

Features

HIGH CURRENT CARRY AND HIGH VOLTAGE

Inert gas filled arc chamber suitable for high voltage switching

COMPACT STRUCTURE, LOW NOISE

Small, low-profile designs with low noise while carrying or switching loads

COIL ECONOMIZER

Economized coils 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 contact resistance

NO SPECIFIC MOUNTING ARRANGEMENT

Mountable in any orientation without reduction of performance

VARIOUS APPLICATIONS

Battery Disconnect, EV and Charging, Energy Storage Systems, Photo Voltaic, Power Control, Circuit protection and much more

Sealing Type: Epoxy Resin

- ✓ Normally Closed Main Contacts Available



Certification Information

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

Nomenclature

APV500 - B N

Series code:
"APV500" = APV500

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

Coil Voltage Code:
"B" = 12 VDC
"C" = 24 VDC
"E" = 48 VDC
"M" = 12-24 VDC
"G" = 48 VDC
"P" = 12-24 VDC
"Q" = 48 VDC

Blank = Std.Options (Without Aux.)
"A" Normally Open with Aux. Contacts
"B" Normally Closed Aux Contacts.
"N" = Non-Polar Load Terminals

PCB Mount DC Contactor
APV500 Series
500A+/900VDC



Product Data Sheet

MAIN CONTACT		
Contact Arrangement		1 Form X (SPST-NO)
Max. Switching Voltage		900 VDC
Rated current		500A
Short Term Current		3000A@450VDC(1s)
Dielectric Withstanding Voltage (initial)	Between Open Contacts	4000VDC 1mA 1min
	Between Contacts to Coil	2200VAC 1mA 1min
Insulation Resistance (Initial)	Terminal to Terminal	Min. 1000 M Ω @1000 VDC
	Terminals to Coil	
Contact Voltage Drop (initial)		\leq 30mV@100A
Limit Breaking		2000A@450VDC, 1 Cycle

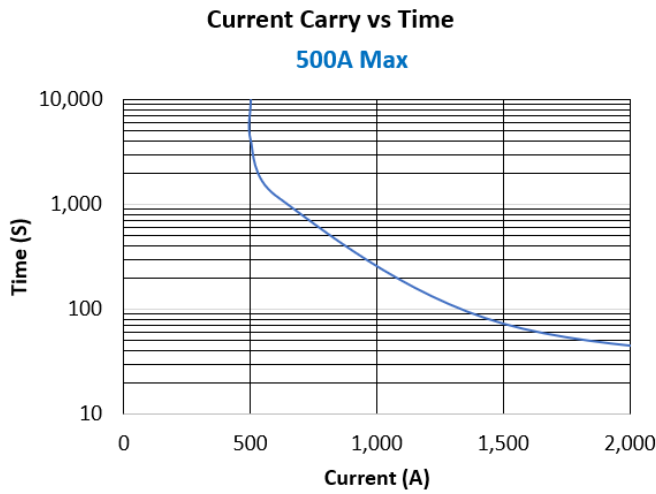
OPERATE / RELEASE TIME	
Operate Time (includes bounce)	30ms Max. @20°C
Release Time	12ms Max. @20°C

ENVIRONMENTAL DATA		
Shock	Functional	196m/s ² Sine half-wave pulse
	Destructive	490m/s ² Sine half-wave pulse
Operating Temperature		-40 to +85°C
Humidity		5% to 85%RH
Weight		0.95Lb (0.43kg)

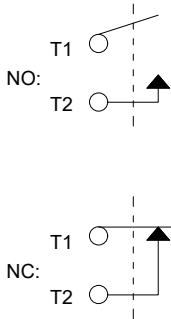
EXPECTED LIFE	
Electrical Endurance (Make/Break) 100A@1000VDC	50 Cycle
Electrical Endurance (Make/Break) 50A@1000VDC	1000 Cycle
Mechanical Life	200,000 Cycles

AUX. CONTACT	
Aux Contact Arrangement	1 Form 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

