

## 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
- ✓ Bi-directional



## Certification Information

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

## Nomenclature

AEVE250

B

-

### Series code:

“AEVE250” = AEVE250

### Coil Voltage Code:

“B” = 12VDC

“C” = 24VDC

### Options (applied in this order):

Blank = Std. Options (Bottom Mount, Without Aux)

“S” = Side Mount Version

**Product Data Sheet**

MAIN CONTACT		
Contact Arrangement	1 Form A (SPST-NO)	
Rated Operating Voltage	1000VDC	
Rated Current	250A	
Short Term Current (85°C) (60mm <sup>2</sup> Busbar)	500A (2min)	
Dielectric Withstanding Voltage (initial)	Between Open Contacts	3000VDC, 1mA, 1min
	Between Contacts to Coil	2500VAC, 1mA, 1min
Insulation Resistance (initial)	Terminal to Terminal	Min. 1000 MΩ @1000VDC (Initial) Min 50MΩ @500VDC (After durability test)
	Terminals to Coil	
Short Circuit Current	20,000A (3ms) (No fire or explosion)	
Contact Voltage Drop (initial)	Max.125mV (250A)	
Breaking Limit	2000A @ 500 VDC, 1 Cycle	

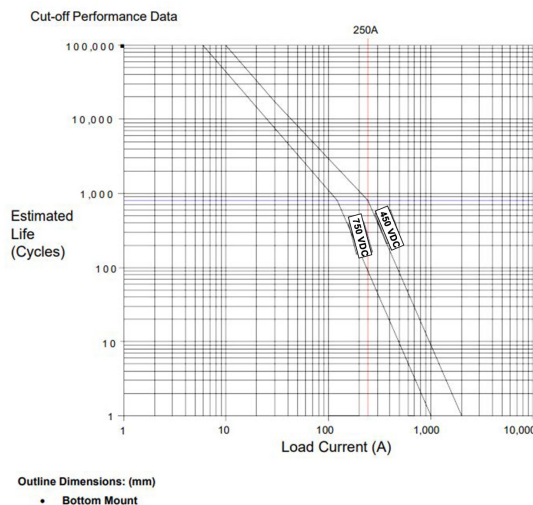
OPERATE / RELEASE TIME	
Operate Time (includes bounce)	30ms, Max. @20°C
Release Time	10ms, Max @20°C

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 to +85 °C
Humidity		5% to 85%RH
Weight		0.88Lb (0.4kg)

