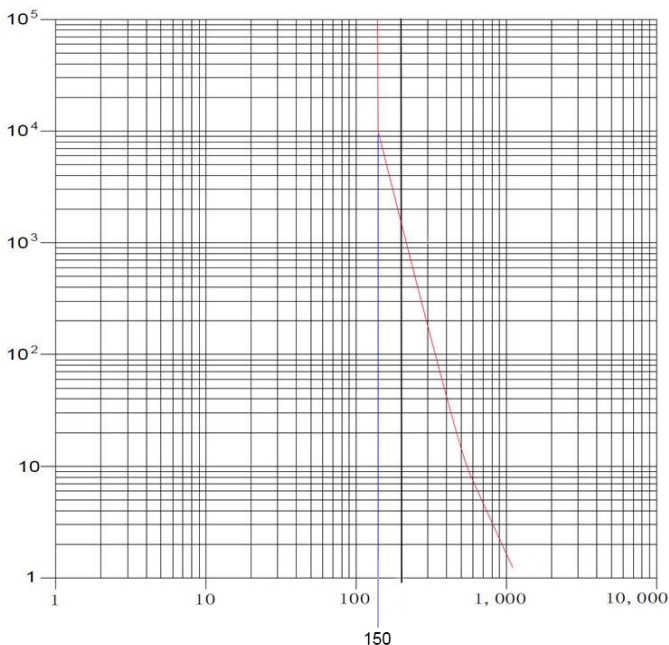
Options (applied in this order):  
Blank = Std. Options (Bottom Mount, Without Aux. Contact & Polarized Load Terminals)  
"A" = With Aux. Contact (SPST-NO)  
"N" = Non-Polar Load Terminals

**Product Data Sheet**

MAIN CONTACT		
Contact Arrangement	1 Form X (SPST-NO)	
Rated Operating Voltage	12-900VDC	
Continuous (Carry) Current	150A -200A (65 °C)	
Make/Break Current	See chart below	
Max Short Circuit Current	2,000A @320VDC, 1 cycle *1	
Dielectric Withstanding Voltage (initial)	Between Open Contacts	2,200Vrms, ≤1mA
	Between Contacts to Coil	2,200 Vrms, ≤1mA
Insulation Resistance (initial)	Terminal to Terminal	New: Min 100 MΩ@500VDC End of life: Min 50 MΩ @500VDC
	Terminals to Coil	
Voltage Drop (@150A)	≤60mV	

EXPECTED LIFE	
Resistive load life	See chart below
Mechanical life	200,000 cycles

**Current Carry Curve**



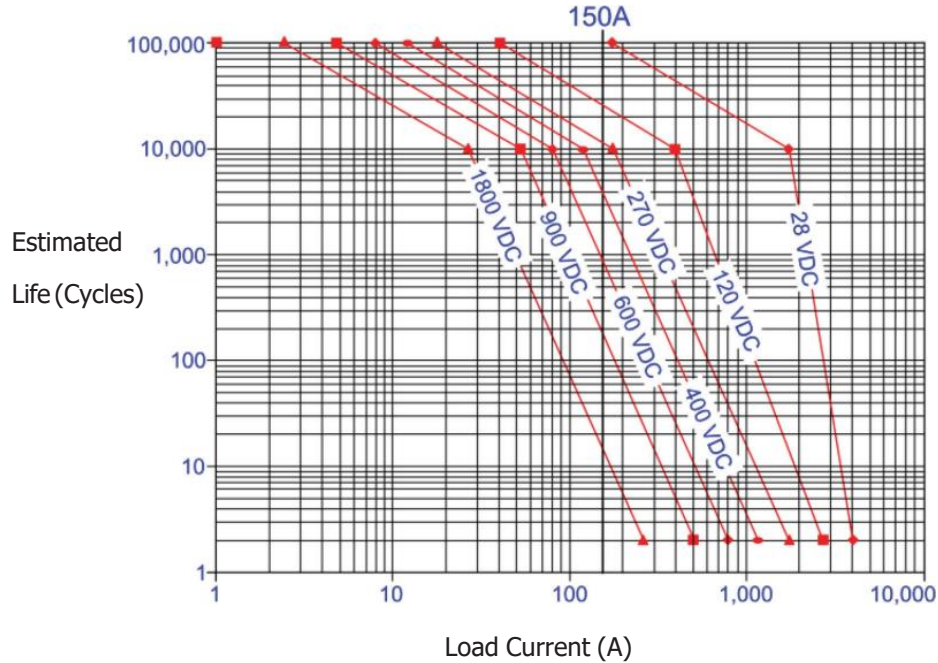
OPERATE / RELEASE TIME	
Close (includes bounce)	25ms, Max.
Bounce (after close only)	7ms, Max.
Release (@2000A includes arc)	12ms, Max.

