High Voltage DC Contactor
AEVT150 Series
150A+/750VDC

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

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: Ceramic

- ✓ Bottom mount/side mount options available

Certificate Information

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

Nomenclature

AEVT150	B	-

Series code:
"AEVT150" = AEVT150

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

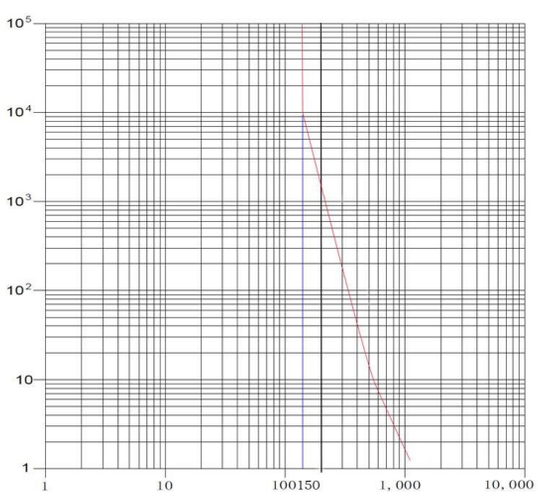
Options (applied in this order):
Blank = Std. Options (Bottom Mount, Without Aux. Contact & Polarized Load Terminals)
"S" = Side Mount Version

Rev G - 22-Mar-2023

MAIN CONTACT		
Contact Arrangement		1 For X (SPST-NO)
Rated Operating Voltage		750VDC
Continuous (Carry) Current		150A (65˚C)
Short term		225A (10min, 50mm2 wire) 320A (2min, 50mm2 wire)
Max short circuit current		1500A @450VDC, 1 cycle *1
Dielectric Withstanding Voltage (initial)	Between Open Contacts	3000VDC, ≤1mA
	Between Contacts to Coil	2,200Vrms, ≤1mA
Insulation Resistance (initial)	Terminal to Terminal	≥100 MΩ@500VDC
	Terminals to Coil	
Voltage Drop (@100A)		≤100mV

EXPECTED LIFE	
Electrical Endurance (make/break) 150A@650VDC	3000 cycles
50A@450VDC	20,000 cycles
150A@450VDC	5,000 cycles
Mechanical life	200,000 cycles

Current Carry Curve



Notes:
1: Resistive load includes L=25uH. Load @2500A, test @200uH
2: Life based on projected Weibull Life with 95% reliability.
3: Estimates based on extrapolated data. User is encouraged to confirm performance in application.

OPERATE / RELEASE TIME	
Close (includes bounce)	30ms, Max. Bounce 5ms Max.
Release	10ms, Max

