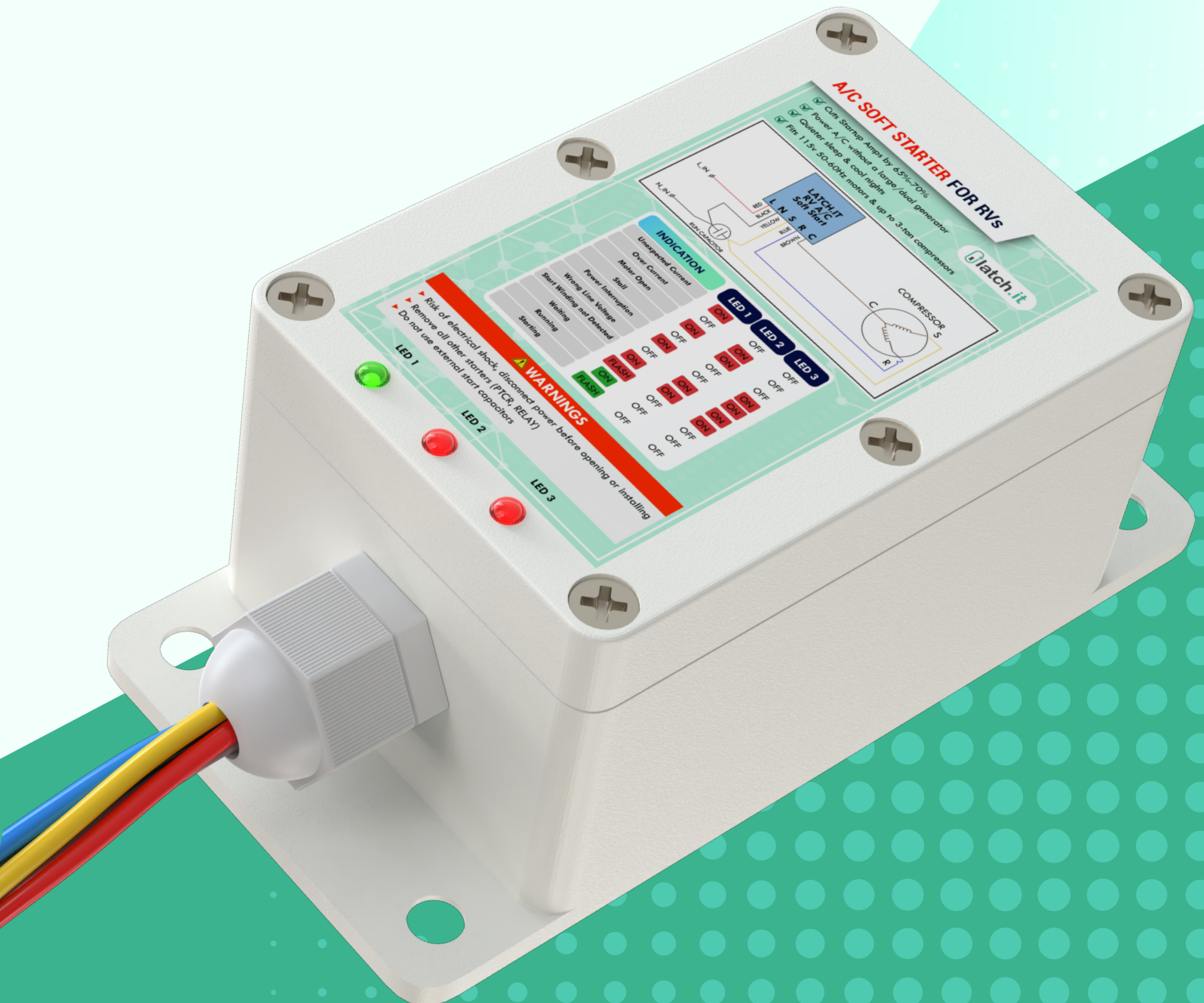
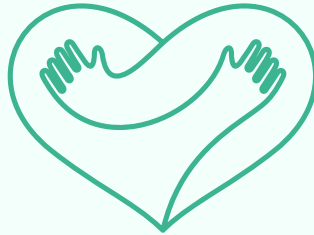


RV A/C SOFT STARTER

INSTALL MANUAL & USERS GUIDE



WELCOME TO THE FAMILY!



