High Voltage DC Contactor
AREV250L Latching Series
500A+/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

✓Bi-directional options
✓Side mount

Certification Information

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

Nomenclature

AREV250L	B	-	AN

Series code:
“AREV250L” = AREV250L

Latching Coils:
"B " = 12 VDC
"C " = 24 VDC
"E " = 48 VDC

Latching Coil Wiring Options:
"2 " = 2 Wire, Single Coil
"3 H" = 3 Wire, Dual Coil (High side drive)
"3 L " = 3 Wire, Dual Coil (Low side drive)
"4 " = 4 Wire, Dual Coil

Options:
Blank = Std. Options (Bottom Mount, Without Aux. Contact & Polarized Load Terminals)
“A” = With Aux. Contact (SPST-NO)
“B” = With Aux. Contact (SPST-NC)
"C " = With Aux. Contact (SPDT)
"N" = Non-Polar Load Terminals

MAIN CONTACT		
Contact Arrangement		1 Form X (SPST-NO)
Load Connection		M8 Thread Male
Rated Load Voltage		1000VDC
Max Breaking Limit		2,000A @320VDC, 1 Cycle
Dielectric Withstanding Voltage	Between Open Contacts	4000Vms, 1 min., < 1mA
	Between Contacts to Coil	2200Vms, 1 min., < 1mA
Insulation Resistance @ 500VDC		New: 100M Ω End of Life: 50M Ω
Voltage Drop (200A)		≤60mV

EXPECTED LIFE	
Load Life (Resistor Load) 250A/450VDC	10,000 Cycles
Mechanical Life	200,000 cycles

AUX. CONTACT	
Aux ContactArrangement	1 From A
Aux Contact Current Max	2A @30VDC/3A @125VAC
Aux Contact Current Min	100mA@8V
Aux. Contact Resistance Max.	0.417ohms@30Vdc 0.150ohms@125Vac

ENVIRONMENTAL DATA		
Shock	Functional	196m/s² Sine half-wave pulse
	Destructive	490m/s² Sine half-wave pulse
Operating Temperature		-40 to +85˚C
Altitude		<4000m
Weight		0.95 Lb (0.43 kg)

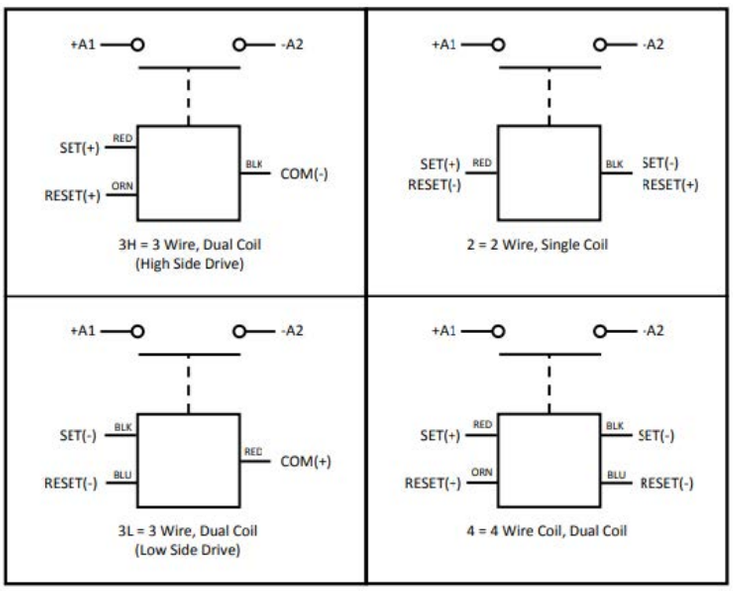
OPERATE TIME @ 25°C	
Close (includes bounce)	30ms, Max.
Bounce (after close only)	5ms, Max.
Release (include arcing)	10ms, Max.

LATCHING DUAL COIL (3&4 WIRE)				
Coil Code		B3H,B3, B4	C3H,C3L, C4	E3H, E3L E4
Rated Voltage*		12VDC	24VDC	48VDC
Set Coil (20°C)	Max. Voltage	16VDC	28VDC	52VDC
	Must Set Voltage (Max.)	7VDC	18VDC	36VDC
	Rated Current	6A	2.7A	2.4A
	Coil Resistance ± 10%	2 Ω	8.8 Ω	20 Ω
Reset Coil (20°C)	Max. Voltage	16VDC	28VDC	52VDC
	Must Set Voltage (Max.)	7VDC	18VDC	36VDC
	Rated Current	4A	2.5A	1.6A
	Coil Resistance ± 10%	3Ω	9.6Ω	30Ω

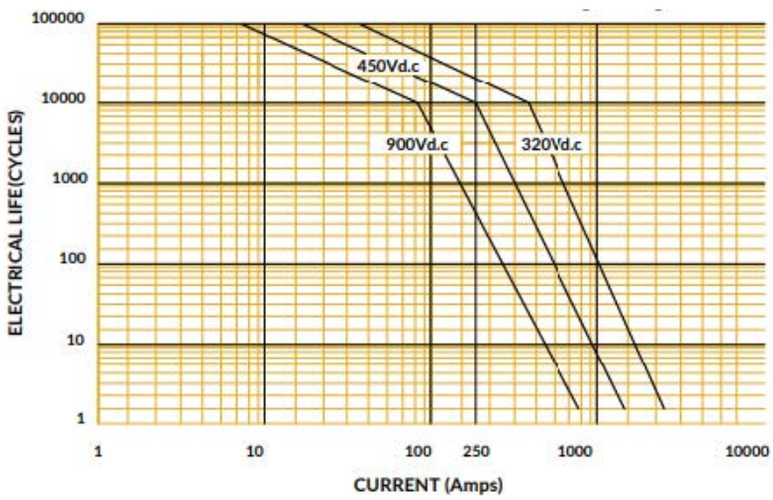
LATCHING SINGLE COIL (2 WIRE)			
Coil Code	B2	C2	E2
Rated Voltage*	12VDC	24VDC	48VDC
Max Operate Voltage	16VDC	28VDC	52VDC
Must Set and Reset Voltage (20°C) Max.	9VDC	18VDC	36VDC
Coil Current (20°C@Rated Voltage)	4.0A	2.4A	1.2A
Max Pick-Up Voltage (85°C)	11.1VDC	19.2VDC	38.4VDC
Coil Resistance ± 10% (20°C)	3 Ω	10 Ω	40 Ω

