

EV210 Series Contactor

500+ Amps, 1000Vdc

EV210 series high-voltage DC contactor is designed for control. in new energy applications. The EV210 product line is an innovative and reliable solution for EV charging stations, solar inverters, battery energy storage systems, automated-guided vehicles (AGV) and e-Forklifts. EV210 is hermetically sealed with high performance dielectric epoxy technology and enable high switching capability up to 1000VDC. The built-in PWM module design makes it smaller to save space.

Features

- Intrinsically safe, operates in explosive/harsh environments with no oxidation or contamination of coil or contacts, during long periods of non-operation.
- Versatile coil/power connections
Designed to be the smallest, lightest weight, lowest cost sealed contactor in the industry with its current rating (500+A carry, 1000VDC interrupt).
- Built-in coil economizer — only 1.7W hold power @ 12VDC and it limits back EMF to 0V.
- Both auxiliary contacts normally open and normally closed versions for easy monitoring of power contact position.
- Hermetically sealed.
- UL Recognized for the U.S. and Canada (File E208033).
- RoHS compliant.



550 Linden Ave, Carpinteria, CA 93013
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TITLE

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PREP. BY J. Salazar 11/15/2023

DWG NO.

CHKD. BY T. Ngo 11/15/2023

DS-EV210 Series

ENG APRVL B. Buss 11/15/2023

CAGE CODE

SUL03

SCALE

none

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General Specifications

REV.
A1

Physical Data

Units

Contact Arrangement: Main Contacts		1 Form X (SPST-NO-DM)
Auxiliary contacts		1 Form A (SPST-NO) 1 Form B (SPST-NC)
Dimensions	In[mm]	See Sheet 4
Sealing		Hermetic
Weight, Nominal	lb.(kg)	.95 (.43)

Environmental Data

Shock, 11ms 1/2 sine, peak, operating	G _{peak}	20
Sine Vibration, 20 G _{peak}	Hz	80-2000
Operating Temperature Range	°C	-40 to +85

Electrical Data

Rated Operating Voltage	Vdc	12-1000
Continuous (Carry) Current, Typica	A	500A @ 85°C, 400 mcm conductors
Break Currents		320Vdc, 2000A, 1 cycle 1000Vdc, 500A, 1 cycle
Contact Resistance, Typ. (@200A)	mΩ	0.2
Aux. Contact Current, Max	A	2A@30VDC/ 3A@125VAC
Aux. Contact Current, Min	A	10mA@5VDC
Aux. Contact Resistance, Max	A	0.417ohms @ 30VDC / 0.150ohms @ 125VAC
Mechanical Life	Cycles	100000
Dielectric Withstand Voltage	Vdc	4250
Insulation resistance @ 500VDC	Megohms	100

Coil Data

Coil Operating Voltage (Valid over temperature range)			
Coil Voltage, Nominal/max	Vdc	9-36	24-48
Pickup voltage	Vdc	≥9	≥20
Dropout Voltage	Vdc	≤6	≤15
Inrush Current (Max.) @25°C	A	3.8	
Holding Current (Avg.) @25°C	A	0.13A @12V 0.07A @24V	0.25A @24V 0.25A@48V
Inrush Time (Max.)	ms	130ms	
Main Contacts: Operate Time @25°C			
Operate Time (max)	ms	20	
Operate Bounce (max)	ms	7	
Release time	ms	6	



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DS-EV210 Series

THIRD ANGLE PROJECTION



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none

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Part Numbering System

Typical PN

EV210**H****A****A****N****A**

Series: EV210 = 500 Amp

Contact Form: H = Normally Open with NO Aux. Contacts
G = Normally Open with NC Aux. Contacts

Coil Voltage:

A = 9-36VDC

X = 24-48 VDC

Wire Lengths:

A = 15.3 in (390 mm)

Coil Termination:

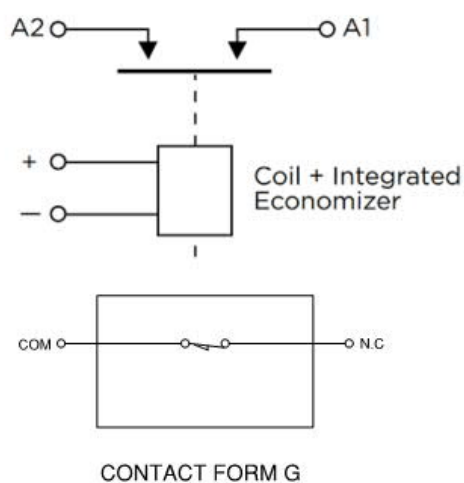
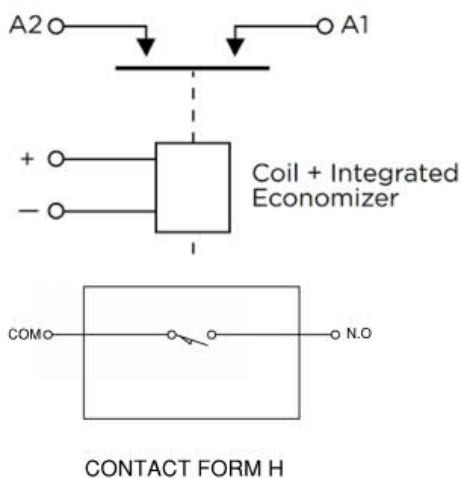
N = None

