

HASS-05 AC Soft Starter User Manual



Thank you for selecting our product. This product manual contains crucial information and guidance for installing and utilizing our product. Before using this product, we strongly recommend thoroughly reading and familiarizing yourself with the contents of this manual.

Overview

AC Soft Starter with a reverse motor protection feature, DIY installation kit, and designed to fit inside AC units. This is a soft start device commonly used for AC motors to reduce inrush current, making it ideal for both utility and generator power.

Key Features

- **Reverse Motor Protection:** This built-in feature helps prevent damage to the motor in case it runs in the wrong direction (which can happen due to wiring errors or power issues), offering peace of mind and preventing costly repairs.
- **Easy Installation:** Quick installation, easy setup, no professional assistance required.
- **Smallest Size:** Its compact size makes it a good fit for various AC units, especially when space inside the unit is limited.
- **Compatibility with Utility/Generator Power:** This makes it versatile for both home and off-grid setups.

Benefits

Reduced Inrush Current: The soft start minimizes the high current surge when the AC motor starts up, which can prolong the life of the motor and reduce strain on the electrical components.

Improved Efficiency: By limiting the initial power demand, it can make your AC system more energy-efficient.

Increased Longevity: The soft start helps in reducing wear and tear on both the motor and the electrical components, which can extend the overall lifespan of the AC unit.

Specifications

Operation Mode: ON-OFF

Current Rating: 8-16A (1.75-3.5 ton AC) / 16-32A(4 - 7 ton AC)

Operating Voltage: 240 Volts

Operating temperature range: -4° F to 140° F

Storage temperature range: -40° F to 185° F

- Self optimizes for a wide range of compressor sizes
- Under-voltage and over-current protection
- Reverse motor protection and detection

Parts List

1 x Soft Starter

1 x Red Wire

1 x Blue Wire

1 x Black Wire

1 x Brown Wire

1 x Pack of Screws

Installation Guide

WARNING: Suitable for use on a circuit capable of delivering no more than 5000rms symmetrical amperes, 240 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. AC Soft Starter is NOT an overcurrent protection device and must NOT be used as a replacement for any primary circuit overcurrent protection.

AC Soft Starter must be installed in a location that ensures that the external heat from a hot gas line, compressor discharge piping, or similar heat source will not cause damage. Minimum 3" (76 mm) clearance is recommended. AC Soft Starter must be installed by qualified/licensed technician.

CAUTION/WARNING:

1. All voltage to equipment MUST be disconnected before removing any devices.
2. Allow 2 minutes to discharge run capacitor before disconnecting.
3. Do not swap the Run & Start Windings.
4. Prior to installation, be sure all start capacitors & start relays, along with hard-starters and/or any other start-assist devices, are removed.
5. The start capacitor is built into the soft starter.

6. Loose terminals can lead to heating & subsequent damage to the soft starter. As per, UL508 standard, ensure below tightening torques.