Thanks for purchasing our Latch.it Product! We are a family owned American business that cares about your safety and security!



Please review, read and understand ALL instructions to ensure proper functionality.

If you have any questions or concerns, don't hesitate to reach out to us, we are always available at info@latchit.org

SEE FULL VIDEO INSTRUCTIONS AT
www.latchit.org

PURPOSE OF THE MANUAL

Welcome to the RV Soft Starter for AC manual!

This document is designed to provide you with essential information on the safe installation, operation, and maintenance of your RV Soft Starter for AC. By following the guidelines presented here, you can ensure the optimal performance of your equipment and enhance its longevity.

PRODUCT OVERVIEW

The RV Soft Starter for AC is a cutting-edge device designed to reduce the starting current and torque of your AC motor-driven equipment. It offers a range of benefits, including:

- **Extended Motor Life:** By mitigating the stress associated with motor startups, the soft starter helps prolong the life of your electric motor.
- **Reduced Electrical Stress:** Soft starters reduce the inrush current during motor startup, minimizing voltage drops and reducing the potential for electrical system disturbances.
- **Improved Efficiency:** The RV Soft Starter for AC allows for smoother motor starts, which can lead to increased energy efficiency and reduced wear and tear on equipment.

WARNINGS & CAUTIONS

WARNINGS

1. ELECTRICAL HAZARD

This product deals with high-voltage electrical connections. To prevent electrical shock or injury, always disconnect power before installation, servicing, or maintenance. Consult a qualified electrician if you are unsure about any electrical work.

2. IMPROPER INSTALLATION

Incorrect installation of the RV Soft Starter may result in motor damage, electrical faults, or even fire hazards. Follow the installation instructions in this manual carefully, and only use recommended components and accessories.

3. HIGH VOLTAGE

Be aware that this device operates with high voltage. Avoid touching exposed wires or terminals when the unit is powered.

4. OVERHEATING

Ensure adequate ventilation and airflow around the soft starter to prevent overheating. Overheating can reduce the lifespan of the unit and pose a fire risk.

5. UNAUTHORIZED ACCESS

Do not attempt to open the enclosure of the soft starter unless you are a qualified technician. Opening the unit can expose you to dangerous voltage levels.

CAUTIONS

1. INRUSH CURRENT

The soft starter is designed to reduce inrush current to the motor. However, it may not eliminate it entirely. Be cautious of potential voltage drops when starting the motor, which can affect other equipment on the same circuit.

2. ENVIRONMENTAL CONDITION

Install the RV Soft Starter in a suitable environment. Avoid locations with excessive dust, moisture, corrosive gases, or extreme temperatures, as these can affect performance and longevity.

3. WIRING

Ensure all wiring connections are secure and properly terminated. Loose or incorrect connections can lead to malfunction or damage.

4. ADJUSTING PARAMETERS

When adjusting soft starter parameters, make changes incrementally and observe the motor's behavior. Sudden or extreme adjustments may cause unexpected motor behavior.

5. MAINTENANCE

Regularly inspect the soft starter for signs of wear or damage. If you notice any issues, discontinue use until the unit is inspected and repaired by a qualified technician.

6. UNAUTHORIZED ACCESS

Proper grounding is essential for safety and proper operation. Ensure the soft starter is correctly grounded according to local electrical codes and regulations.

