High Voltage DC Contactor
AREV100 Series
100A+/900VDC

ALTRAN MAGNETICS

Product Data Sheet

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: Epoxy/Resin

- ✓Compact design, optional auxiliary contacts available
- ✓Bi-directional options
- ✓Normally Closed

Certification Information

1. Meet RoHS (2011/65/EU)
2. CE Certified
3. UL Approved

Nomenclature

AREV100	-	B	N

Series code:
"AREV100" = AREV100

Type Code:
Blank = Main Contacts (NO)
"NC " = Main Contacts (NC)

Coil Voltage Code:
"B" = 12VDC
"C" = 24VDC
"E" = 48VDC

Options (applied in this order):
Blank = Std. Options (Bottom Mount, Without Aux, Contact & Polarized Load Terminals)
"A" = With Aux. Contact (SPST-NO)
"B" = Normally Closed Aux. Contact (SPST-NC)
"S" = Side Mount Version
"N" = Non-Polar Load Terminals

MAIN CONTACT		
Contact Arrangement		1 Form A (SPST-NO)
Load Connection		M5 screw thread female
Rated Load Voltage		12-900VDC
Max Breaking Limit		1250A 1 cycle @320VDC
Dielectric Withstanding Voltage	Between Open Contacts	2200Vms, 1 min., < 1mA
	Between Contacts to Coil	
Insulation Resistance @ 500VDC		100;50 at end of life
Voltage Drop (100A)		≤60mV
Mechanical Life		1M cycles

EXPECTED LIFE	
Load Life (Resistor Load)	100A/450VDC；10,000 cycles 50/450VDC；50,000 cycles 200A/-450VDC；1,000 cycles 300A/-450VDC；500 cycles

AUX. CONTACT	
Aux ContactArrangement	1 From A
Aux Contact Current Max	0.5A @28VDC
Aux. Contact Resistance Max.	0.5ohms@30VDC

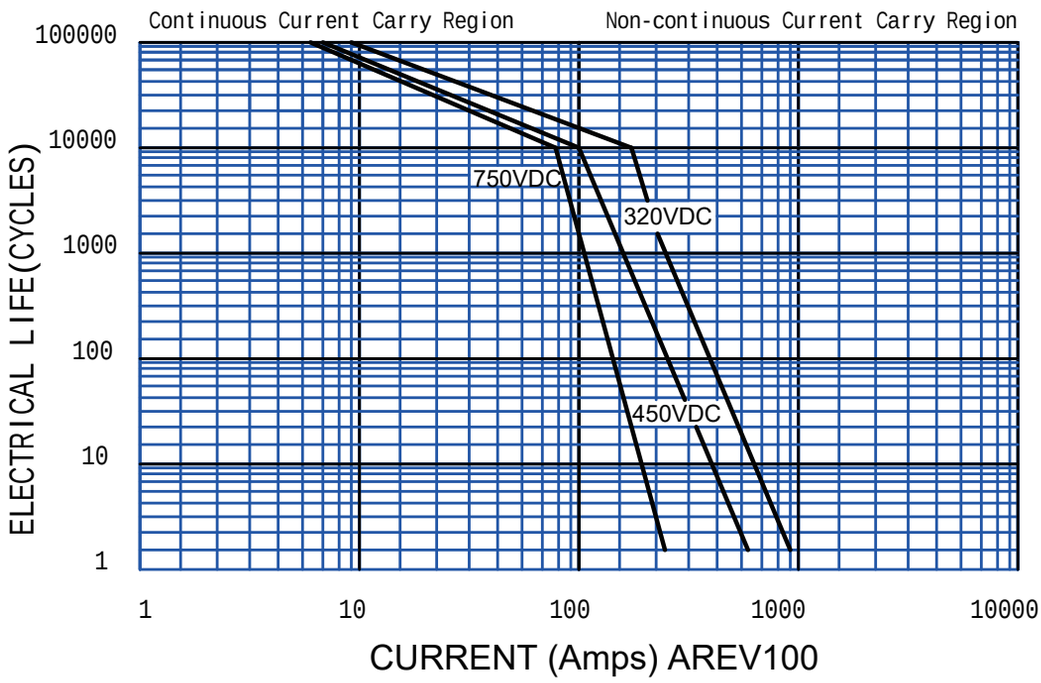
ENVIRONMENTAL DATA	
Shock, 11ms 1/2 sine, peak, operating	20G
Vibration, sine, 80-2000Hz., peak	20G
Operating Temperature	-40 to +85˚C
Altitude	<4000m
Weight	190g

OPERATE TIME @ 25°C	
Close (includes bounce)	25ms, Max.
Bounce (after close only)	5ms, Max.
Release (include arcing)	10ms, Max.

