

## 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: Ceramic

- ✓ Cost effective high performance contactor



## Certification Information

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

## Nomenclature

AEVTS300

B

-

### Series code:

“AEVTS300” = AEVTS300

### Coil Voltage Code:

“B” = 12VDC

“C” = 24VDC

“E” = 48VDC

### Options:

Blank = Std. Options (Bottom Mount, Without Aux. Contact & Polarized Load Terminals)

“A” = With Aux. Contact (SPST-NO)

**Product Data Sheet**

**MAIN CONTACT**

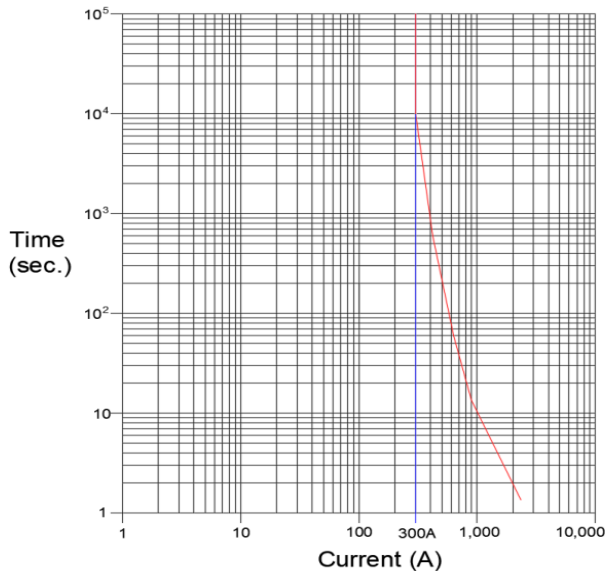
Contact Arrangement	1 Form X (SPST-NO)	
Rated Operating Voltage	1800 VDC	
Rated Current	300 A	
Short Term Current	450A (6min)	
Dielectric Withstanding Voltage (initial)	Between Open Contacts	6000VDC 1mA 1min
	Between Contacts to Coil	2500VAC 1mA 1min
Insulation Resistance (initial)	Terminal to Terminal	≥1000 MΩ @ 500VDC
	Terminals to Coil	
Contact Voltage Drop (initial)	≤8mV (@ 20A)	
Breaking Limit	3500A @ 450VDC, 1 Cycle	

**EXPECTED LIFE**

Electrical Endurance (make/break) 300A @ 450VDC	2,000 Cycles
Electrical Endurance (make/break) 300A @ 650VDC	1,000 Cycles
Mechanical Life	200,000 Cycles

**Current Carry Curve**

Carry Current Vs Time performance (85°C) with 100mm<sup>2</sup> conductor



**OPERATE / RELEASE TIME**

Operate Time	≤40ms @ 20°C
Release Time	≤30ms @ 20°C

**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°C to +85°C	
Humidity	5% to 85%RH	
Weight	1.43Lb (0.65kg)	

**COIL DATA**

Nominal Voltage	12VDC	24VDC	48VDC
Min. Holding Voltage (20°C)	7VDC	12.5VDC	18VDC
Pick-up Voltage (20°C)	≤9VDC	≤18VDC	≤36VDC
Drop-out Voltage (20°C)	≥1.2VDC	≥2.4VDC	≥4VDC
Max Inrush Current (20°C, Nominal Voltage)	2.5A	1.5A	1.3A
Holding Current (20°C, Nominal Voltage)	0.45A	0.21A	0.03A

