

# REC35 SERIES

High Voltage Contactors

**500A** CONTINUOUS DUTY

**1000V** SYSTEM VOLTAGE



## FEATURES

### SPST Normally Open High Voltage Contactors

- Hermetic seal with gas fill
- Optional auxiliary contacts – for main position feedback
- Integrated coil economizer to reduce coil holding power
- Meets RoHS 2011/65/EU
- CE certified
- UL recognized (File E536110). Please refer to UL file for specific part numbers that are recognized



**PERFORMANCE**

TABLE 1. SPECIFICATIONS		
CHARACTERISTIC	MEASURE	
Contact Arrangement	Form X, SPST NO	
Max Switching Voltage	1000 VDC	
Dielectric Withstand Voltage Contacts to Coil	2,200 VAC, 1 minute	
Dielectric Withstand Voltage Across Open Contacts	4,000 VDC, 1 minute	
Continuous Current (2 x 127mm <sup>2</sup> conductor)	500A	
Overload Current	1 minute	1,000A
	5 Minutes	650A
Make and Break	See table	
Max Short Circuit Current -1 second	3,000 A	
Min Insulation Resistance	1,000 Mohm @ 1,000V	
Contact Voltage Drop (Max)	125mV @ 250A	
Operate Time (Max, incl bounce)	25ms	
Release Time (Max)	12ms	
Shock - Functional, 1/2 Sine, 11ms	20G	
Shock – Destructive, 1/2 Sine, 11ms	50G	
Operating Temperature	-40°C to 85°C	
Ingress Protection	Exceeds IP69, (Hermetically sealed)	
Mechanical life	500,000	
AUXILIARY CONTACTS	MEASURE	
Contact Arrangement	SPST	
Continuous Current	2A	
Minimum Current	1mA @ 12V	
COIL (all data at 20°C ambient)	J, K, L coil options	M, N coil options
Nominal Voltage	9-36 VDC	32-95V
Pick-up Voltage (Max)	9 VDC	32 VDC
Drop-out Voltage (Min)	6 VDC	18 VDC
Inrush Current (Max), 130ms max duration	3.8A	1.3A
Holding Current	0.17A @ 12 VDC	0.05A @ 48 VDC
	0.09A @ 24 VDC	

NOTE – Current carry performance is highly dependent on conductor size and ambient temperature. Below graph is an example using 120mm<sup>2</sup> conductor at 85°C ambient

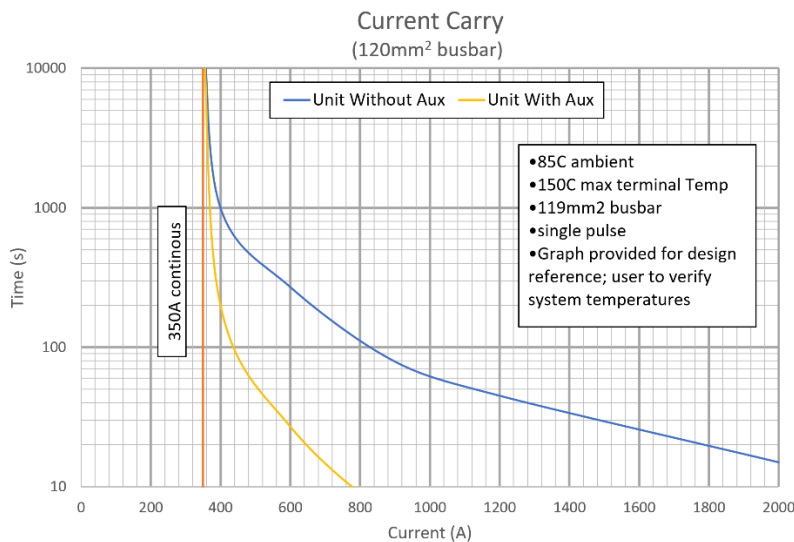


TABLE 2. RESISTIVE LOAD SWITCHING (MAKE / BREAK DATA)		
POLARITY SENSITIVE VERSION		
VOLTAGE	CURRENT	CYCLES 1 cycle = 1 make + 1 break
450V	250A	5,000
650V	250A	200
1000V	300A	1 Cycle, BREAK only
BI-DIRECTIONAL VERSION		
VOLTAGE	CURRENT	CYCLES 1 cycle = 1 make + 1 break
450V	250A	5,000
650V	250A	200