LED Flash Codes

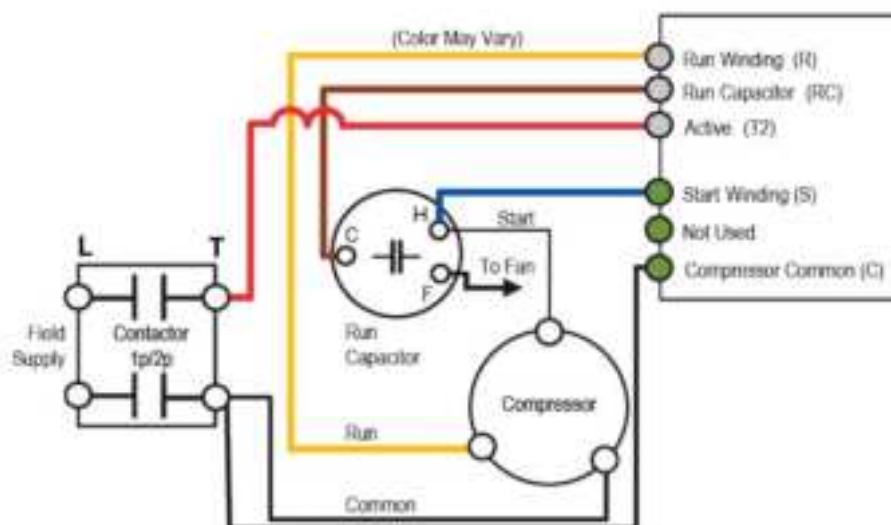
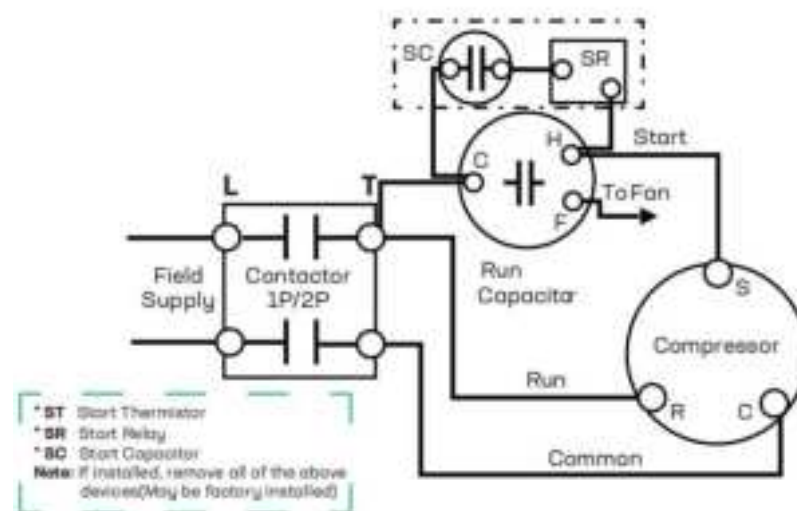
Flash Code	Definition	Time to re-start attempt
Rapid Flash (10/1 sec)	Low voltage	3 minutes
Triple Flash (3/3 sec)	Lockout on 3 failed starts	50 minutes
Slow Flash (1/3 sec)	Lockout on overcurrent	10 minutes
Steady Flash (1/1 sec)	Cycle delay / faults	3 minutes
Note: LED fault indicator remains off in normal running mode		

FIELD WIRING SPECIFICATIONS:

Wire Range: 8 to 12 AWG Cu, stranded, for terminals (Run Winding (R) and Active (T2))
 12 to 16 AWG Cu, stranded, for terminals (Run Capacitor (RC), Start Winding (S), and Compressor/Motor Common (C), these are supplied)

Tightening Torque: 11.5 LBS-IN LARGE TERMINALS, 4.5 LBS-IN SMALL TERMINALS.

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



Installation Steps

1. Disconnect Power

Ensure the power supply is disconnected and the circuit is de-energized.

Gather the necessary tools: screwdrivers, wiring tools, voltage tester, etc.

Verify that the soft starter is compatible with your AC motor (voltage, current, and horsepower rating).

2. Choose an Appropriate Installation Location

The soft starter is typically installed near the air conditioner's power input terminal.

Choose a dry, easily accessible location for installation.

3. Wiring

3.1. Remove the compressor Run Wire from the contactor or terminal, as applicable.

3.2. Strip the compressor Run Wire at least 1/2". Terminate wire in Run Winding terminal on Soft Starter.

3.3. Terminate brown wire from Soft Starter to "C" on the capacitor.

3.4. Black wire from Soft Starter to loadside contactor labeled 21 in this application.

3.5. Terminate blue wire from Soft Starter to "H" on the capacitor.

3.6. Red wire from Soft Starter to loadside contactor labeled 23 in this application.

4. Inspect Wiring and Installation

After completing the wiring, inspect all connections for tightness and ensure there are no exposed wires or poor connections.

Confirm that the cables and the soft starter's casing are undamaged.

5. Restore Power and Test

Restore power to the system, start the air conditioner, and check if the soft starter is functioning correctly.

If installed correctly, the air conditioner should start smoothly without a high surge of current.

6. Verify Normal Operation

Use a multimeter to check the input and output voltages of the soft starter to ensure the air conditioner is operating normally.

Warranty

If the product experiences any quality issues within the warranty period, please contact our after-sales service department. We will provide professional technical support and repair services.