Mounting:

A = Bottom Mount & Male 10mm x M8 Terminals

B = Bottom Mount & Female 10mm x M8 Terminals

Schematic

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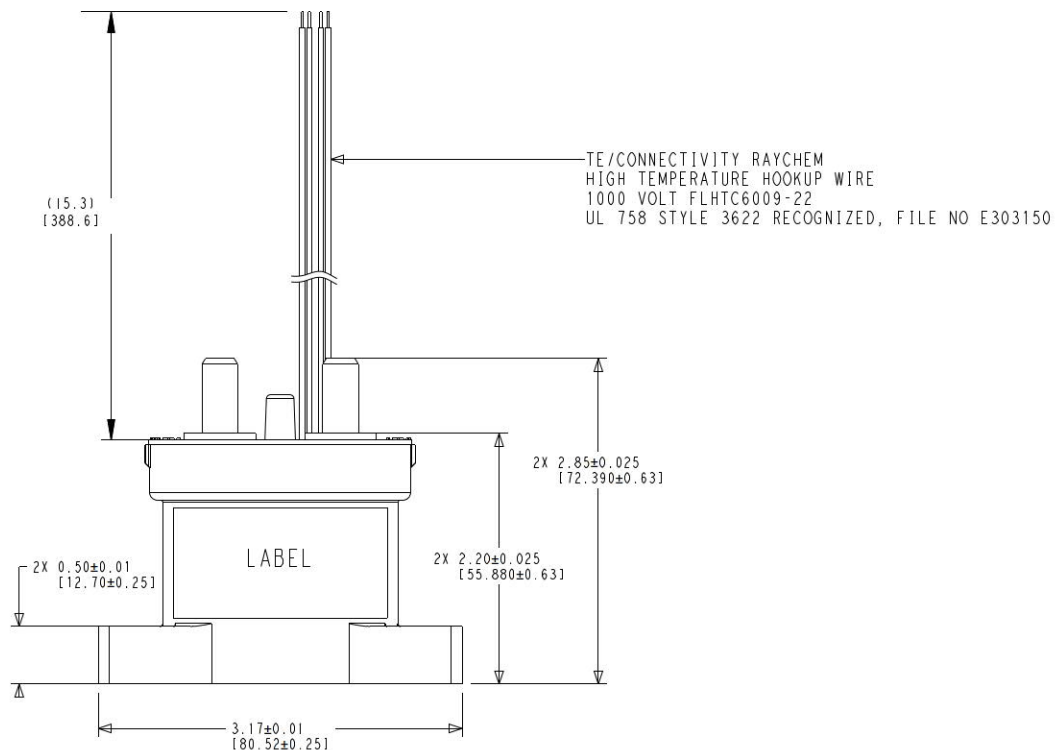
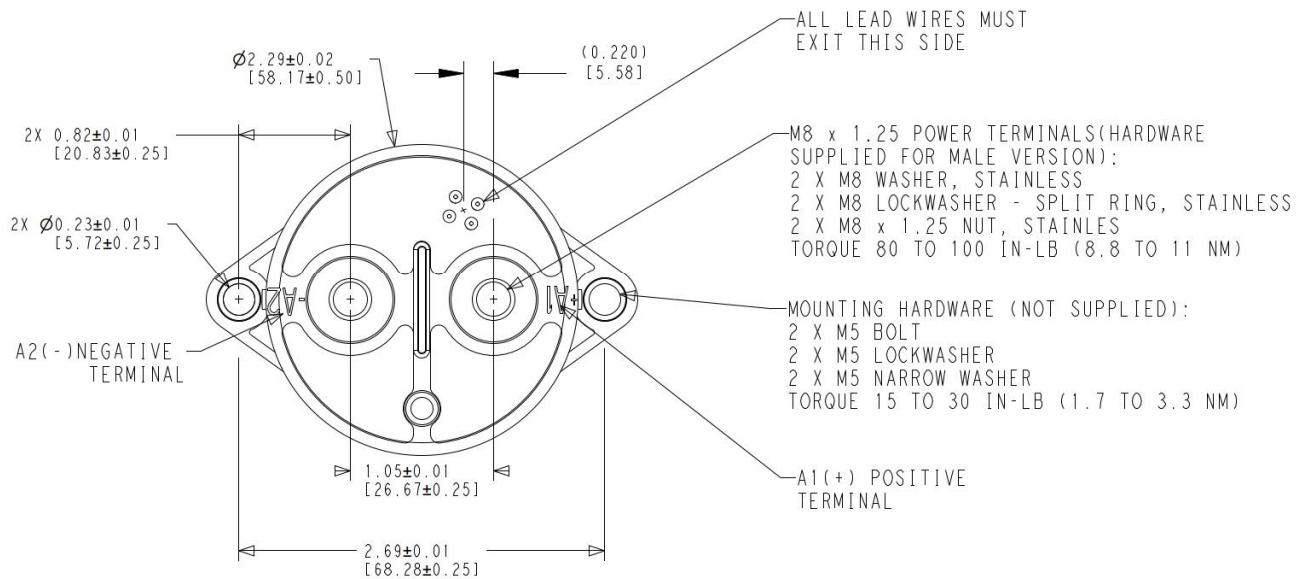
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Part Drawing