**OPTIONS**

TABLE 3. PRODUCT NOMENCLATURE				
	CONTACT POLARITY	MOUNTING	COIL	AUXILIARY CONTACTS
REC35	<b>B</b> Bi-directional	<b>1</b> Bottom Mount	<b>J</b> 9-36V integrated PWM	<b>X</b> None
			<b>L</b> 9-36V external PWM <sup>1</sup>	<b>A</b> Normally Open
	<b>P</b> Polarity Sensitive		<b>M</b> 32-95V integrated PWM	<b>B</b> Normally Closed <sup>2</sup>
			<b>N</b> 32-95V external PWM <sup>1</sup>	

<sup>1</sup> Requires customer to provide PWM control and a fast drop-out circuit for the coil (See AN0001)

<sup>2</sup> Normally Closed auxiliary contacts only available on polarity sensitive version

**PRODUCT DIMENSIONS [mm]**

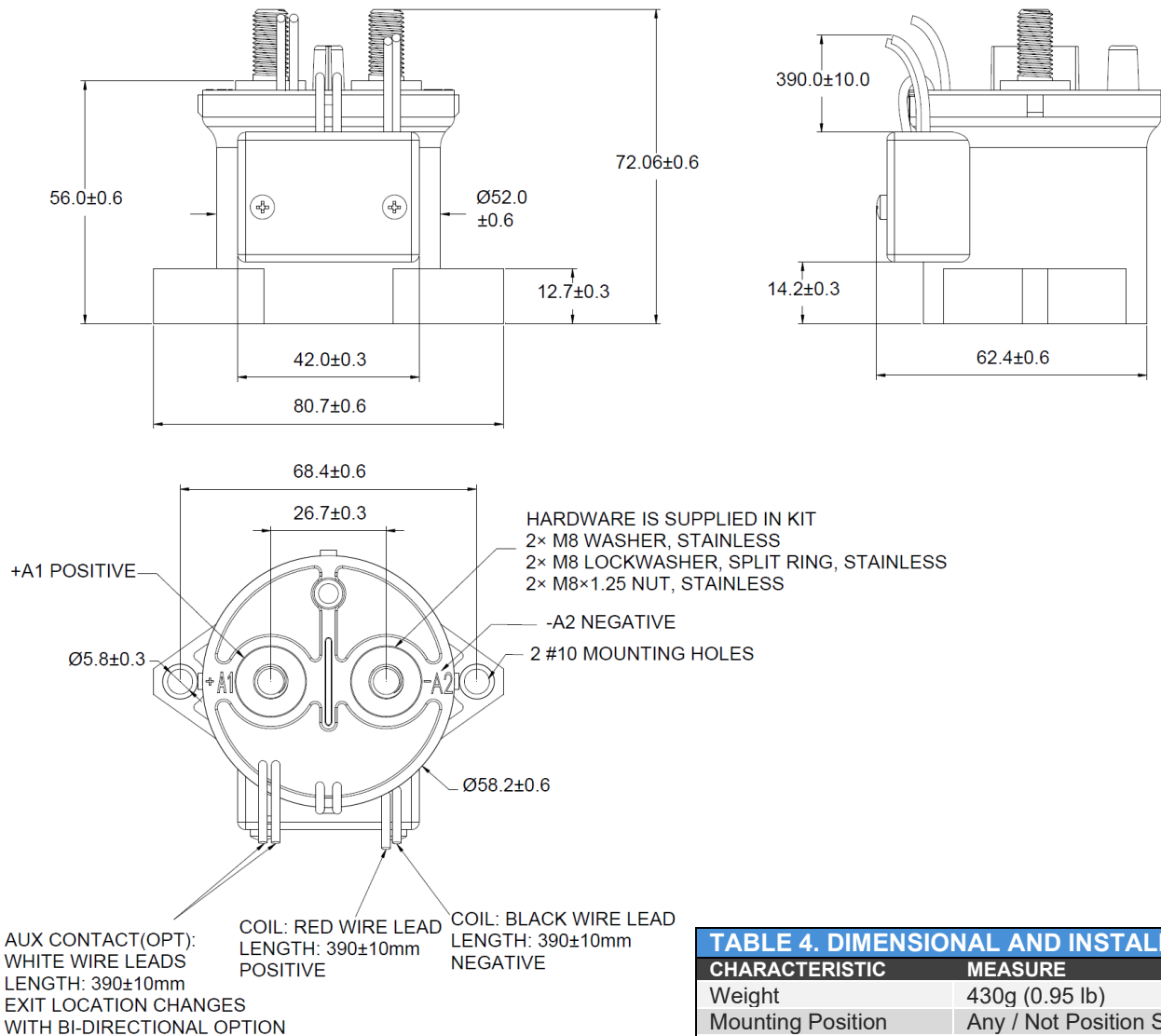
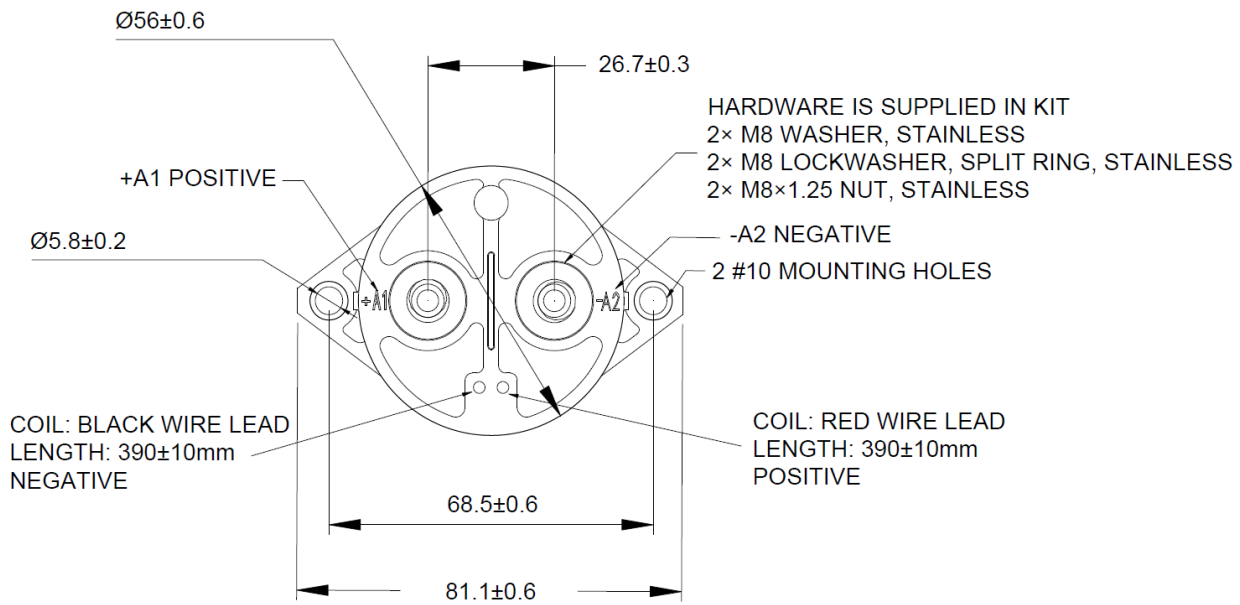
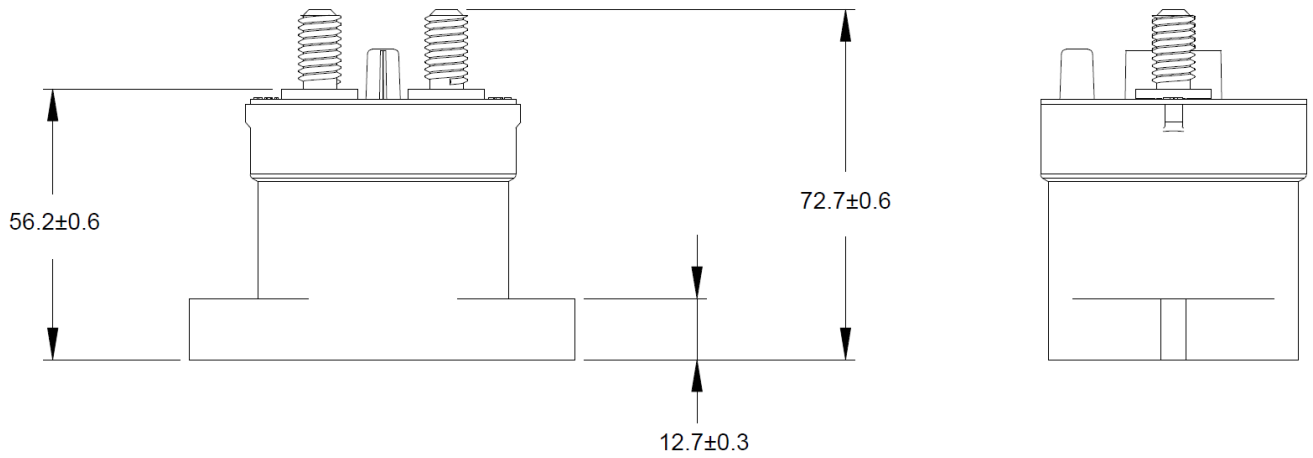