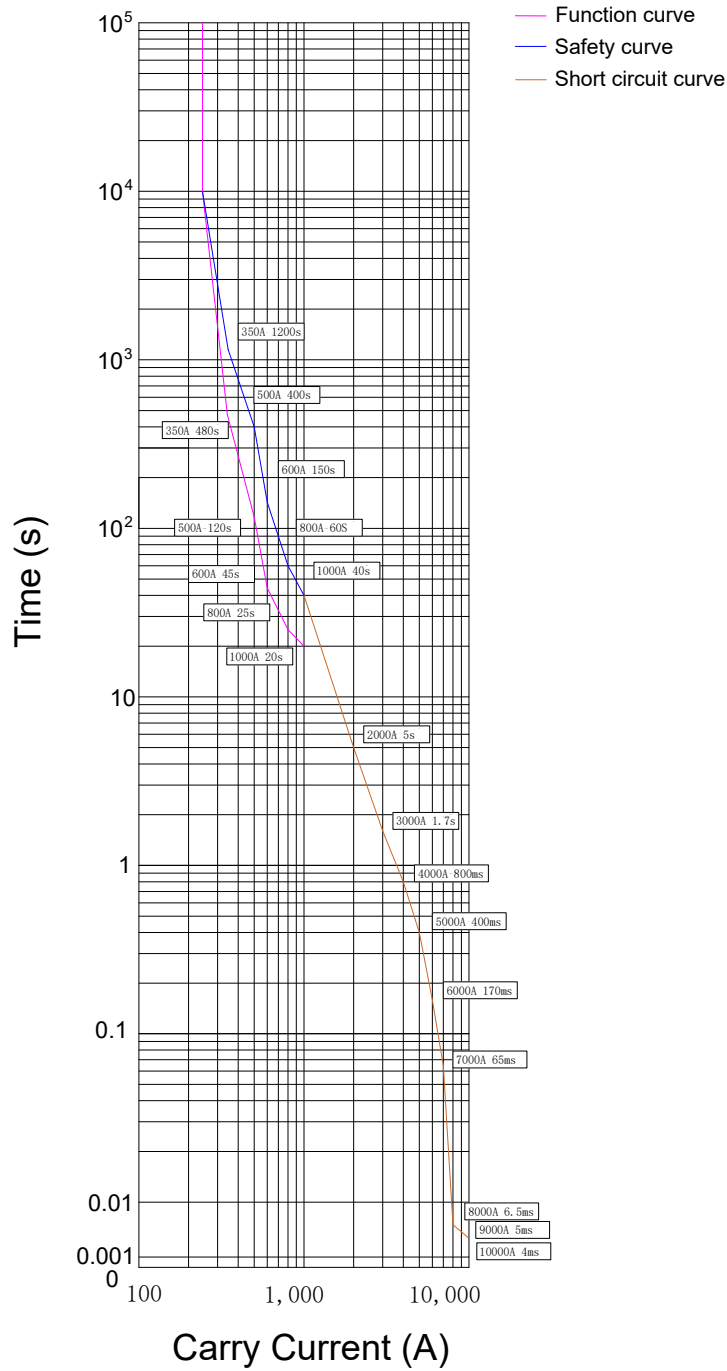
EXPECTED LIFE	
Electrical Life (Make Only) 140A @ 20VDC	75,000 Cycles
Electrical Life (Break Only) 250A @ 450VDC	1,000 Cycles
Electrical Life (Break Only) 2000A @ 500VDC	1 Cycle
Mechanical Life	200,000 Cycles

COIL DATA		
Nominal Voltage	12VDC	24VDC
Max. Pick-up Voltage (20°C)	9VDC	18VDC
Min. Drop-out Voltage (20°C)	0.5VDC	1VDC
Max. Inrush Current (20°C)	6W	6W
Average Holding Current (20°C)	24 Ω	96 Ω

**Electrical Endurance**

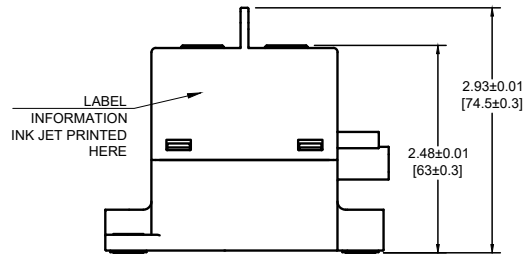
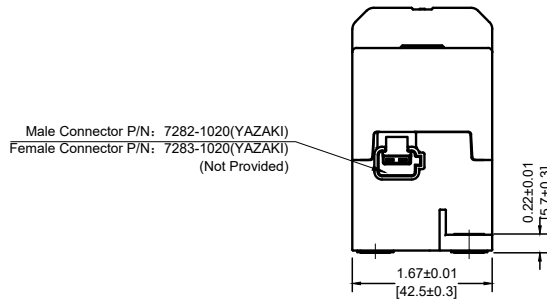
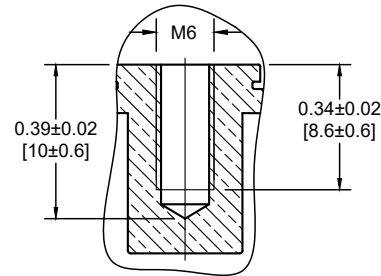
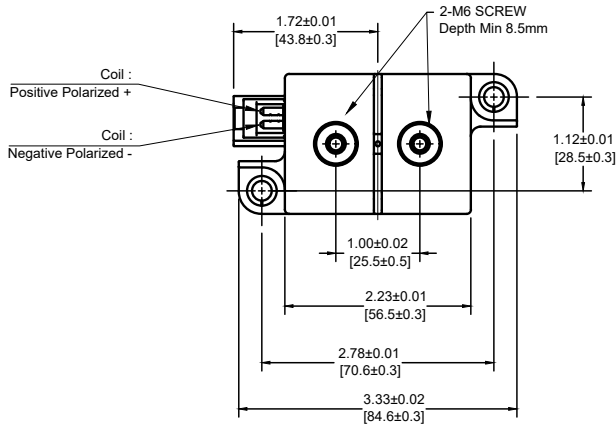