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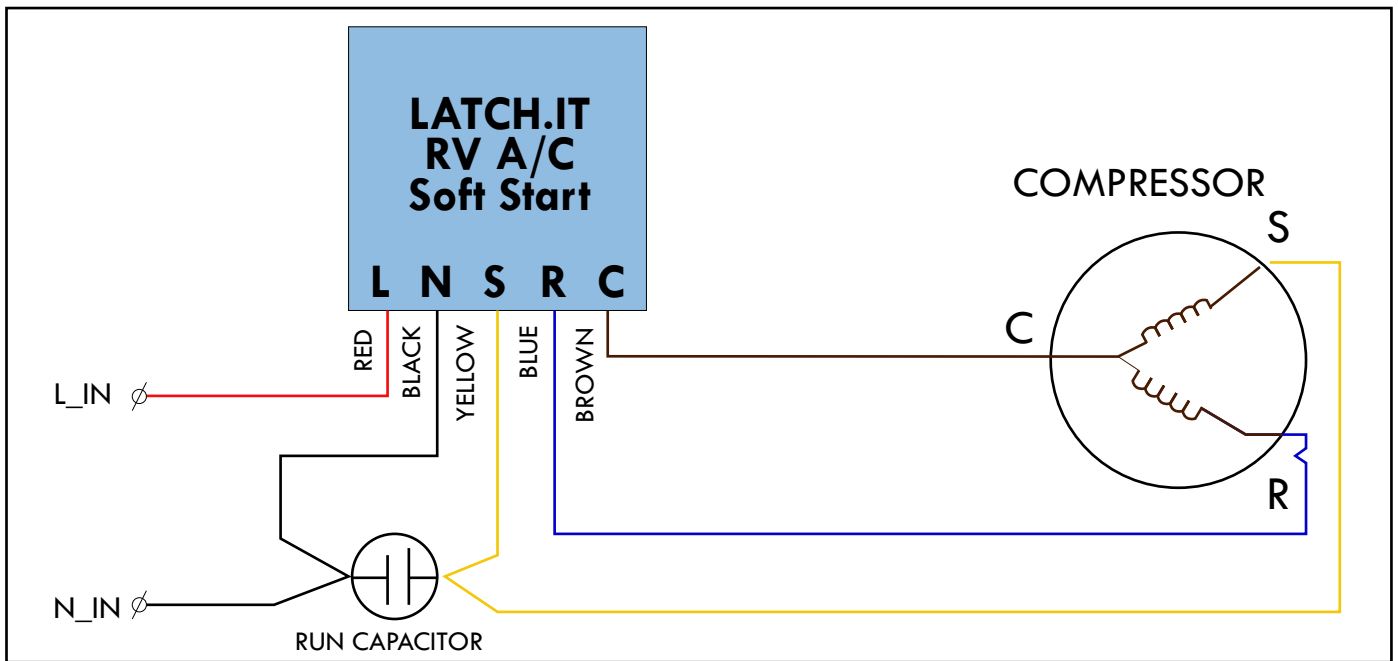
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TECHNICAL SPECIFICATIONS

Nominal Voltage Rating	120v AC
Single/Three Phase	Single Phase
Main Frequency (Tolerance +/-3 Hz)	60Hz
Motor Current, Max RLA/FLA Range	20A
Contractor	Secondary
LRA Max	120A
Start Current Reduction	Up to 75% of LRA
Startup Torque Reduction	30-40%
Degree Of Protection	IP65 / NEMA 4
Operating Temperature	-20° to 60°C / -4° to 140°F
Storage Temperature	-40° to 85°C / -40° to 185°F
Number Of Starts Per Hour	15/hr
Softstart On Thermal Reset	YES
Maximum High Voltage	130V
Power Supply & Control Voltage	Auto-Start at Power Up
Short Circuit Current Rating SCCR, kA	5
Line Conductor, Max AWG Size	12
Overload Protection	½ Second
Low Voltage Protection	3 Seconds

02

WIRING DIAGRAM AND LED INDICATORS



INDICATION	LED 1	LED 2	LED 3
Unexpected Current	ON	OFF	OFF
Over Current	OFF	ON	OFF
Motor Open	ON	ON	OFF
Stall	OFF	OFF	ON
Power Interruption	ON	OFF	ON
Wrong Line Voltage	OFF	ON	ON
Start Winding not Detected	ON	ON	ON
Waiting	FLASH	OFF	OFF
Running	ON	OFF	OFF
Starting	FLASH	OFF	OFF

INSTALLATION

Proper installation of your RV Soft Starter for AC is essential to ensure optimal performance and safety. Here are detailed instructions to guide you through the installation process:

1. Accessing the RV Air-Conditioning Unit

Gain access to your RV air-conditioning unit by removing any additional covers or foam covers that may be concealing the wiring. Ensure the unit is powered off before proceeding.