REV.
A1



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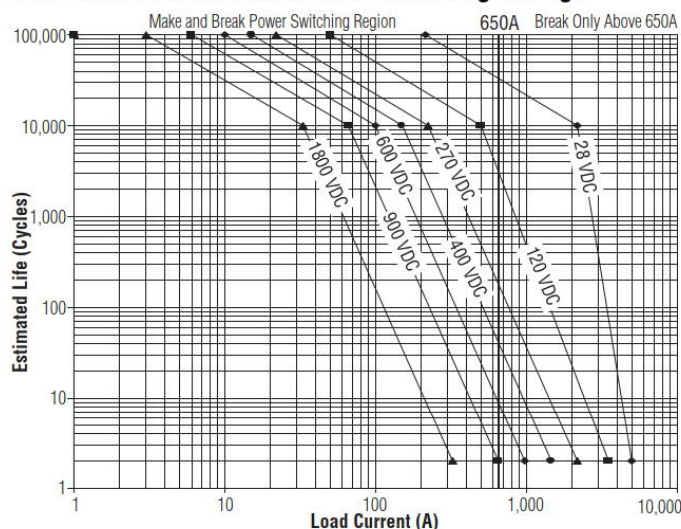
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Estimated Make & Break Power Switching Ratings



NOTES:

- 1) For resistive loads with 300 μ H maximum inductance. Consult factory for inductive loads.
- 2) Estimates based on extrapolated data. User is encouraged to confirm performance in application.
- 3) End of life when dielectric strength between terminals falls below 50 megohms @ 500VDC.
- 4) The maximum make current is 650A to avoid contact welding.

Electrical Load Life Ratings for Typical EV Applications

Make/Break Life Capacitive & Resistive Loads at 320VDC (1) (2)

@90% capacitive pre-charge (make only) see chart below	Cycles	50,000
@80% capacitive pre-charge (make only) see chart below	Cycles	50
@200A make/break (2 consecutive, reverse polarity) (1)	Cycles	12
2,000A (break only) (1)	Cycles	1*

Mechanical Life

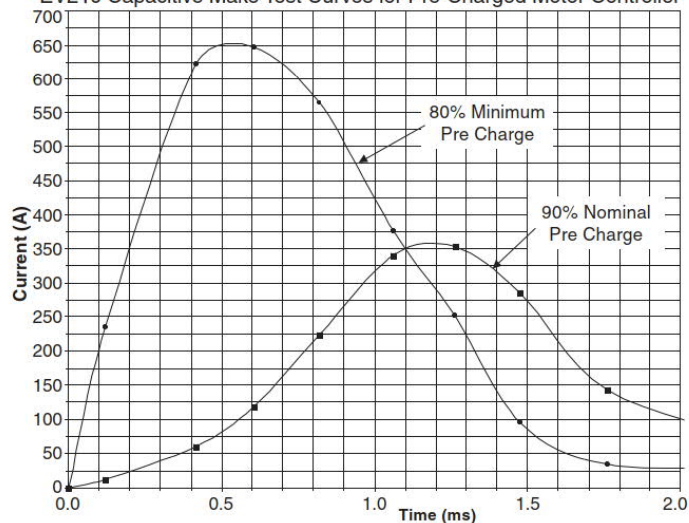
Cycles 1 million

(1) Resistive load includes inductance $L = 25\mu$ H. Load @ 2500A tested @ 200 μ H.

(2) Life based on projected Weibull Life with 95% teliability.

* Does not meet dielectric and IR after test.

EV210 Capacitive Make Test Curves for Pre-Charged Motor Controller



Revisions

REV	DESCRIPTION	DCO	APPROVAL AND DATE
A	INITIAL RELEASE	16588	Jose Salazar 09/28/2023
A1	CORRECTION ON NOTE 1, GRAPH MAKE & BRAKE POWER SWITCHING RATINGS	16590	Jose Salazar 11/15/2023



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