

RER02 SERIES

High Voltage Contactors

40A CONTINUOUS
DUTY

1000VDC SYSTEM
VOLTAGE



DESCRIPTION

The RER02 Series are compact high voltage DC relays designed primarily for pre-charge and auxiliary DC control applications. Despite their small size, these relays provide reliable switching capability for controlled capacitor charging, DC bus discharge, and auxiliary circuit control in modern DC power systems.

Featuring a sealed construction and a widely adopted industry-standard form factor, the RER02 Series offers a cost-effective and dependable solution for applications where space is limited and full-size power contactors are not required. These relays are commonly used in electric vehicle power electronics, industrial equipment, and other DC control applications.

FEATURES

SPST Normally Open High Voltage DC Contactor

- Compact sealed DC relay construction
- Optimized for pre-charge and DC control applications
- Industry-standard footprint for easy integration
- Low power coil options available
- Fast operate and release times
- Suitable for capacitive charging and discharge circuits
- RoHS and REACH compliant

TYPICAL APPLICATIONS

- Pre-charge circuits for inverters and DC power systems
- Capacitor charging and inrush current control
- Electric vehicle power electronics
- Industrial DC control and signaling
- Auxiliary DC power switching
- HVAC system controls

For factory-direct technical support and application assistance:

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Visit <https://www.rinconpower.com/contact-us>

PERFORMANCE

TABLE 1. SPECIFICATIONS

CHARACTERISTIC	MEASURE
Contact Arrangement	Form X, SPST NO
Max Switching Voltage ¹	1000 VDC
Dielectric Withstand Voltage (Max Leakage Current: 1mA)	3,000 VAC, 1 minute contacts to coil
	3,000 VAC, 1 minute across open contacts
Continuous Current (4mm ² conductor) ^{2,3}	20A
(13mm ² conductor)	40A
Overload Current 30 seconds	80A
1 hour	30A
Max Break – 30A @ 450V	5 cycles
Max Short Circuit Current -0.5 second	200 A
Min Insulation Resistance	1,000 MΩ @ 500VDC
Contact Resistance (Max)	5.0 mΩ
(Typical)	3.5 mΩ
Operate Time (Max, incl bounce)	30ms
Release Time (Max)	10ms
Shock - Functional, 1/2 Sine, 11ms	20G
Shock – Destructive, 1/2 Sine, 11ms	50G
Operating Temperature	-40°C to 85°C
Ingress Protection	IP67,
Mechanical life	1,000,000 cycles
AUXILIARY CONTACTS	MEASURE
Contact Arrangement	Not available
COIL (20° C) ⁴	MEASURE
Nominal Voltage ⁵	12 VDC 24 VDC
Pick-up Voltage (Max) ⁶	9 VDC 18 VDC
Drop-out Voltage (Min) ⁶	0.8 VDC 1.6 VDC
Coil Resistance	48Ω 192Ω
Coil Power at Nominal Voltage ⁷	3W 3W

Current Carry 20A / 4mm², 40A / 13mm² (85°C Ambient)

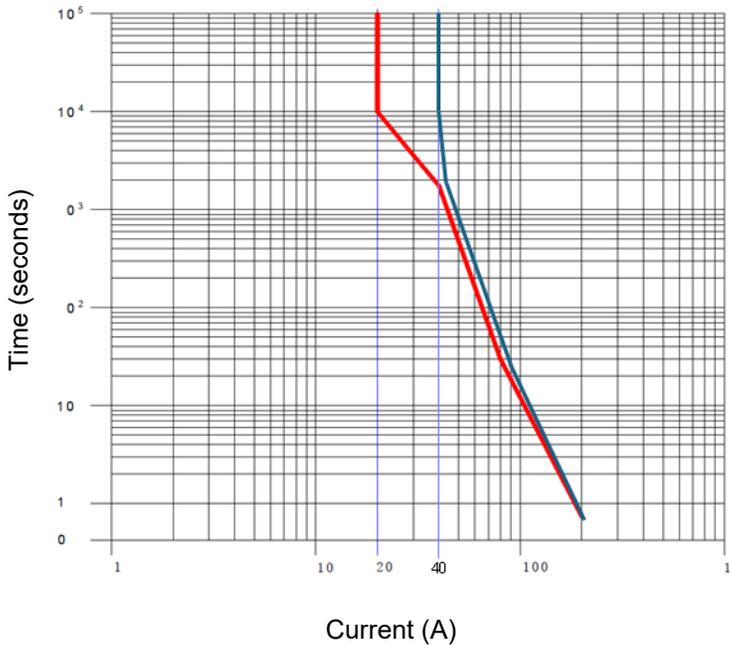


TABLE 2. RESISTIVE LOAD SWITCHING (MAKE / BREAK DATA)

POLARITY SENSITIVE VERSION		CYCLES 1 cycle = 1 make + 1 break
VOLTAGE	CURRENT	
450V	20A	50,000
450V	10A	10,000
450V	20A	75,000 (MAKE ONLY)
450V	30A	50,000 (MAKE ONLY)
800V	15A	50,000 (MAKE ONLY)
1000V	10A	30,000 (MAKE ONLY)
1000V	10A	250 (BREAK ONLY)

