

AES400 Series DC Contactor Specification 400 Amp / 1000 VDC



Application

The AES400 contactor is designed for stationary power applications, such as energy storage systems, UPS and charging stations.

Certification Information

Product complies with RoHS standard (2011/65/EU)



UL FILE NUMBER: E501749

Nomenclature

AES400

M

A

Series code:

"AES400" = AES400 Series

Coil Voltage:

"C" = 24VDC (Low Inrush Current)

"M" = 12 - 24VDC

Options: "A" = Std. Options (Bottom Mount, With Aux. Contact (SPST-NO) & Polarized Load Terminals)

AES400 Series DC

Contactors Specification

400 Amp / 1000 VDC



Performance Data:

Main Contact			Expected Life	
Contact Arrangement	1 Form X (SPST-NO DM)		Electrical Endurance	400A@450VDC, 3000 Cycles
Max. Switching Voltage	1000VDC			
Rated Current	400A			
Contact resistance	50mV@100A		Mechanical life	200,000 Cycles
Max Short Circuit Current	2000A (20s)			
Short Term Current	600A (2min) 1000A (1 min) 2000A (0.2 min)		AUX Contact	
Dielectric Withstanding Voltage (Initial)	Between Open Contacts	3500 VAC/5mA/60s	Aux. Contact arrangement	1 Form A
	Between Contacts to Coil	3500 VAC/5mA/60s	Aux. Contact Current Max.	3A@24VDC/ 3A@125VAC
Insulation Resistance (Initial)	Terminal to Terminal	Min. 100 MΩ@500Vdc	Aux. Contact Current Min.	100mA@8V
	Terminals to Coil	Min. 100 MΩ@500Vdc		
Contact Voltage Drop (initial)	Max. 50mV/100A)			
Environmental Data			Operate Time @ 25°C	
Shock	Functional	196m/s ² Sine half-wave pulse	Operate Time	40ms, Max. @20°C
	Destructive	90m/s ² Sine half-wave pulse	Release Time	15ms, Max. @20°C
Operating Temperature		-40 to +85°C		
Humidity		5% to 85%RH		
Weight		1.32 Lb. (600g)		

- Note:
1. Do not meet dielectric & IR after the test.
 2. ON:OFF = 1s:9s.
 3. The ambient environment of application should not cause any dewing or icing inside the relay. Otherwise, the relay may

AES400 Series DC Contactor Specification 400 Amp / 1000 VDC

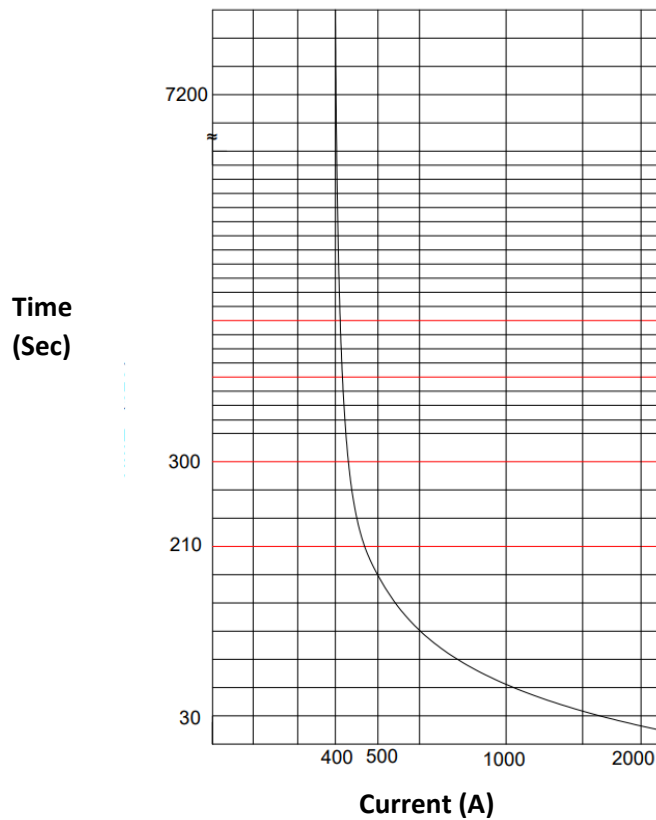


Coil Data (Cont.):

