

RXR03 SERIES

High Voltage Contactors

50A CONTINUOUS
DUTY

1500VDC SYSTEM
VOLTAGE



DESCRIPTION

The RXR03 Series are compact ceramic-sealed high voltage DC contactors designed for precision DC switching in compact systems. With a continuous current rating of 50A and system voltages up to 1500VDC, the RXR03 Series delivers robust bi-directional switching capability for applications such as pre-charge circuits, auxiliary power control, and specialized control functions where space, reliability, and electrical integrity are critical.

The ceramic seal provides improved environmental resistance and long-term stability compared to epoxy alternatives, while the rectangular form factor supports integration in modern power systems where reliability and compact size are required. These contactors are ideal for battery management systems, renewable energy applications, industrial DC control circuits, and other systems requiring dependable small-form-factor DC switching.

FEATURES

SPST Normally Open High Voltage DC Contactor

- Ceramic-sealed DC contactor construction for enhanced environmental durability
- Compact rectangular form factor ideal for tight spaces
- Bi-directional DC switching
- SPST Normally Open contact arrangement
- Designed for continuous 50A duty at up to 1500VDC
- PCB mountable or chassis mount options available
- Fast operate and release times suitable for control circuits
- Meets RoHS 2011/65/EU and REACH compliance

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:

Call +1 805 456 6424

Email info@rinconpower.com

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

PERFORMANCE

TABLE 1. SPECIFICATIONS

CHARACTERISTIC	MEASURE
Contact Arrangement	Form X, SPST NO
Max Switching Voltage ¹	1,500 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 (8.4mm ² conductor) ²	50A
(5.3mm ² conductor)	40A
Overload Current 10 seconds	120A
30 seconds	90A
Max Break – 200A @ 1000V	1 cycle
Max Short Circuit Current -1 second	200 A
Min Insulation Resistance	1,000 Mohm @ 500VDC
Contact Voltage Drop (Max)	50mV @ 10A
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
Vibration 10Hz-2,000Hz)	6 G
Ingress Protection	IP67
Mechanical life	500,000 cycles
AUXILIARY CONTACTS	MEASURE
Contact Arrangement	Not available
COIL (20° C)	MEASURE
Nominal Voltage	12 VDC 24 VDC
Pick-up Voltage (Max) ³	9 VDC 18 VDC
Max Voltage ⁴	16 VDC 32 VDC
Drop-out Voltage (Min) ³	0.9 VDC 1.8 VDC
Coil Resistance	51.4Ω 206Ω
Coil Power at Nominal Voltage ⁵	2.8W 2.8W

Current Carry

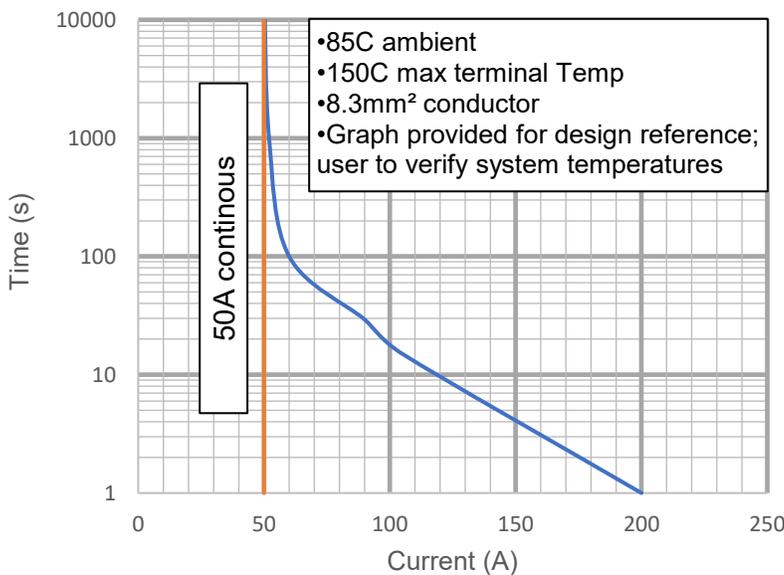


TABLE 2. RESISTIVE LOAD SWITCHING (MAKE / BREAK DATA)

POLARITY SENSITIVE VERSION		CYCLES 1 cycle = 1 make + 1 break
VOLTAGE	CURRENT	
450V	20A	75,000
450V	30A	150,000 (MAKE ONLY)
750V	20A	50,000
750V	30A	75,000 (MAKE ONLY)
1000V	20A	30,000
1000V	30A	50,000 (MAKE ONLY)
1500V	40A	15,000 (MAKE ONLY)