OPTIONS

TABLE 3. PART NUMBER CONFIGURATION

SERIES	CONTACT POLARITY	MOUNTING	COIL	AUXILIARY CONTACTS
RER02	P Polarity Sensitive	1 Bottom Mount	A 12V	X None
		3 PCB Mount	B 24V	

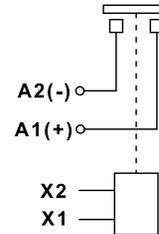
Available Part Numbers: RER02P1AX, RER02P1BX, RER02P3AX, RER02P3BX

PRODUCT DIMENSIONS [mm]

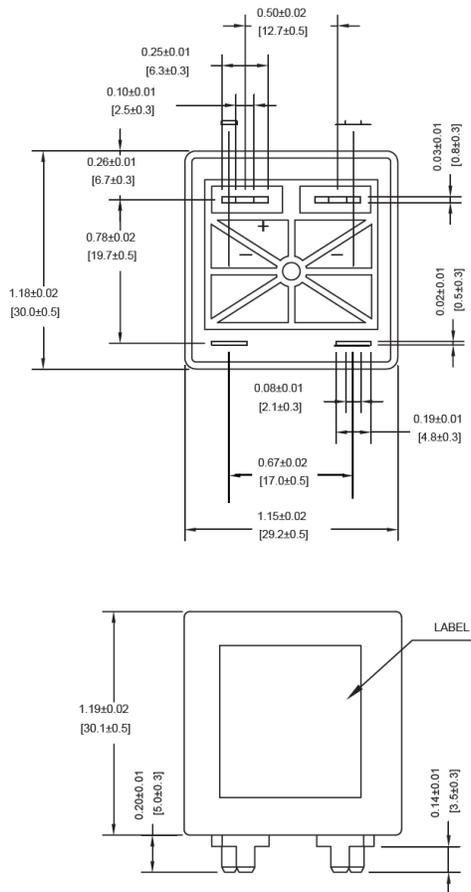
TABLE 4. DIMENSIONAL AND INSTALLATION

CHARACTERISTIC	MEASURE
Weight	50g PCB Mount Version 105g Stud Terminal Version
Mounting Position	Any / Not Position Sensitive
Package Quantity	120 (Bottom and PCB-Mount)
(PCB) Welding Parameters	Manual Welding: (350±20°C), time 3s; Wave Soldering: (265±5°C), time (3~8)s.

Power Contacts

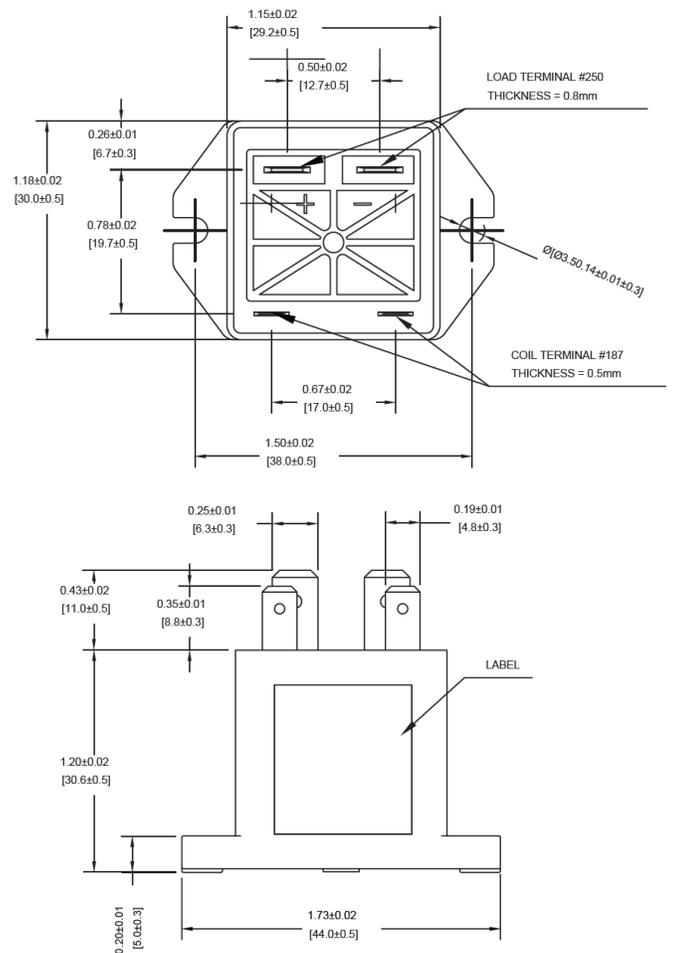


PCB Mount (RER02P3)



3D model available upon request

Bottom Mount (RER02P1)



3D model available upon request

NOTES

1. 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.
2. Attach cables and busbars directly to the main terminal pad. Do not use washers or other materials between the contactor power terminals and the conductor.
3. Continuous current tested with 85°C temperature rise at the power terminals. Terminal temperature should be limited to 150°C.
4. Coil terminals are non-polar.
5. 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.
6. 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.
7. 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.

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<https://tcs.rinconpower.com/product-datasheet-legal-disclaimer.pdf>