TABLE 4. DIMENSIONAL AND INSTALLATION	
CHARACTERISTIC	MEASURE
Weight	430g (0.95 lb)
Mounting Position	Any / Not Position Sensitive
Package Quantity	20 pieces
Install Torque	9-11Nm (80-97 in-lb)
M8 Main Terminals	
M5 Mounting Inserts	2-4 Nm (17-35 in-lb)

**Internal Coil Economizer Version**

TABLE 5. PRODUCT NOMENCLATURE				
	CONTACT POLARITY	MOUNTING	COIL	AUXILIARY CONTACTS
REC35	<b>P</b> Polarity Sensitive	<b>1</b> Bottom Mount	<b>K</b> 9-36V internal PWM	<b>X</b> None

**PRODUCT DIMENSIONS [mm]**



**NOTES**

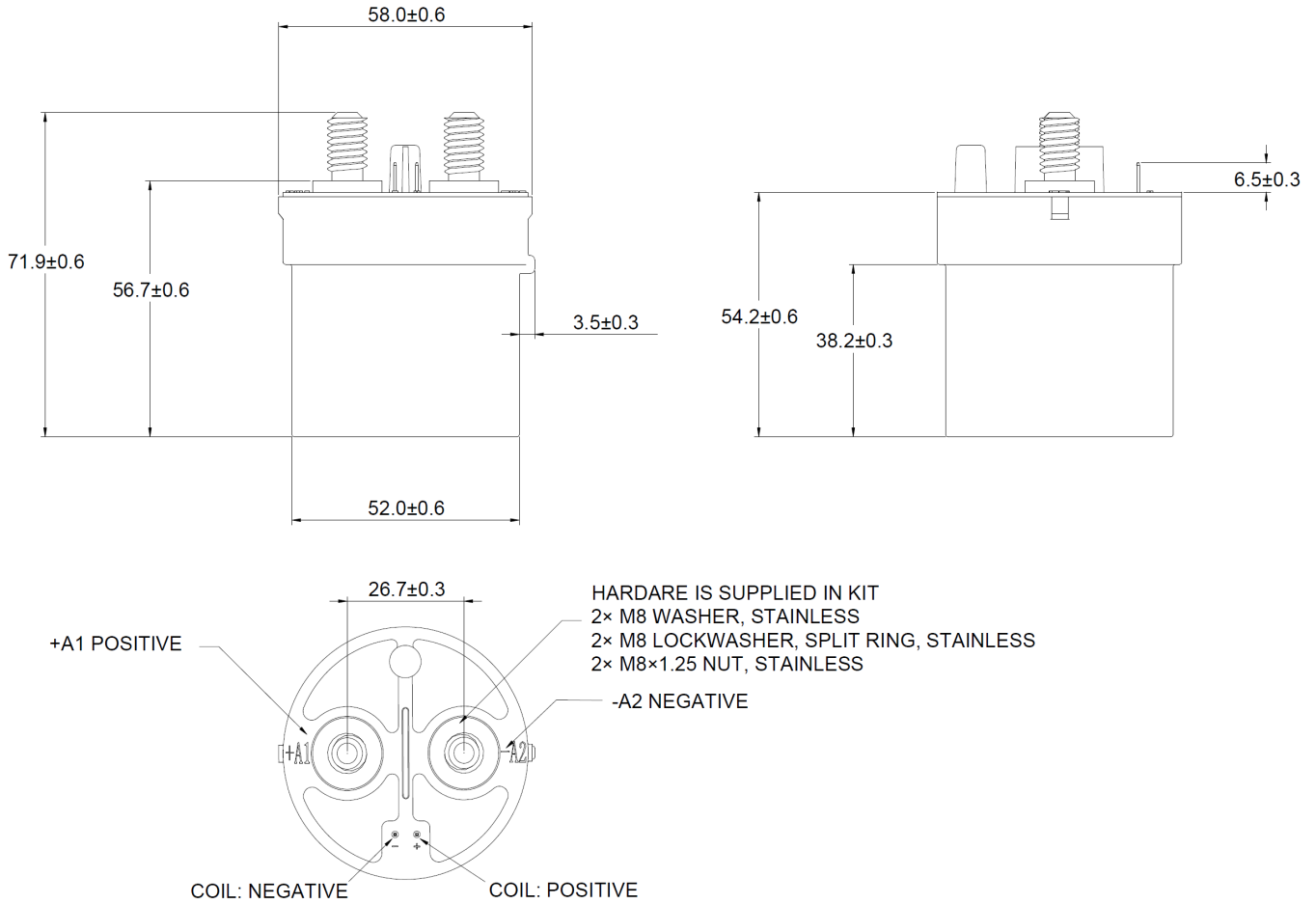
- Auxiliary contacts are not an option for the REC35 version with internal economizer (K coil) or the PCB mountable version.

**PCB Mountable Version**

**TABLE 6. PRODUCT NOMENCLATURE**

	CONTACT POLARITY	MOUNTING	COIL	AUXILIARY CONTACTS
<b>REC35</b>	<b>P</b> Polarity Sensitive	<b>3</b> PCB mount	<b>K</b> 9-36V internal PWM	<b>X</b> None

**PRODUCT DIMENSIONS [mm]**



## NOTES

- Polarity Sensitive versions are marked +A1 and -A2 for the power terminals. For applications that require the contactor to open under load, please ensure current is flowing from the +A1 to the -A2 terminal. For Bi-Directional versions the direction of current does not matter when breaking under load.
- Contactor is operated by a coil that changes resistance with temperature: Maximum coil voltage will be lower than indicated at temperatures above 25°C, and higher than indicated at temperatures below 25°C.
- Nominal Coil Voltage for Pick-up Current, Coil Current and Coil Power specifications, Current/Wattage will be lower than indicated at temperatures above 25°C and higher than indicated at temperatures below 25°C.
- Pick-up Voltage and Drop Out Voltage will be lower than indicated at temperatures below 25°C and higher than indicated at temperatures above 25°C.
- Attached cables and busbars directly to the main terminal pad using the recommended install torque. Do not use washers or other materials between the contactor and the conductor. This will ensure the lowest possible contact resistance.
- Avoid excessive coil voltages. Exceeding the ratings on the datasheet may result in high coil temperature and coil failure.
- Contactor may be used above Max Switching Voltage if the application does not require significant load breaking. Please contact Rincon Power to discuss in more detail.