2. Identifying Compressor Wiring

Identify the wirings routed to your compressor. They are often routed through a wiring cover or conduit. Familiarize yourself with these wires as they will be connected to the soft starter.

3. Selecting a Suitable Location

Choose a suitable location to place the soft starter. Avoid the following:

- *Direct paths of air vents, as it may affect the soft starter's cooling.*
- *Close proximity to copper pipes, as they can interfere with installation.*
- *Areas near rotating or moving mechanical parts.*
- *Locations near heat sources, such as furnaces or hot water heaters.*
- *Places that obstruct access to close up the AC system location.*

Ensure that the chosen location allows the wiring from the soft starter to reach the AC wires without strain.

4. Using the Electrical Diagram

Refer to the provided electrical diagram to hook up the wires from the soft starter to the RV AC system. Pay close attention to wire colors and connections.

5. Proper Wire Connection

Hook up each wire properly using appropriate connectors for your application. Common options include splice connectors, crimp connectors, or other suitable connectors recommended in the product manual. Ensure all connections are secure and free from exposed wires.

6. Routing and Securing Wiring

After installation, ensure the wiring harness is securely routed and secured in its original location using cable ties or clamps. This prevents loose wires and potential hazards.

7. Checking the Mounting Surface

Double-check the mounting surface for the soft starter to ensure it is level and stable. Use appropriate hardware to secure the soft starter in place.

8. Final Checks Before Closing Up

Before closing up the AC system area and starting the soft starter, review the following:

- *Ensure all covers, channels, and any additional components removed during installation are securely put back in their original positions.*
- *Verify that no wires are pinched or damaged during installation.*
- *Confirm that all connections are tight and secure.*
- *Turn on the power to the RV AC system and the soft starter to test its operation.*

By following these detailed installation instructions and conducting thorough checks, you can ensure a safe and effective installation of your RV Soft Starter for AC. If you encounter any difficulties or uncertainties during the installation process, consult a qualified technician or electrician. Safety is paramount throughout the installation process.

USE INSTRUCTIONS AND LED INDICATOR MEANING:

1. Starting

Green Light (LED1) Flashing: This means the motor is starting up.

2. Running

Green Light (LED1) Steady: The motor is running smoothly.

3. Waiting

Red Light (LED1) Flashing: If this light blinks, it means you tried to start the equipment within 2 minutes of the last startup. Wait for 2 minutes before trying again.

4. Unexpected Current

Red Light (LED1) Steady: This indicates abnormal current during startup.

Solution:

- Check your wiring.
- Confirm if the motor matches the soft starter's specifications.

5. Over Current

Red Light (LED2) Steady: It shows that the current is too high during motor startup or operation.

Solution:

- Check for compressor issues, like poor condenser flow or capacitor problems.
- Verify your wiring.

6. Motor Open

Red Lights (LED1 and LED2) Steady: This means the compressor circuit is broken, often due to incorrect wiring or compressor problems.

7. Stall

Red Lights (LED3) Steady: Similar to "Motor Open," it indicates a compressor circuit break, usually caused by incorrect wiring or compressor issues.

8. Power Interruption

Red Lights (LED1 and LED3) Steady: This suggests a brief power outage. After power is restored, there will be a 2-minute delay, and then the compressor will restart automatically.

9. Wrong Line Voltage

Red Lights (LED2 and LED3) Steady: This signals that the input voltage is outside the recommended range (AC85V to AC135V).