Coil Data		
Nominal Voltage (20 C)	12-24 Vdc	24 Vdc
Max. Voltage (20 C)	36 Vdc	32 Vdc
Pick-up Voltage (20C)	8-9 Vdc	18 Vdc
Drop-out Voltage (20 C)	5-7 Vdc	12 Vdc
Max Inrush Current (20 C)	4A	0.55A
Avg. Holding Current (20 C)	0.29A@12Vdc 0.15A@24Vdc 0.09A@36Vdc	0.13A@24Vdc

Performance Data

Carry Current Performance

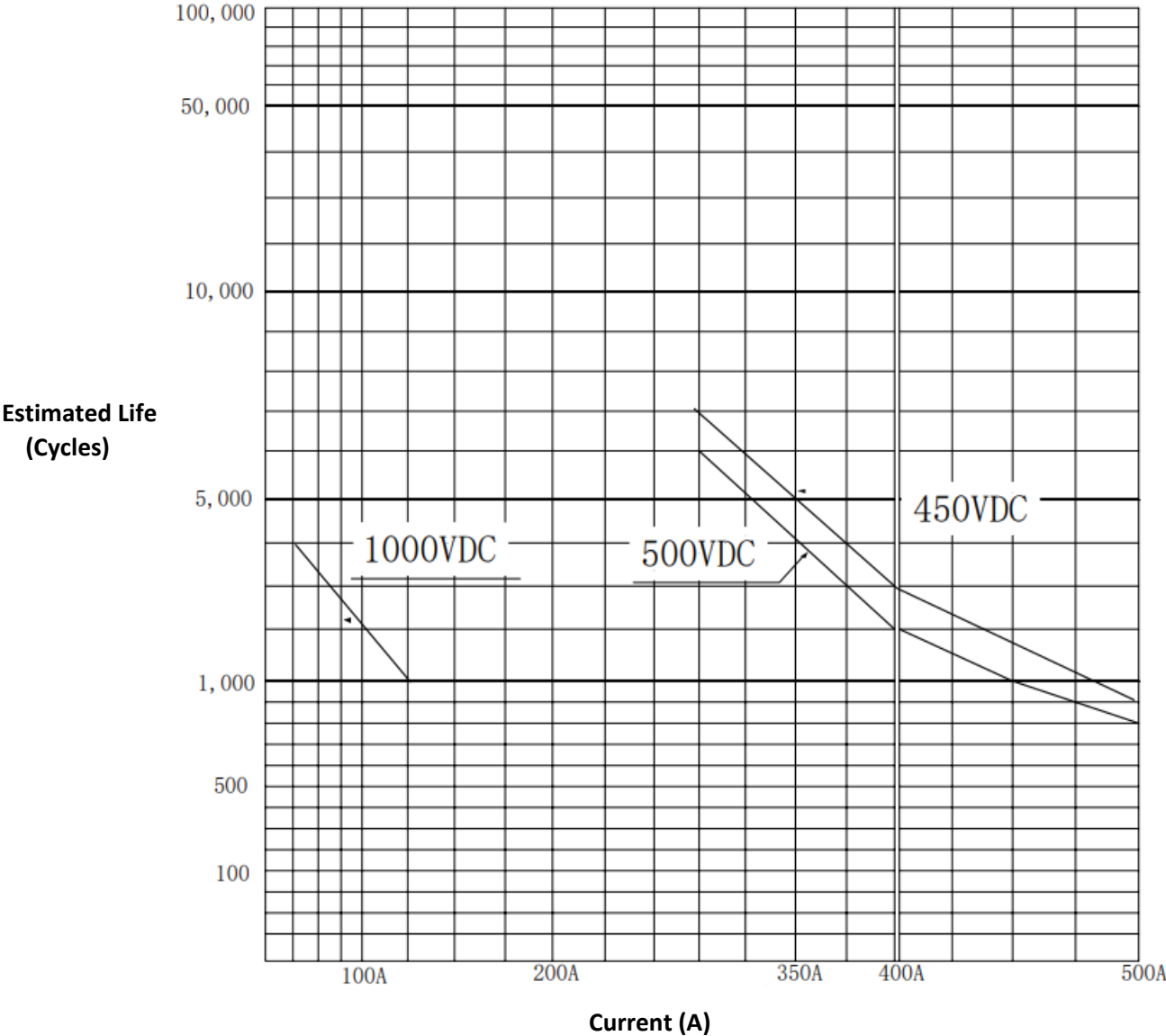


AES400 Series DC Contactor Specification 400 Amp / 1000 VDC



Electrical Life

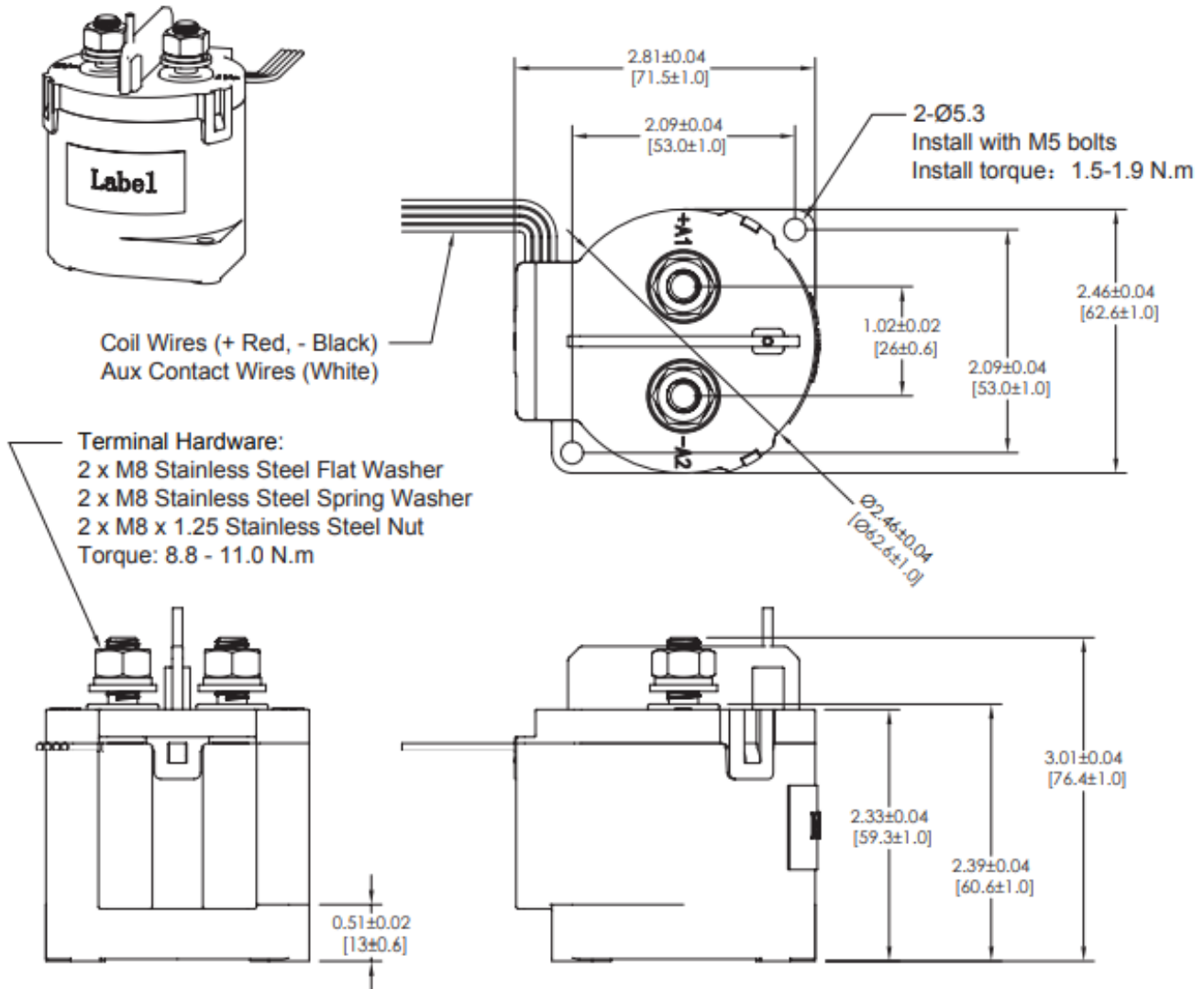
Estimated Make and Break Resistive Load Ratings



AES400 Series DC Contactor Specification 400 Amp / 1000 VDC



Outline Dimension: Inches (mm)



AES400 Series DC

Contactors Specification

400 Amp / 1000 VDC



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.
 - Contact torque: 8.8 - 11 N.m
 - Mounting torque: 2.3 N.m Max.
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. 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.
11. The load conductor must have the corresponding current load capacity and heat dissipation capacity (it is recommended to use a copper bar with min 325mm²), to prevent overheating and affecting the life of the contactor.
12. 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.
13. Do not use if dropped.
14. 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.