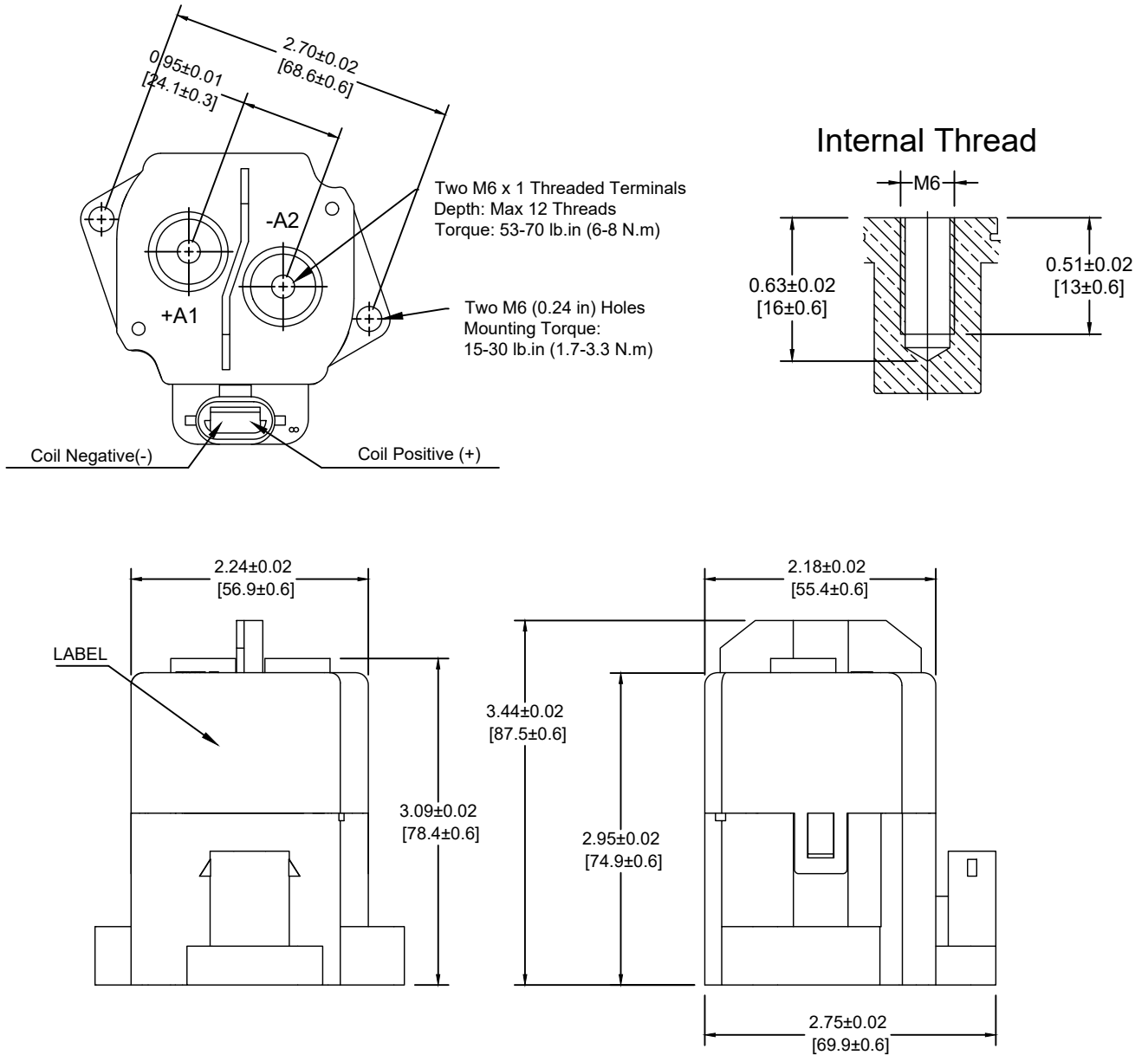
**AUX. CONTACT**

Aux Contact Arrangement	1 Form A
Aux. Contact Resistance	≤0.5Ω
Aux Contact Current Max	2A

**Note:**

When the current is ≥2000A, no fire or explosion shall occur after the test as the acceptance requirements (Welding may occur, dielectric strength and insulation resistance may decrease).

Outline Dimensions (mm):



Note:  
 The wire size is 22AWG, diameter 2.8mm including insulation layer  
 Altran provides Sealed Coil connector for product and hexagon socket screws for contacts, the connector wire length is 180±20mm.

## Application Notes

1. To prevent loosening, split washers should be used whenever the contactor is installed. All terminals or conductors must be in direct contact with the contactor's main terminals. Please control the nut tightening torque of each part within the specified range in the table below. If the torque exceeds the recommended range, it may cause damage to the sealed cavity and thread damage.
  - Static contact torque: 53.1 - 70.8 lb.in (6.0-8.0 N.m)
  - Mounting torque: 15 - 30 lb.in (1.7 - 3.3 N.m)
2. Products with polarity marked on the load end must be used correctly according to the product label. When the load connection polarity is reversed, the electrical characteristics in this data sheet cannot be guaranteed.
3. Products with a coil economizer are already equipped with back EMF circuits, so there is no need to use surge protectors.
4. Avoid installing the contactor in a strong magnetic field environment (near transformers or magnets) and avoid placing the contactor near objects with heat radiation.
5. When continuous current is applied to the contacts of the relay, and the coil is turned on immediately after the power is cut off. At this time, as the temperature of the coil increases, the resistance of the coil will also increase, which will increase the pull-in voltage of the product, which may result in exceeding the rated pull-in voltage. In this case, the following measures should be taken to reduce the load current; limit the continuous power-on time or use a coil voltage higher than the rated pull-in voltage.
6. When the voltage applied to the coil exceeds the maximum allowable applied voltage, the coil temperature may rise and lead to coil damage and inter-layer short circuit.
7. The rated values in the contact parameters are values for resistive load. When using an inductive load with  $L/R > 1\text{ms}$ , please connect a surge current protection device to the inductive load in parallel. If no measures are taken, the electrical life may be reduced and the continuity may be poor. Please consider sufficient margin space in the design.
8. Coil drive power must be greater than coil power or it will reduce performance capability.
9. Please do not allow debris and oil to adhere to the main terminals; make sure that the main terminals are in reliable contact with the load conductor, otherwise the temperature rise of the terminal / conductor connection may be too high due to the excessive contact resistance.
10. The load conductor must have the corresponding current load capacity and heat dissipation capacity (it is recommended to use a copper bar with a min  $120\text{mm}^2$ ), to prevent overheating and affecting the life of the contactor.
11. It is impossible to determine all the performance parameters of contactors in each specific application. Therefore, customers should choose the products matching them according to their own conditions of use. If in doubt, contact Altran.
12. Do not use if dropped.
13. Altran reserves the right to make changes as needed. Customers should reconfirm the contents of the specification or ask for us to supply a new specification if necessary.