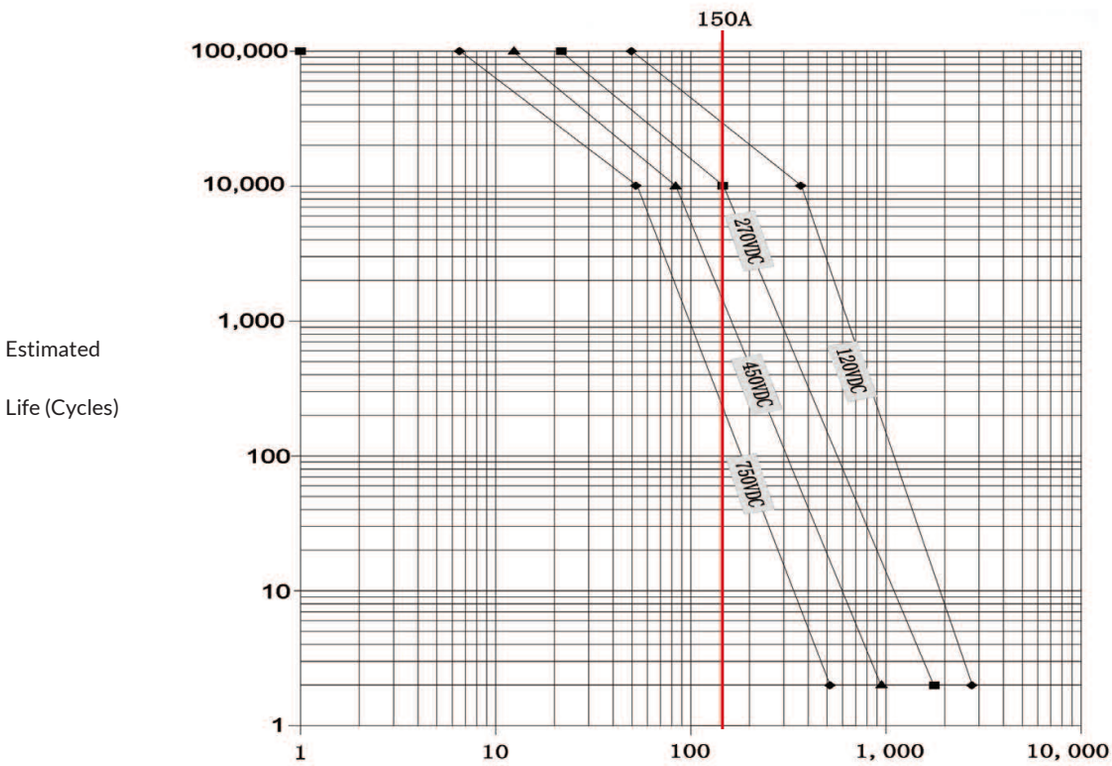
ENVIRONMENTAL DATA		
Shock	Functional	196m/s² Sine half-wave pulse
	Destructive	490m/s² Sine half-wave pulse
Operating Temperature		-40 to +85˚C
Vibration, Sine, Peak, 20G		80 to 2,000Hz
Altitude		<4000m
Weight		0.73 lb (0.33kg)

COIL DATA		
Nominal Voltage	12VDC	24VDC
Max. Voltage	15VDC	28VDC
Max. Pick-up Voltage	9VDC	18VDC
Drop-out Voltage (25°C)	1.2VDC	2.4VDC
Coil power	6W	6W
Max. Inrush Current	500mA	250mA

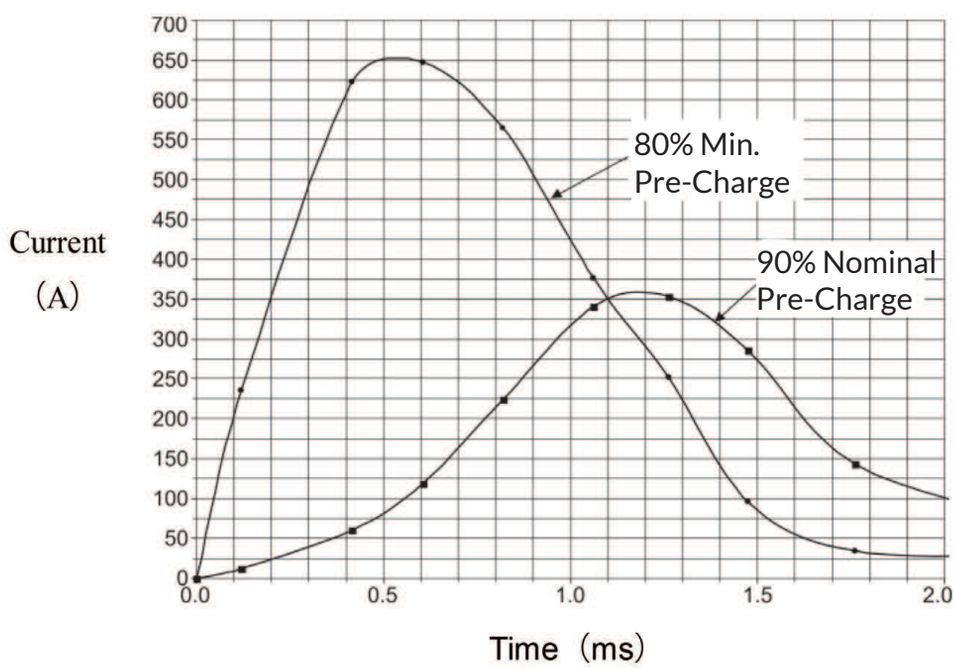
MAKE/BREAK LIFE CAPACITIVE & RESISTIVE LOADS AT 320VDC*1 *2	
@90% pre-charge (make only), see chart below	30,000 cycles
@Min 80% pre-charge (make only), see chart below	50 cycles