OPTIONS

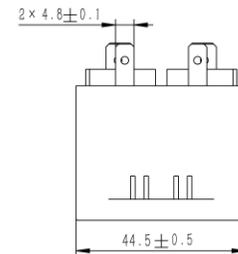
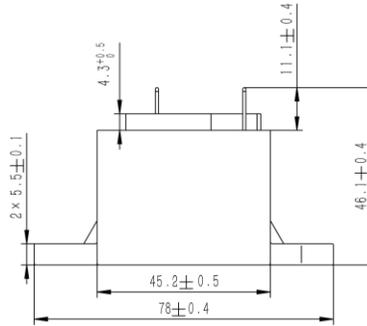
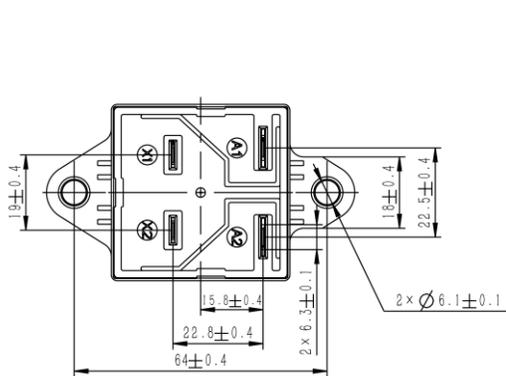
TABLE 3. PART NUMBER CONFIGURATION

SERIES	CONTACT POLARITY	MOUNTING	COIL	AUXILIARY CONTACTS
RXR03	B Bi-Directional	1 4.8mm coil blades	A 12V	X None
		3 6.3mm coil blades	B 24V	

Available Part Numbers: RXR03B1AX, RXR03B1BX, RXR03B3AX, RXR03B3BX

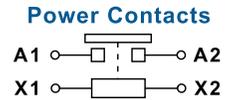
PRODUCT DIMENSIONS [mm]
4.8mm Coil Blades (RXR03B1)

3D model available upon request



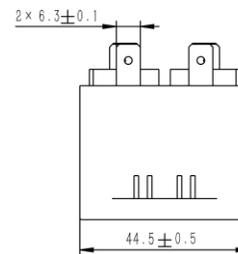
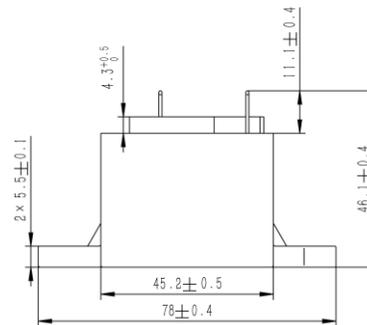
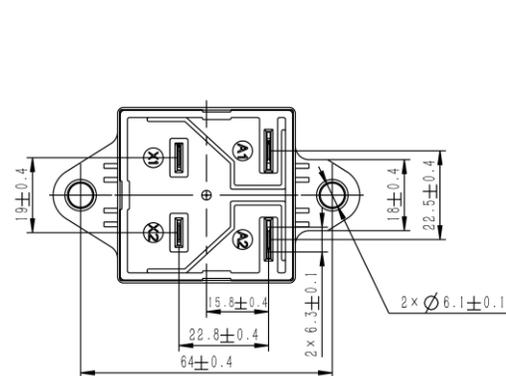
Coil Terminals #187 insert terminals
4.8mm / 0.8 thickness

Power Terminals #250 insert terminals
6.3mm / 0.8 thickness



6.3mm Coil Blades (RXR03B3)

3D model available upon request



Coil Terminals #250 insert terminals
6.3mm / 0.8 thickness

Power Terminals #250 insert terminals
6.3mm / 0.8 thickness

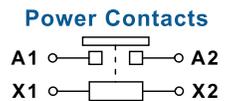


TABLE 4. DIMENSIONAL AND INSTALLATION

CHARACTERISTIC	MEASURE
Weight	140g
Mounting Position	Any / Not Position Sensitive
Package Quantity	40 (bottom and PCB-mount)
(PCB) welding Parameters	Manual welding: (350±20°C), time 3s; Wave soldering: (265±5°C), time (3~8)s.

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. Continuous current tested with 85°C temperature rise at the power terminals. Terminal temperature should be limited to 150°C.
3. 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.
4. 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.
5. 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>