

# AEVTS300 Series

## High Voltage DC Contactor

### 300 Amps / 1800 VDC



### Certification Information

1. Meets RoHS (2011/65/EU)
2. CE certified
3. UL Listed

### Application

AEVTS Series is a ceramic based contactor used for charging piles, battery power supplies, DC power controls, circuit protection and other electric vehicle power switch controls. It is widely used in uninterruptible power supply and other electronic control systems as well. It offers enhanced electrical life endurance compared to epoxy devices.

### Features

#### HIGH CURRENT AND HIGH VOLTAGE

Contact chamber is filed with inert gas to minimize arcing

#### COMPACT STRUCTURE, LOW NOISE

Contact design yields reduced unit size, low noise while carrying or switching currents.

#### HIGH SAFETY

There is no arc leakage due to tight sealing.

#### HIGHLY RELIABLE CONTACT

Stable contact resistance no matter how harsh the environment with sealed contacts.



### Nomenclature

AEVTS300

-

B

-

A

**Series code:**  
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)

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#### Performance Data:

Main Contact			Expected Life	
Contact Arrangement	1 From X (SPST-NO)		Electrical Endurance (Make/Break) 300A @ 450VDC	2,500 Cycles
Max. Switching Voltage	1,800VDC			
Rated current	300A		Electrical Endurance (Make/Break) 300A @ 650VDC	1,000 Cycles
Short Term Current	450A (6min)		Mechanical Life	200,000 Cycles
			Aux. Contact	
Dielectric Withstanding Voltage (Initial)	Between Open Contacts	6000VDC 1mA 1min	Aux. Contact Arrangement	1 Form A
	Between Contacts to Coil	2500VAC 1mA 1min	Aux. Contact Resistance	≤0.5Ω
Insulation Resistance (Initial)	Terminal to Terminal	≥1000 MΩ @ 500VDC	Aux. Contact Max. current	2A
	Terminals to Coil			
Contact Voltage Drop (initial)		≤8mV (@ 20A)		
Breaking Limit		3500A @ 450VDC, 1 Cycle		
Environmental Data			Operate / Release Time	
Shock	Functional	196m/s <sup>2</sup> Sine half-wave pulse	Operate Time	≤40ms @ 20°C
	Destructive	490m/s <sup>2</sup> Sine half-wave pulse		
Operating Temperature		-40 ~ +85°C	Release Time	≤30ms @ 20°C
Humidity		5% ~ 85%RH		
Weight		1.43Lb (0.65kg)		

#### Note:

1. Do not meet dielectric & IR after the test.
2. ON/OFF = 0.6s/5.4s

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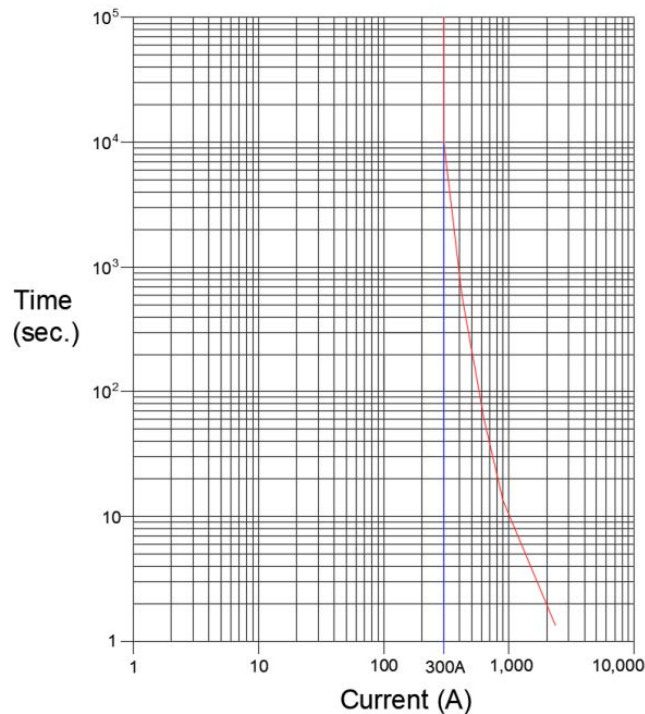


### Coil Data (Cont.):

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

### Performance Data:

Carry Current Vs Time performance (85°C) The cross-section area of copper Bus is ≥75mm<sup>2</sup>, the charted data is for reference only.