Electrical life

Estimated Make & Break Power Switching Ratings

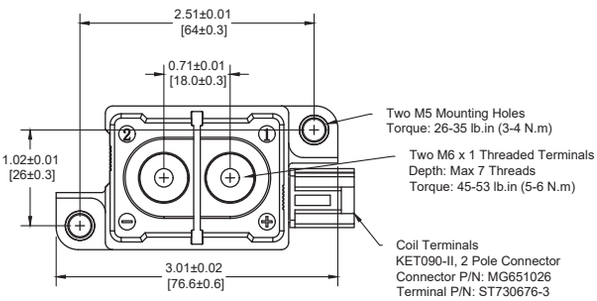


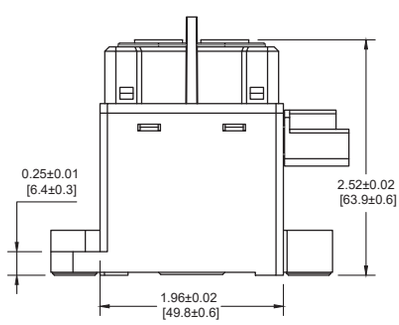
AEVT150 Capacitive Make Test Curves for Pre-Charged Motor Controller

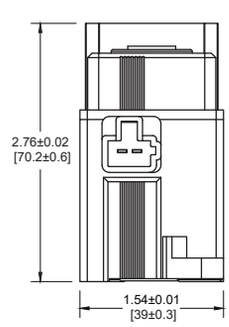


Outline Dimensions: inches (mm)

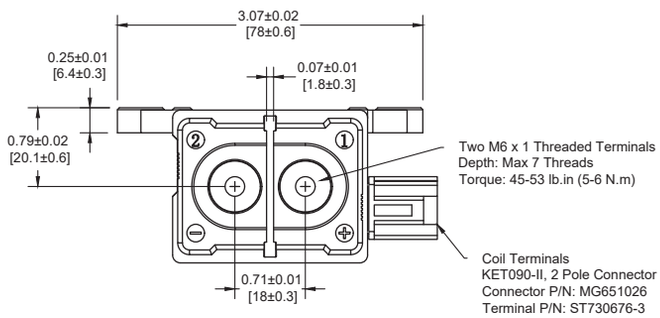
Bottom mount:

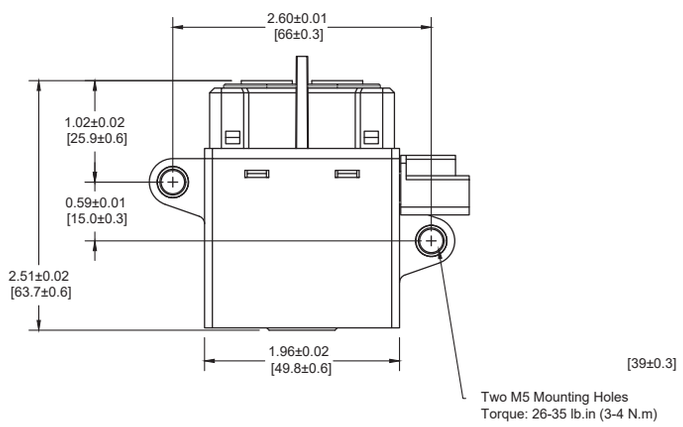


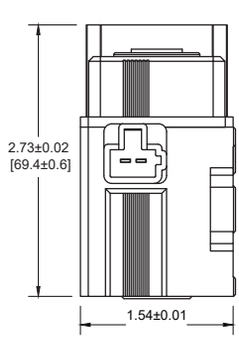




Side mount:







*Note: The wire size is 20AWG-22AWG, diameter 1.5mm including insulation layer

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 (M6): 45 - 53 lb.in (5 - 6 N.m)
   - Mounting torque: 26 - 35 lb.in (3 - 4 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. Avoid debris or oil contamination on the main terminals to optimize contact and avoid excess heat generation.