

RV AIR-CONDITIONING SOFT-STARTER



SpartanStart / Single Phase

Instruction Guide 1/4

The SpartanStart 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).

Parts List:

- 1 x SpartanStart Soft-starter
- 6 x Splice Connectors
- 1 x Alcohol Wipe



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 Flash Codes:

LED	Color	Flash Code	Status
ON	Green	On	Unit powered
		Off	Unit off
FAULT	Red	Rapid (3 sec)	Under-voltage detected
		Slow (1/2 sec)	Overload protection detected

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

Wire Range: 14 AWG Cu, stranded, for all terminals (Run Winding (R) and Active(T2))

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 equivalent.

Spartan Start is **NOT** an overcurrent protection device and must **NOT** be used as a replacement for any primary circuit overcurrent protection.



WARNING:

This product can expose you to chemicals which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.



INSTALLATION



SpartanStart should be installed by qualified technician

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Acquire manufacturer's wiring diagram for the air-conditioning unit.

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Turn off power to the RV unit.

Verify from the manufacturer's wiring if there any start-assist devices such as start capacitors, start relays or PTCRs which may be present.

If present, these need to be removed. Follow the Start winding connection from 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.

Step	Instruction	Illustration
1	<p>Open the top hood of the RV air-conditioning unit.</p> <p>If necessary, gain access to the compressor's wiring by removing any additional foam covers.</p>	
2	<p>Identify the three wires (Run, Start and Common) routed to the compressor. Most often, these are routed through a sleeve cover.</p>	
3	<p>Identify a suitable location to place the soft-starter. Please avoid placing the soft-starter and its wiring in the following areas.</p> <ul style="list-style-type: none"> • 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. <p>Suitable locations to place the soft-starter are:</p> <ul style="list-style-type: none"> • Inside/adjacent to the foam cover, • On the base floor. 	
4	<p>Cut the compressor's three wires at a location within range of the soft-starter's wire harnesses.</p>	



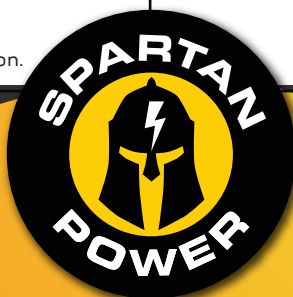
INSTALLATION



SpartanStart should be installed by qualified technician

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Step	Instruction	Illustration
5	<p>Clearly identify the supply and compressor sides of the connections.</p> <p>In this illustration, Upper section is Compressor side and Lower section is Supply side.</p>	
6	<p>6a) 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.</p> <p>Strip each wire by 1/2" and terminate all 3 connections using closed end splice connectors, see diagram below.</p> <p>6b) 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.</p> <p>Ensure that all 6 crimp connections are firm and secure.</p>	
7	<p>Ensure that the wire harness on both sides is securely routed within foam guides inside the unit.</p>	
8	<p>Clean the chosen mounting surface for the soft starter using the included alcohol pad.</p> <p>Secure the soft-starter box in place with the adhesive tape on the backside and press firmly.</p>	
9	<p>Securely replace any foam covers and the top hood. Turn on power and verify operation.</p>	



INSTALL TABLE



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A/C Brand	A/C Model	A/C Wiring Configuration	SpartanStart Configuration
Frigidaire	Frigidaire 5K (FFRA0511R1)	R = BLUE, C = RED, S = BLACK	R = BLUE, C = BLACK, S = RED
Coleman	Mach N22531	R = WHITE, C = BLACK, S = ORANGE	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1970A999	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1971-984	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-204	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-345	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-518	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-568 COMP-A	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-568 COMP-B	R = YELLOW, C = ORANGE, S = PURPLE	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-603	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-613	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-724	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-731	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-734	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-736	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Coleman	Mach 1976-741	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Dometic	Blizzard NXT	R = WHITE, C = BLUE, S = RED	R = BLUE, C = BLACK, S = RED
Dometic	Brisk I	R = WHITE, C = BLUE, S = RED	R = BLUE, C = BLACK, S = RED
Dometic	Brisk II	R = WHITE, C = BLUE, S = RED	R = BLUE, C = BLACK, S = RED
Dometic	Cool Cat	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED
Dometic	Penguin I and II	R = WHITE, C = BLACK, S = RED	R = BLUE, C = BLACK, S = RED

* 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 775-800-1725

