

AES400 Series DC Contactor Specification 400 Amp / 1000 VDC



Certification Information

Meets RoHS (2011/65/EU)

Nomenclature:

Typical Part Number

AES400 – M A

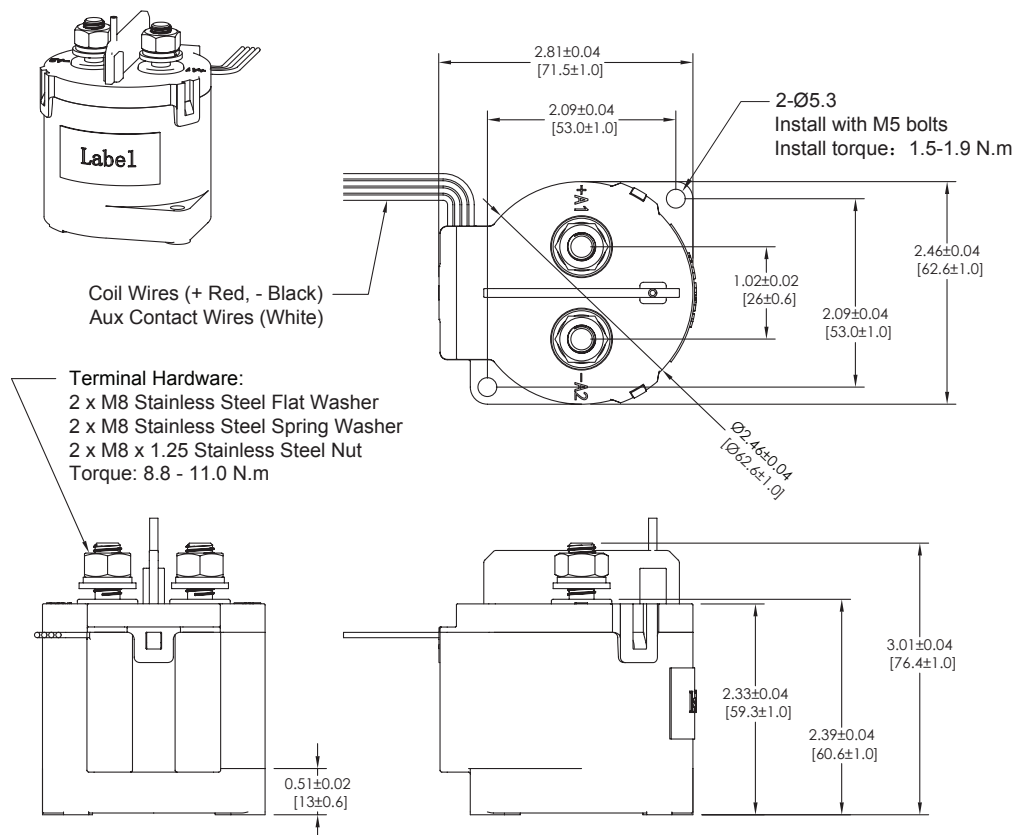
Series code:
"AES400" = AES400 Series

Coil Voltage:
"C" = 24VDC (Low Inrush Current)
"M" = 12 - 24VDC

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



Outline Dimensions: Inches (mm)



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Performance Data

MAIN CONTACTS DATA			EXPECTED LIFE	
Contact Arrangement	1 Form X (SPST-NO DM)		Electrical Endurance	400A@450VDC, 3000 Cycles
Max. Switching Voltage	1000VDC		Mechanical life	200,000 Cycles
Rated Current	400A		AUX. CONTACT	
Max Short Circuit Current	2000A (20s)		Aux. Contact arrangement	1 Form A
Short Term Current	600A (2min.) 1000A (1min.) 2000A (0.2min.)		Aux. Contact Current Max.	3A@24VDC/ 3A@125VAC
Dielectric Withstanding Voltage (Initial)	Between Open Contacts	3500 VAC/5mA/60s	Aux. Contact Current Min.	100mA@8V
	Between Contacts To Coil	3500 VAC/5mA/60s		
Insulation Resistance (Initial)	Terminal to Terminal	Min. 100 MΩ@500Vdc		
	Terminals to Coil	Min. 100 MΩ@500Vdc		
Contact Voltage Drop (initial)	(Max. 50mV/100A)			
ENVIRONMENTAL DATA				
Shock	Functional	196m/s ² Sine half-wave pulse	Operate Time	40ms, Max. @20°C
	Destructive	490m/s ² Sine half-wave pulse		
Operating Temperature	-40 to +85°C		Release Time	15ms, Max. @20°C
Humidity	5% to 85%RH			
Weight	1.32 Lb. (600g)			

Characteristics

COIL DATA		
Nominal Voltage (20° C)	12-24 Vdc	24 Vdc
Max. Voltage (20° C)	36 Vdc	32 Vdc
Pick-up Voltage (20° C)	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

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 fail to work consequently.

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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.

- 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 marking. 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 voltage is applied to products with a coil economizer, the circuit will automatically switch to the holding voltage about 100ms later. Please do not repeat the on-off operation during this time period, or the coil economizer of the contactor may be damaged.

7. 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.

8. The rated values in the contact parameters are values for a 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.

9. Supply power must be greater than coil power or it will reduce performance capability.

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. Do not use if dropped.

13. 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.

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.