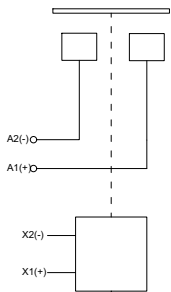
Current Carry Curve



Auxiliary contacts




Power Contacts

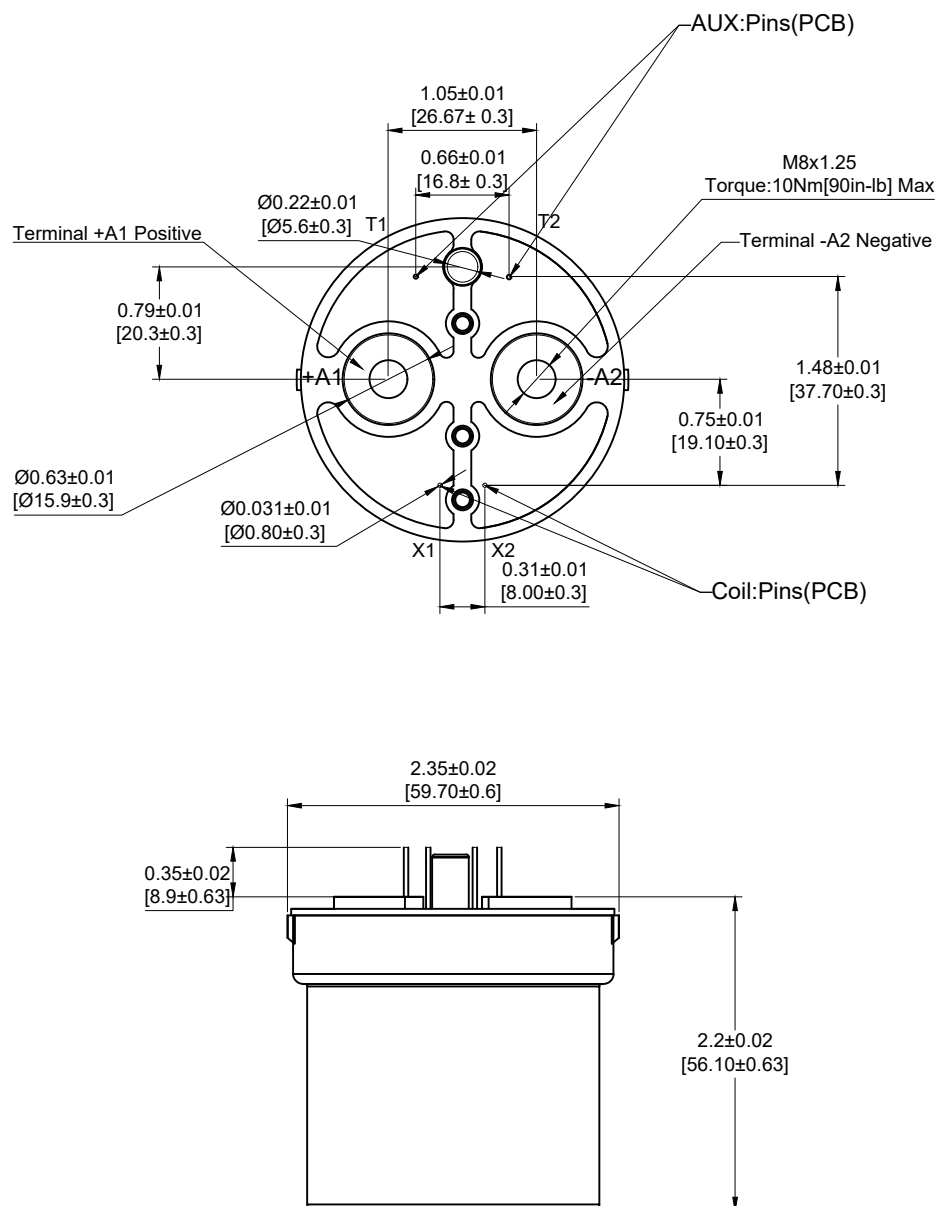


- Note:
1. Do not meet dielectric & IR after the test.
 2. ON:OFF= 1s:9s.
 3. The ambient environment of application should not cause any dewing or icing inside the relay. Otherwise, the relay may fail to work consequently.

Product Data Sheet

COIL DATA							
Coil P/N Designation	B	C	E	M	G	P	Q
Rated Voltage	12VDC	24VDC	48VDC	12-24VDC	48VDC	12-24VDC	48VDC
Coil Type	Dual	Dual	Dual	PWM	PWM	External PWM	External PWM
Coil Voltage, Max (V)	16VDC	32VDC	64VDC	36VDC	72VDC		
Max. Pickup Voltage	8VDC	16VDC	40VDC	9VDC	32VDC		
Min. Drop-out Voltage	0.5VDC	2VDC	4VDC	6VDC	18VDC		
Pick-Up Current, Max (75 ms)	3.9A	1.6A	0.97A	3.8A	1.3A		
Coil Current	0.23A	0.097A	0.042A	0.13A	0.03A		
Coil Power	2.8W	2.3W	2W	2W	2W		
Internal Coil Suppression				N/A			
Coil Back EMF	55VDC	55VDC	125VDC	0VDC	0VDC		
Reverse Polarity	16VDC	32VDC	64VDC	100VDC	100VDC		

Outline Dimensions : inches (mm)



Application Notes

1. To prevent loosening, split washers should be used whenever the contactor is installed. All terminals or conductors must be in direct contact with 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.
 - Contact torque: (M8) 80-100 lb. in. (8.8 - 11 N.m)
 - Mounting torque: 15 - 30 lb. in. (1.7 - 3.3 N.m) Max.
2. Products with a coil economizer are already equipped with back EMF circuits, so there is no need to use surge protectors.
3. Avoid installing the contactor in a strong 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 relay contacts, 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.
5. When the 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 period, or the coil economizer of the contactor may be damaged.
6. When the voltage applied to the coil exceeds the maximum allowable applied voltage, the coil temperature may rise, leading to coil damage and interlayer 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 measures are taken, the electrical life may be maintained, and the continuity may be suitable. Please consider sufficient margin space in the design.
8. Coil drive 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; ensure that the central 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. The load conductor must have the corresponding current load capacity and heat dissipation capacity to prevent overheating and affecting the life of the contactor.
11. Determining the performance parameters of contactors in each application is impossible. Therefore, customers should choose the products according to their conditions of use. If in doubt, contact Altran. The customer will be responsible for validating that the products meet their application.
12. Do not use if dropped.
13. Altran reserves the right to make product changes as needed. Customers should reconfirm the specification's contents or ask us to supply a new specification if necessary.