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	
Altitude	<4000m	
Weight	0.95 Lb (0.43 kg)	

COIL DATA	
Nominal Voltage	12/24 VDC
(Max.) Voltage	36VDC
(Max.) Pick-up Voltage	9VDC
(Min.) Hold Voltage	7.5VDC
(Min.) Drop-out Voltage	6VDC
Max. Inrush Current	3.8A
Average Holding Current	0.13A@12VDC / 0.07A@24VDC

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

### Estimated Make & Break Resistive Load Ratings



**Note:**

1. For resistive loads with 300uH maximum inductance.
2. The maximum make current is 650A to avoid contact welding.
3. Estimates based on extrapolated data. User to confirm performance in application.

### Electrical Load Life Ratings for Typical AEV Applications

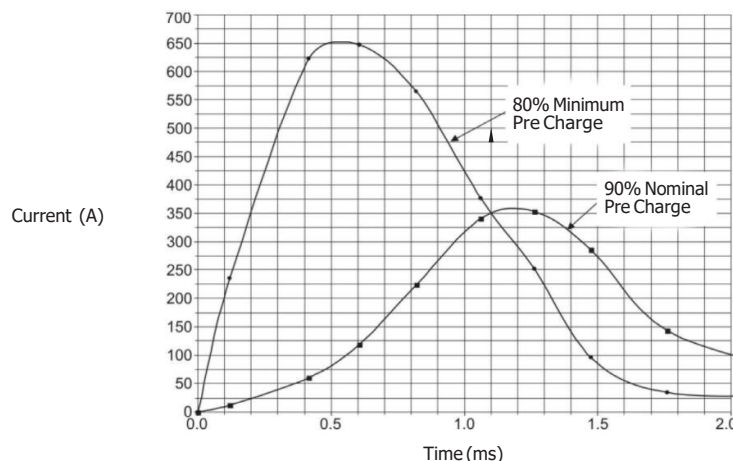
**MAKE/BREAK LIFE CAPACITIVE & RESISTIVE LOADS AT 320VDC \*1**

@90% pre-charge (make only), see chart below 50,000 cycles  
 @Min 80% pre-charge (make only), see chart below 50 cycles