### Current Carry vs. Time Performance

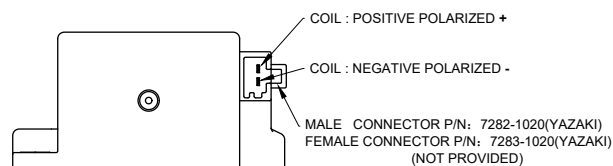
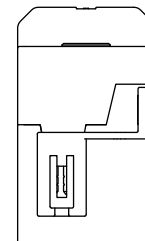
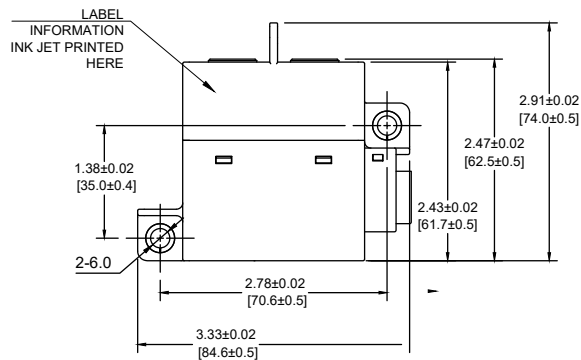
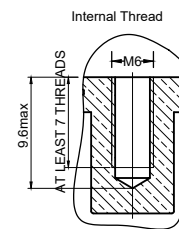
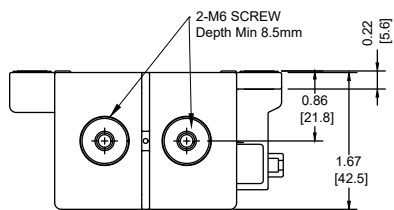


Outline Dimensions : inches (mm)

Bottom Mount



Side Mount



## Application Notes

- To prevent loosening, split washers should be used whenever the contactor is installed. All terminals or conductors must directly contact the contactor's main terminals. Please control the 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 lb. in - 70.8 lb. in (6.0-8.0 N.m)
  - Installation torque: 26.5 lb. in - 35.4 lb. in (3.0-4.0 N.m)
- 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.
- It is necessary to design a surge-absorbing circuit to absorb the reverse electromotive force of the contactor coil. The use of diodes should be avoided. Diodes connected in parallel with coils will significantly prolong the release time of contactors, which may reduce the service life of products. Products with polarity marked on the load end must be used correctly according to the product marking. When the load connection polarity is reversed, the electrical characteristics promised in this manual cannot be guaranteed.
- Avoid installing the contactor in a strong magnetic field environment (near transformers or magnets) and placing it near objects with heat radiation.
- When continuous current is applied to the relay contacts, the coil is turned on immediately after the power is cut off. At this time, as the coil's temperature increases, the coil's resistance 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.
- When the voltage applied to both ends of the coil exceeds the maximum allowable applied voltage, the coil temperature may rise, leading to coil damage and an inter-layer short circuit.
- The rating in the contact parameters is the value at the time of the resistive load. When using an inductive load with  $L/R > 1\text{ms}$ , connect a surge current protection device in parallel with the inductive load. If measures are taken, the electrical life may be maintained, and the continuity may be suitable. Please consider sufficient margin space in the design.
- Coil drive power must be greater than coil power, or it will reduce performance capability.
- 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 excessive contact resistance.
- The load conductor must have the corresponding current load capacity and heat dissipation capacity (it is recommended to use wire with a minimum of  $4\text{mm}^2$ ) to prevent overheating and affect the life of the contactor.
- Do not use if dropped.
- It is impossible to determine all the performance parameters of contactors in each specific application; therefore, customers should choose products that match them according to their own conditions of use. If in doubt, contact Altran. The customer will be responsible for validating that the products meet their application.
- Altran reserves the right to make changes as needed. Customers should reconfirm the specification's contents or ask us to supply a new specification if necessary.