Integrated Furnace Controls Universal Replacement
50M56X-843: HSI Simulator Guide

Simulator and Event Setup

1. Plug simulator into grounded outlet
2. Place installation instructions next to simulator
3. Ensure you have a separate, loose 50M56X-843
4. Ensure you have 50M56X-843 literature on hand
5. Have your work phone available for configuration

Introduction

The White-Rodgers 50M56X-843 Single-Stage PSC & ECMx Control replaces over 550 single-stage controls, making it the most universal single-stage integrated furnace control available. It includes a universal 120V nitride ignitor and utilizes the White-Rodgers Connect app for simple configuration and diagnostics.

Interaction Script (3-5 Minutes)

1. **Ensure the power switch on the simulator is off.**
2. Would you like to download White-Rodgers Connect to configure this control?
   - If yes: Go to your app store and search for White-Rodgers Connect.
   - If no: Ok; you can configure on this phone.
3. Open the app, make all configuration choices, tap "Update Control" and place the phone's antenna region in contact with the control's antenna region until a check mark appears.
4. Provide some background about near-field communication (NFC)
   - Near-field communication provides a wireless connection between the control and your mobile device. Using NFC, White-Rodgers Connect allows you to access and transfer data inside the control from the app. No cellular or Wi-Fi connection is required and the control does not need power.
5. Using White-Rogers Connect, demonstrate selecting different configurations for PSC or ECM blowers and the different durations and delays previously controlled by DIP switches.
   - The app offers Configuration, Status, Diagnostics and About tabs.

   Configuration: Set parameters and update control.

   Status: Receive valuable information about the HVAC system you are servicing.

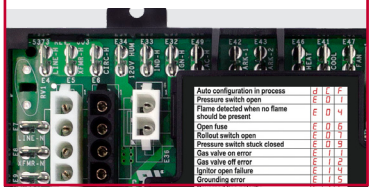
   Diagnostics: Review and diagnose fault codes accurately.

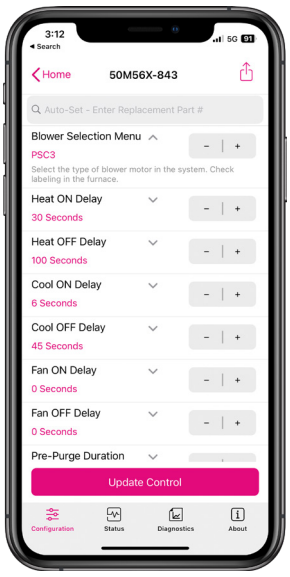
   About: Quick links to product information and help resources.

WARNING

DURING LIVE-FIRE MODE, THE GLASS AND AREA ABOVE GET VERY HOT.

THE TERMINALS ACROSS THE TOP OF THE 50M56X CONTROL ARE ENERGIZED WITH HIGH VOLTAGE.





6. Demonstrate the onboard diagnostic codes and the correlating diagnostic tab in White-Rogers Connect by placing any one of the following troubleshooting switches in the fault position, reading the diagnostic code on the seven-segment display and then connecting your mobile device to show the in-app diagnostic capabilities. Only select one fault at a time. The participant can even measure across the listed diagnostic terminals with a multimeter to confirm the fault.

   - SW2 Up-Fault at beginning of call for heat simulates pressure switch stuck closed, presents code E09 and measures 0 Volts between Pressure Switch terminals.
   - SW3 Down-Fault during call for heat simulates pressure switch open, presents code E01 and measures 24V between Pressure Switch terminals.
   - SW4 Down-Fault during call for heat simulates high-limit switch open, presents code E18 and measures 24V between Main Air Limit terminals.
   - SW5 Down-Fault during call for heat simulates high-limit switch open, presents code E18 and measures 24V between Vent Limit terminals.
   - SW6 Down-Fault during call for heat simulates high-limit switch open, presents code E18 and measures 24V between Blower Limit terminals.
   - SW7 Down-Fault during call for heat simulates rollout switch open, presents code E07 and measures 24V between Rollout Limit terminals.
   - SW8 Down-Fault at power-up simulates reversed line polarity, presents code E16, and measures 120V between N and G.
   - SW9 Down-Fault during call for heat simulates loss of power to flame sensor, will present code E21 Lockout after four unsuccessful attempts to ignite, and measures 0V between Flame Sensor Output and G.
   - SW11 Down-Fault at any time simulates low voltage loss, presents no activity, and measures 0V between 24V and C.
   - SW12 Middle-Off at beginning of call for heat simulates ignitor open failure and presents code E14.
   - SW14 Up-Strong during call for heat simulates a normal flame sensor current reading and presents C5.0 on the digital display (a 5.0 microamp reading).
   - SW14 Down-Weak, switched quickly after a successful ignition, represents a weak flame sensor current reading and presents C0.2 on the digital display (a 0.2 microamp reading).

Other Feature Callouts (If Time Allows)

A. Flame Current Reading Options

- ONBOARD READING: During a call for heat, the digital display reports the real-time flame sensor current draw. It will display the microamp current with the letter C followed by two digits. For example, C2.4 means the flame sensor current is 2.4 microamps.
- TEST PINS: Two pins extend from the control board to the surface of the cover, allowing technicians to test flame sense right on the control with a DC meter. Microamp conversion is 1v DC equals 1 microamp.

B. Digital Display

- The digital display reports three-digit error codes to aid in system diagnostics. A fault code label is conveniently located on the control.

C. PSC and ECMx Capability

- DURING INITIAL SETUP: Configure for either PSC or ECMx blower motors and save truck space by replacing over 550 part numbers.
- COMPLETE BLOWER TIMINGS CONFIGURATION: Configure heat, cool, and fan on and off delay settings quickly and easily with the White-Rodgers Connect app or on the board.

D. Onboard Major OEM Connectors

- The 50M56X-843 has five main harness connectors, with both In-line and Molex plugs on the same control.
- Four inducer/ignitor Molex connectors on the board.
- Two ECMx connectors for Trane & Goodman direct plug-ins.