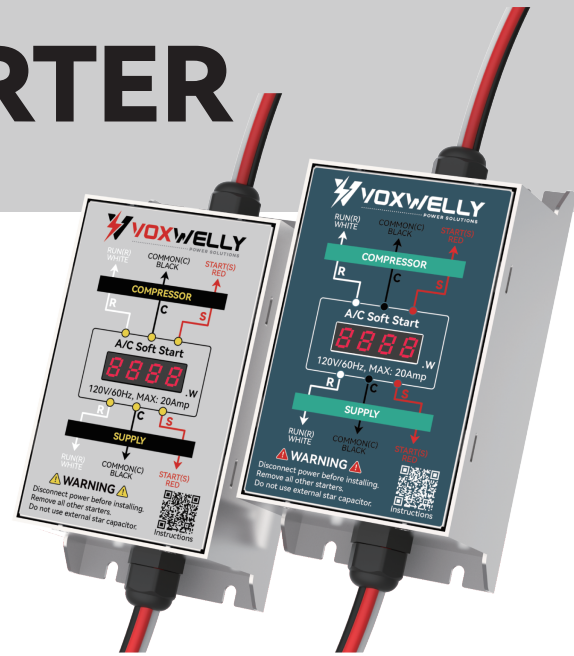


# RV A/C SOFT STARTER

## X-PLUS RV A/C Soft Starter / Single Phase

The X-PLUS RV A/C Soft Starter functions as a soft-starter, and is designed to be used across a wide range of RV air conditioning units. Unlike commonplace designs, this soft-starter only requires access to the compressor's three wires (Run, Start and Common). Find the easy installation instructions on the following page.



RV30A

RV30B







### Parts List:

- 1 x X-PLUS RV A/C Soft Starter
- 1 x Instruction
- 4 x Screws
- 4 x Cable ties
- 6 x Splice Connectors

### Warning:

1. This model does NOT electrically isolate the control box from the compressor. A suitable contactor or relay is necessary.
2. All voltage to equipment **MUST** be disconnected before removing any devices.
3. Allow 2 minutes to discharge run capacitor **BEFORE** disconnecting.
4. **DO NOT** swap the Run & Start Windings.
5. Poor crimping can lead to heating & subsequent damage to the soft starter.

### LED Display Codes:

Code	Status	Code	Status
 .w	The startup power is displayed. The start-up is normal.	 .w	Self-checking exception.
 .w	Run Windings abnormal/PCB breakdown. Startup failure.	 .w	Start Windings abnormal. Startup failure.
 .w	Power detection anomaly.	 .w	Overload protection detected.

## Field Wiring Terminals (Applicable if wire harness is not provided):

1. **Wire Range:** 14 AWG Cu, stranded, for all terminals (Run Winding (R) and Active(T2))
2. **Tightening Torque:** 4.4 lbs-in [0.5 Nm] terminals.

Field wiring conductors shall be rated 167°F [75°C]

Suitable for use on a circuit capable of delivering no more than 5000rms symmetrical amperes, 120 volts maximum, when protected by a non-time delay RK5 fuse or circuit breaker rated 80A, or a time delay fuse rated 70A. The device does not provide current limiting control or an equivalent.

X-PLUS RV A/C Soft Starter is **NOT** an overcurrent protection device and must **NOT** be used as a replacement for any primary circuit overcurrent protection.

# INSTALLATION

## X-PLUS RV A/C Soft Starter should be installed by a qualified technician

Acquire manufacturer's wiring diagram for the air-conditioning unit (provided with purchase).