### Note:

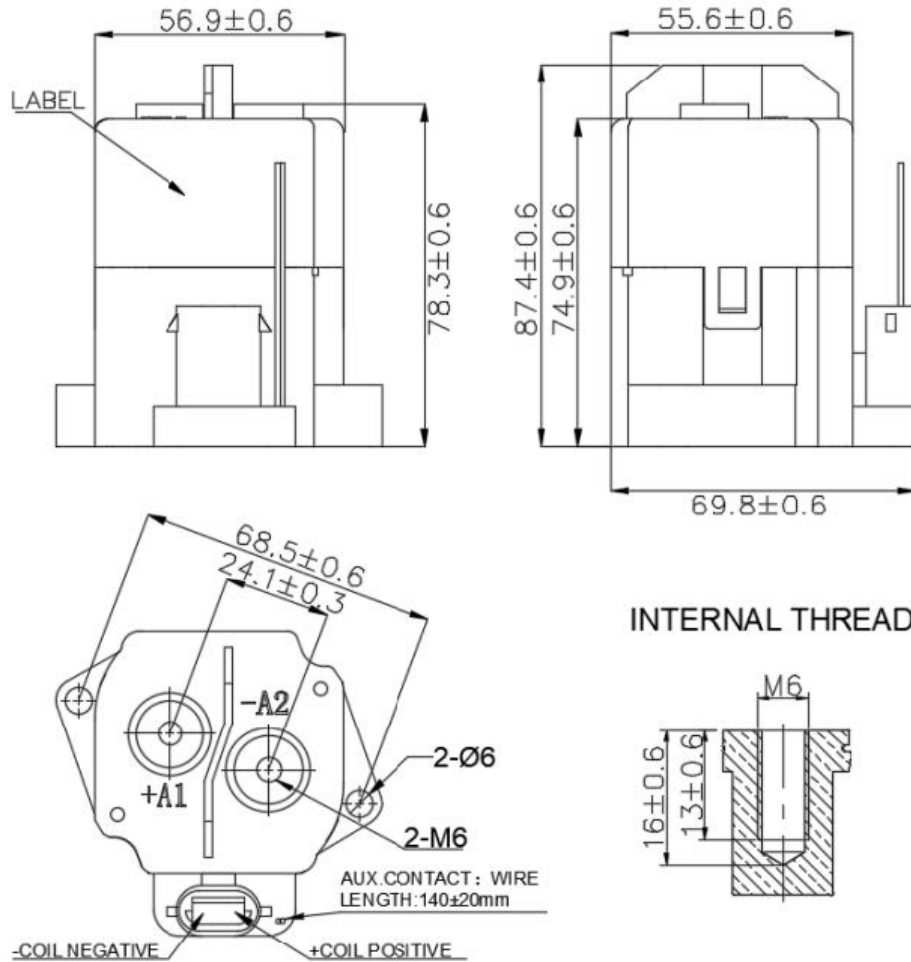
When the current is ≥2000A, no fire or explosion shall occur after the test as the acceptance requirements (Welding may occur, dielectric strength and insulation resistance may decrease).



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## Outline Dimensions (mm):



### Note:

Altran provides Sealed Coil connector for product and hexagon socket screws for contacts, the connector wire length is  $180 \pm 20$ mm.

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#### Application Notes:

1. To prevent loosening, washers should be used whenever the contactor is installed. All terminals or copper bar must be in direct contact with the contactor's main terminals. Please control the screw 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.
  - Main Terminal torque: 6.0-8.0 N.m (Max depth, 12 threads)
  - Mounting torque: 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 promised in this manual 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. Supply 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 100mm<sup>2</sup>), to prevent overheating and affecting the life of the contactor.
11. 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, however, the customer will be responsible for validating that the products meet their application.
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.