Short Time Overload Current	
400A @85°C	Continuous
500A @40°C	2 Minutes
600A @40°C	10 Seconds

Latching Coil Wiring



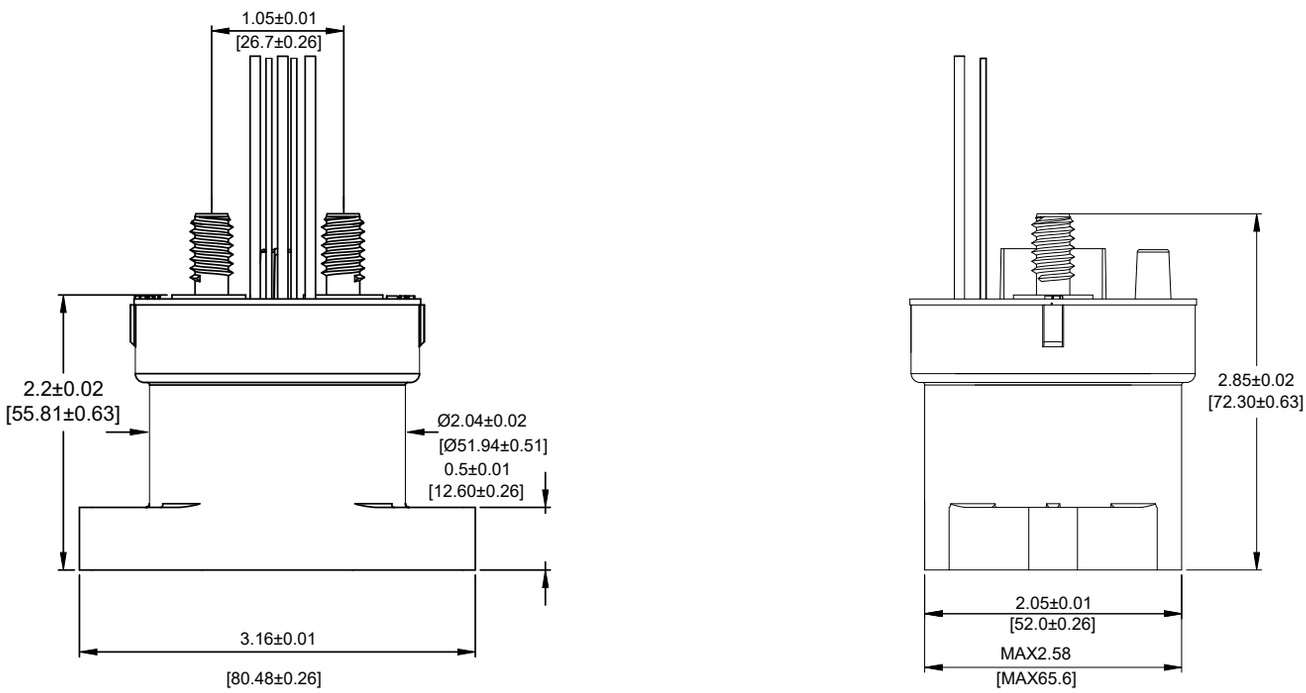
Estimated Make & Break Power Switching Ratings

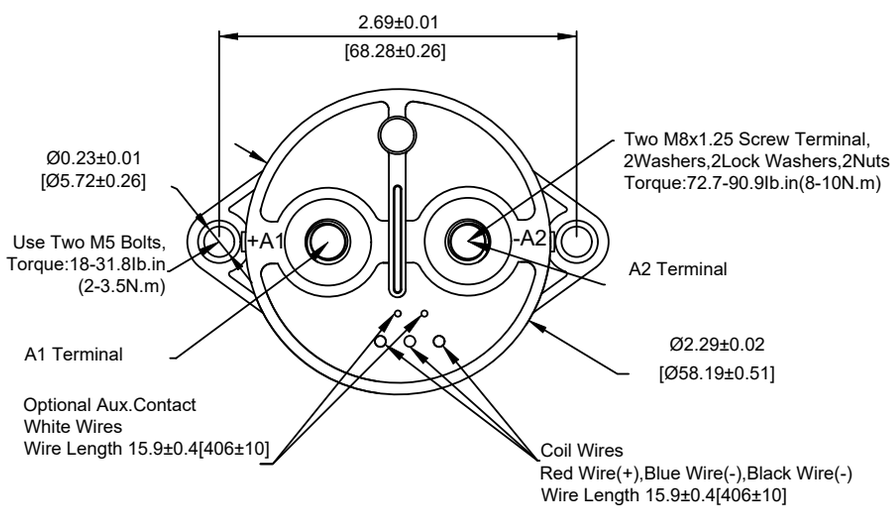


Performance Data

Outline Dimensions (mm)

Latching Contactor





*Note: The wire size is 22 AWG.

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: 70-90 lb. in. (8-10 N.m)
    - Mounting torque: 15-30 lb. in. (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. 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 50mm2) 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.