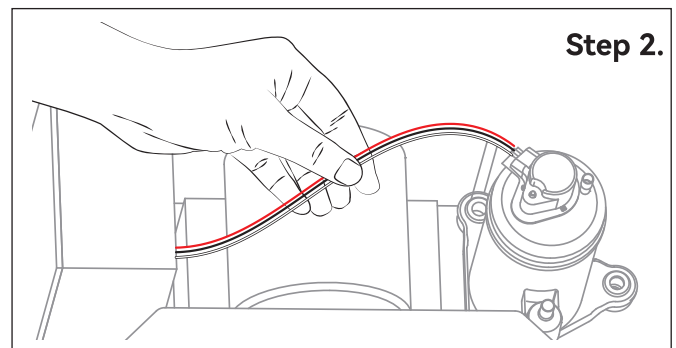
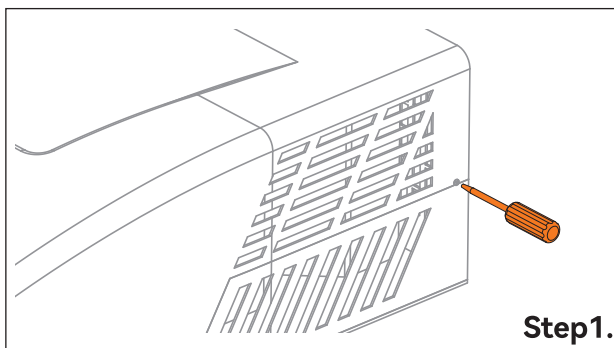
Turn off power to the RV unit.

Verify from the manufacturer's wiring if there are any start-assist devices such as: start capacitors, start relays or PTCRs.

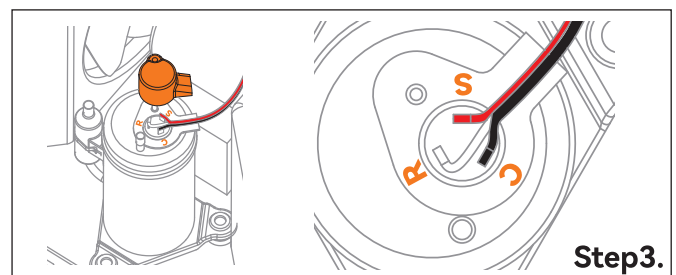
If present, these need to be removed. Follow the Start winding connection from the Compressor into the control box. This should terminate onto a run capacitor (HERM terminal, in case of a dual capacitor). If the same terminal has other wires terminated, these must be disconnected and electrically isolated.

### Method:

1. Open the top hood of the RV air-conditioning. If necessary, gain access to the compressor's wiring by removing any additional foam covers.
2. Identify the three wires (Run, Start and Common) routed to the compressor. Most often, these are routed through a sleeve cover.



3. Open the compressor cover and note the corresponding (R, S, C) color of the wires.

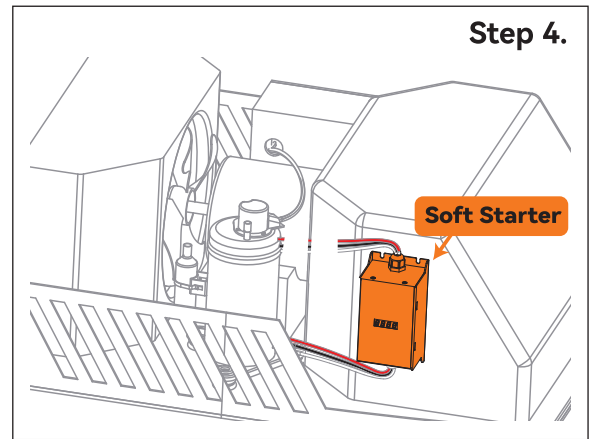


4. Identify a suitable location to place the soft-starter. Please avoid placing the soft-starter and its wiring in the following areas.

- In the direct path of an air vent,
- In proximity (less than 2 inches) to copper pipes (inlet or discharge),
- Near rotating mechanical parts,
- Near heat sources,
- A place that interferes with closing the top hood.

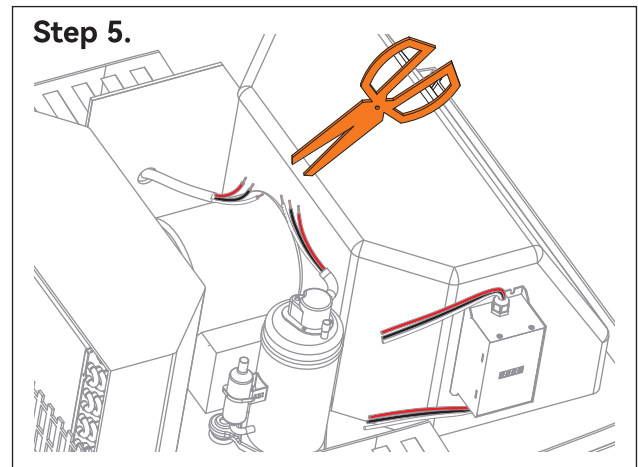
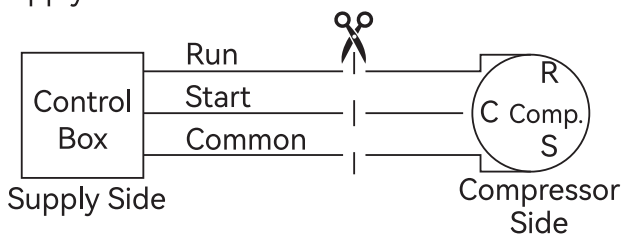
Suitable locations to place the soft-starter are:

- Inside/adjacent to the foam cover,
- On the base floor.



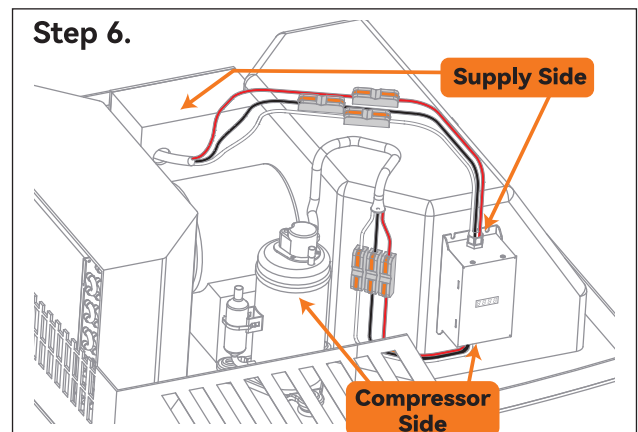
5. Cut the compressor three wires at a location within range of the soft-starter wire harnesses.

Clearly identify the supply and compressor sides of the connections. In this illustration, Lower section is Compressor side and Upper section is Supply side.



6. ① On the compressor side, carefully match the cut run, start, and common wires coming from the compressor with the run, start, and common wires on the COMPRESSOR side of the soft starter. Strip each wire by 1/2" and terminate all 3 connections using closed end splice connectors.

② On the supply side, carefully match the cut run, start, and common wires of the A/C unit with the run, start, and common wires on the SUPPLY side of the soft starter. Strip each wire by 1/2" and terminate all 3 connections using closed end splice connectors, see diagram below. Ensure that all 6 crimped connections are firm and secure.



(The connection method of the supply side is the simplest, and the operation can be completed by referring to the colors found on the compressor side and connecting to the soft start supply side)

7. Ensure that the wire harness on both sides is securely routed within foam guides inside the unit.

Clean the chosen mounting surface for the soft starter using the included alcohol pad.

Secure the soft-starter box in place with the adhesive tape on the backside and press firmly. Securely replace any foam covers and the top hood. Turn on power and verify operation.

# INSTALL TABLE

## X-PLUS Soft Starter Configuration: R=WHITE, C=BLACK, S=RED

A/C Brand	A/C Model	A/C Wiring Configuration
Frigidaire	Frigidaire 5K (FFRA0511R1)	R=BLUE, C=RED, S=BLACK
Dometic	Blizzard NXT	R=WHITE, C=BLUE, S=RED
	Brisk I	
	Brisk II	
	Cool Cat	R=WHITE, C=BLACK, S=RED
	Penguin I and II	
Coleman	Mach 1970A999	R=WHITE, C=BLACK, S=RED
	Mach 1971-984	
	Mach 1976-204	
	Mach 1976-345	
	Mach 1976-518	
	Mach 1976-603	
	Mach 1976-613	
	Mach 1976-724	
	Mach 1976-731	
	Mach 1976-734	
	Mach 1976-736	
	Mach 1976-741	
	Mach 1976-586 COMP-A	
	Mach 1976-586 COMP-B	R=YELLOW, C=ORANGE, S=PURPLE
Mach N22531	R=WHITE, C=BLACK, S=ORANGE	

- This is a dynamic list and changes often with new models.
- A/C manufacturers may also change designs or have manufacturing defects.
- Always double check the cables coming off the compressor and connect accordingly.
- Have an install question, call us at (866)826-3779.
- Website: [www.voxwelly.com](http://www.voxwelly.com) - Email: [warranty@voxwelly.com](mailto:warranty@voxwelly.com)