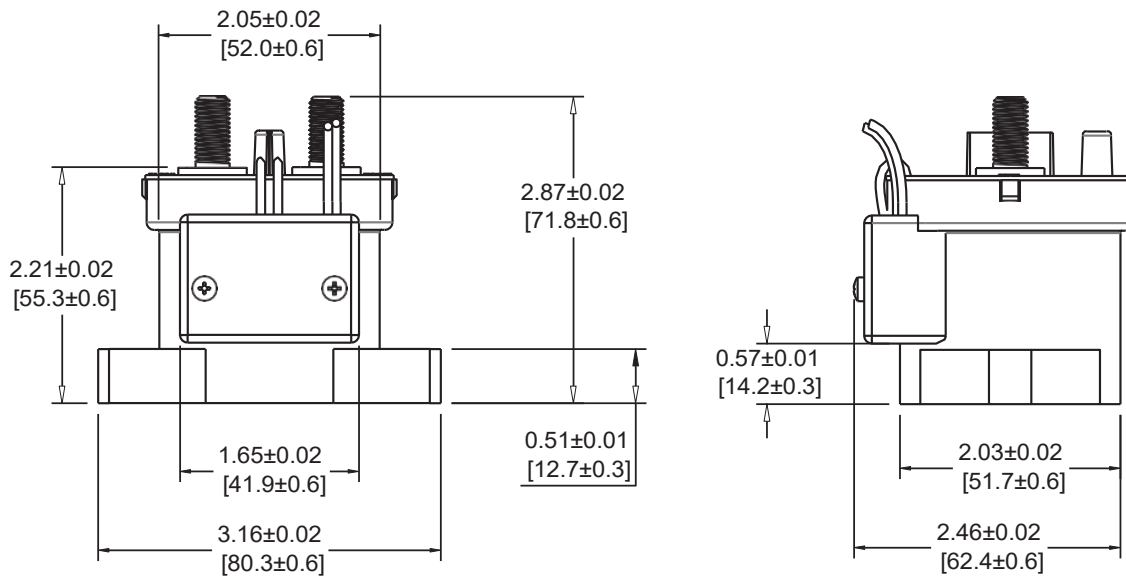
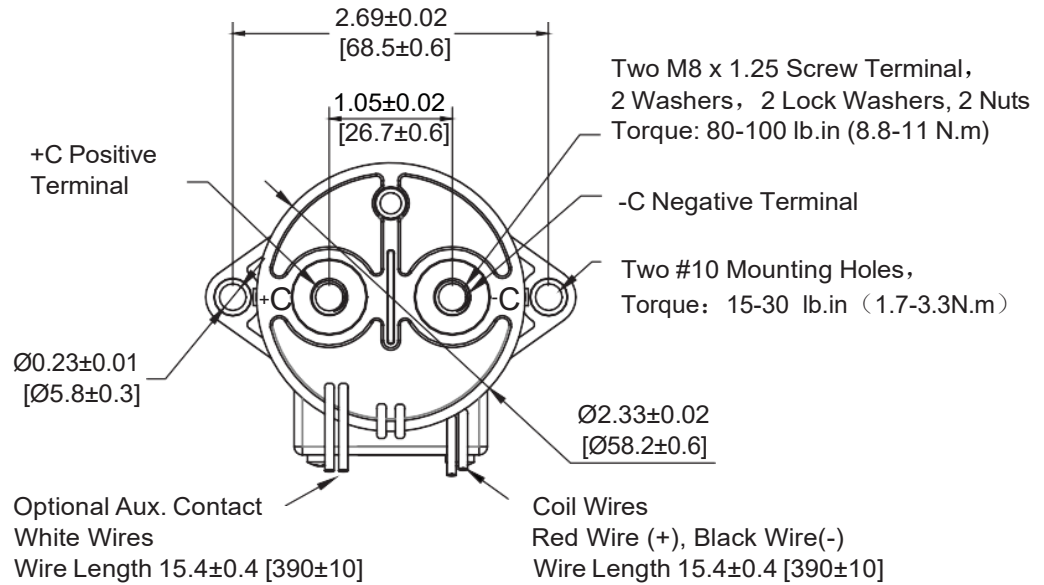
**Note:**

\*1: Resistive load includes L=25uH. Load @2500A, test @200uH

### AEV150 Capacitive Make Test Curves for Pre-Charged Motor Controller



Outline Dimensions : inches (mm)



\*Note: The wire size is 22 AWG.

## Application Notes

1. Be sure to use split washers to prevent nuts from loosening. The nut tightening torque range is specified below. Exceeding the maximum torque can lead to product failure:
  - a. Contact torque (M8): 80 - 100 lb.in (8.8 - 11 N.m)
  - b. Mounting torque: 15 - 30 lb.in (1.7 - 3.3 N.m)
2. Contact terminals are polarized, so refer to the drawing during connection. A reverse surge absorption circuit is included, making an additional surge protective device unnecessary.
3. Do not use the product if it has been dropped.
4. Avoid installing the product near a strong magnetic field (such as close to a transformer or magnet) or near a heat source.
5. Electrical life:

Use the product according to its load capability and life cycle limits to prevent failure. Treat the contactor as a product with a specified lifespan and replace it when necessary. In the event of operating failure, parts around the contactor may burn. Therefore, consider layout carefully and ensure power is cut off within 1 second.
6. Lifetime of internal gas diffusion:

The contactor is sealed and filled with gas. The lifetime of gas diffusion is determined by the temperature in the contact chamber (ambient temperature plus temperature generated by contact operation). Operate only within an ambient temperature range of -40 to +85 °C.
7. If an inductive load ( $L/R > 1\text{ms}$ ) is used, a surge current protection device should be connected in parallel to the inductive load.
8. Drive power must be greater than coil power; otherwise, performance capability will be reduced.
9. The unit operates 0.1 seconds after power is applied. Do not rapidly switch the unit on and off.
10. Avoid contamination of the main terminals with debris or oil to optimize contact and prevent excess heat generation.