10. Start Winding not Detected

Red Lights (LED1, LED2, and LED3) Steady: This indicates a problem with detecting the starting winding, typically caused by wiring errors.

Solution:

- Check the wiring connections.

These indicator lights are essential for diagnosing issues and ensuring the safe and efficient operation of your RV Soft Starter. If you encounter any problems beyond what's mentioned here, refer to the "Troubleshooting Guide" section for further assistance.

LITTLE TO NO MAINTENANCE NEEDED!

Proper maintenance helps ensure the longevity and performance of your RV Soft Starter for AC. Periodically inspect the soft starter for signs of wear, damage, or loose connections. If any issues are detected, consult a certified electrician.

Frequently Asked Questions (FAQs)

Q1: What is the purpose of the RV Soft Starter for AC?

A1: The RV Soft Starter reduces the starting current and torque of your AC motor, extending its lifespan and improving efficiency.

Q2: How do I know if the soft starter is working correctly?

A2: The green LED (LED1) flashing indicates that the motor is starting up, and the steady green LED1 means the motor is running correctly.

Q3: What should I do if I see a red LED1 light flashing?

A3: If LED1 flashes red, it means you tried to start the equipment within 2 minutes of the last startup. Wait for 2 minutes before trying again.

Q4: How can I address abnormal current during startup (LED1 steady red light)?

A4: First, check the wiring for correctness. Then, verify if the motor type and power match the soft starter's specifications.

Q5: What do I do if I encounter overcurrent (LED2 steady red light)?

A5: Troubleshoot compressor issues, such as poor condenser flow or capacitor problems. Additionally, check your wiring for correctness.

Q6: What should I check if both LED1 and LED2 are steadily lit (Motor Open)?

A3: If LED1 flashes red, it means you tried to start the equipment within 2 minutes of the last startup. Wait for 2 minutes before trying again.

Q7: How do I address a power interruption (LED1 and LED3 steadily lit)?

A7: This suggests a brief power outage. After power is restored, wait for 2 minutes for the compressor to restart automatically.

Q8: What should I do if both LED2 and LED3 are steadily lit (Wrong Line Voltage)?

Q8: What should I do if both LED2 and LED3 are steadily lit (Wrong Line Voltage)?

Q9: How can I resolve LED1, LED2, and LED3 being steadily lit (Start Winding not Detected)?

A9: This usually results from a wiring error. Double-check the wire harness to correct any wiring issues.

This product comes with a Lifetime Limited Warranty. This warranty covers any defects in workmanship or materials and ensures that the product will conform to the published specifications, drawings, and descriptions.

This Lifetime Limited Warranty is the sole warranty provided and replaces all other warranties, either expressed or implied. It can only be amended by a written document signed by an authorized representative.

Under this warranty, our obligation is limited to replacing, repairing, or at our discretion, issuing credit for any products returned by the customer during the lifetime of the product. This is subject to the following conditions:

- 1. We must be promptly notified in writing upon discovery of any defect, with a detailed explanation of the alleged deficiencies.*
- 2. The defective product must be returned to us, with transportation charges prepaid by the customer.*
- 3. Our examination of the product must confirm that the defect was not caused by misuse, neglect, improper installation, repair, alteration, or accident.*

In no event shall we be liable for loss of profits, loss of use, or damages of any kind based on a claim for breach of warranty. All products must be installed by a certified electrician.

Please note that this warranty does not cover any changes or improvements made to the products and specifications at any time without prior notice.

DISCLAIMER

We're committed to constant product enhancement, so specifications, designs, and prices may change without prior notice. While we strive for accuracy in our technical literature, we can't guarantee it's free from errors or subsequent changes. We're not responsible for how this information is used, and any use is entirely at the user's risk. We don't grant any third-party rights or licenses to our products' intellectual property.

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CONTACT US

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LATCH.IT Support via the Official Website

www.latchit.org



Email us at info@latchit.org with any questions
or concerns, our support team is always available!