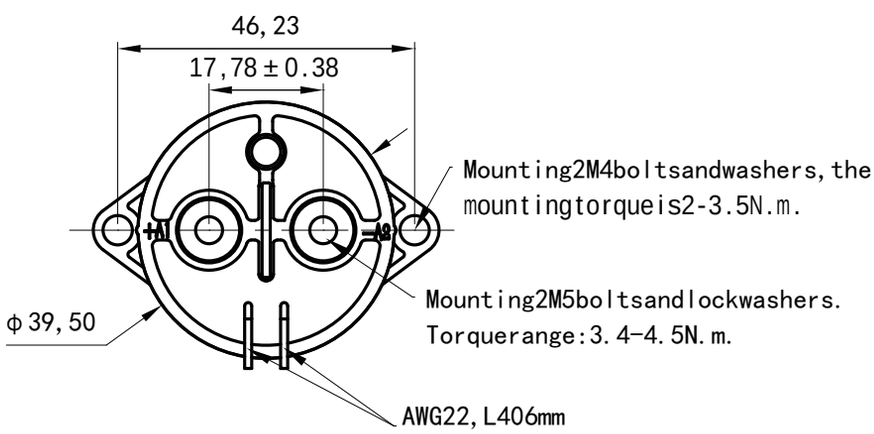
COIL DATA			
Coil Code	B	C	E
Rated Voltage*	12VDC	24VDC	48VDC
Max Operate Voltage	16VDC	28VDC	52VDC
Pick Up Voltage (20°C) Max.	9VDC	18VDC	36VDC
Release Voltage (20°C) Max.	1VDC	2VDC	4VDC
Coil Current (20°C@Rated Voltage)	0.461A	0.461A	0.461A
Coil power (20°C@Rated Voltage)	6W	6W	6W
Max Pick-Up Voltage (85°C)	9.6VDC	19.2VDC	38.4VDC
Coil Resistance ± 10% (20°C)	3 Ω	10 Ω	40 Ω

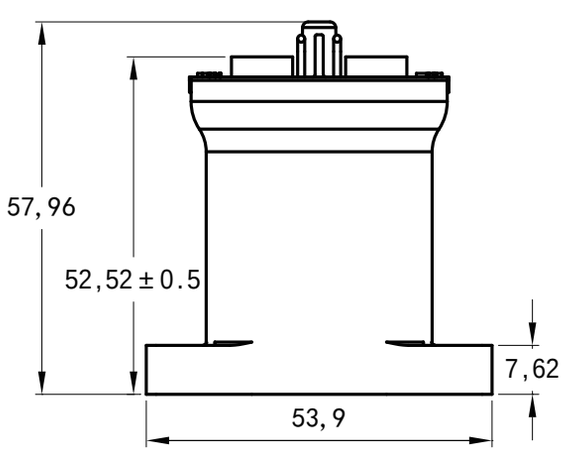
Short Time Overload Current	
100A @85°C	Continuous
150A @40°C	15 Minutes
200A @40°C	3 Minutes
300A @40°C	30 Seconds

Estimated Make & Break Power Switching Ratings



Outline Dimensions (mm)





Application Notes

1. To prevent loosening, split washers should be used whenever the contactor is installed. All terminals or copper 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.
    - Contact torque: 30 - 40 lb.in (3.4 - 4.5 N.m) Max.
    - Mounting torque: 20 lb.in (2.3 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. Avoid installing the contactor in a robust magnetic field environment (near transformers or magnets) and avoid placing the contactor near objects with heat radiation.
4. 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 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.
5. When the voltage applied to the coil exceeds the maximum allowable applied voltage, the coil temperature may rise, leading to coil damage and inter-layer short circuit.
6. The rated values in the contact parameters are values for a resistive load. When using an inductive load with L/R>1ms, please connect a surge current protection device to the inductive load in parallel. If measures are taken, the electrical life may be maintained, and the continuity may be suitable. Please consider sufficient margin space in the design.
7. Drive power must be greater than coil power, or it will reduce performance capability.
8. Please do not allow debris and oil to adhere to the main terminals. Ensure 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.
9. The load conductor must have the corresponding current load capacity and heat dissipation capacity (it is recommended to use a copper bar with a 50mm^2) to prevent overheating and affecting the life of the contactor.
10. It's only possible to determine some of the performance parameters of contactors in each application. Therefore, customers should choose the products matching them according to their conditions of use. If in doubt, contact Altran; however, the customer will be responsible for validating that the products meet their application.
11. Do not use if dropped.
12. 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.