

RegalRexnord
G0148E Motor
Replacement for
Variable Speed
Motors



RegalRexnord G0148E Motor Replacement for Variable Speed Motors Installation Guide

[Home](#) » [RegalRexnord](#) » RegalRexnord G0148E Motor Replacement for Variable Speed Motors Installation Guide 

Contents

- 1 [RegalRexnord G0148E Motor Replacement for Variable Speed Motors](#)
- 2 [Product Usage Instructions](#)
- 3 [INTRODUCTION](#)
- 4 [HOW TO ID GENTEQ ECM MOTORS](#)
- 5 [REMOVAL AND INSTALLATION OF THE MOTOR](#)
- 6 [EVERGREEN® VS USER INTERFACE \(UI\) OVERVIEW](#)
- 7 [SEQUENCE OF OPERATION](#)
- 8 [DIAGNOSTICS](#)
 - 8.1 [CHANGING ROTATION](#)
- 9 [REMOVAL AND INSTALLATION OF THE MOTOR](#)
- 10 [EVERGREEN® VS USER INTERFACE \(UI\) SPECIFICATIONS](#)
- 11 [TECHNICAL SUPPORT](#)
- 12 [Documents / Resources](#)
 - 12.1 [References](#)



RegalRexnord G0148E Motor Replacement for Variable Speed Motors



Specifications:

- Manufacturer: Regal Beloit America, Inc.
- Model: Evergreen VS
- Product Line: Genteq ECM Motors
- Variable Speed: Yes
- Communication Modes: DSI and PWM
- User Interface: Included

Product Usage Instructions

1. Introduction:

The Evergreen VS motor is designed to replace Genteq constant airflow (variable speed) ECM motors, including ECM indoor blower motors formerly branded GE or GE ECM by Regal Beloit. It operates in constant airflow mode with DSI and constant torque mode with PWM communication.

2. How to Identify Genteq ECM Motors:

Locate the model name (2.0, 2.3, 2.5, 3.0, or Eon) on the motor label. If the model name is not listed, find the model number and use the cross-reference tool on www.regalrexnord.com to identify the correct replacement product.

3. Constant Airflow ECM (Variable Speed) Replacement Motor Options:

Choose the appropriate Evergreen replacement motor option based on the model name and specifications of your existing Genteq ECM motor.

4. Installation of the Evergreen VS User Interface:

Refer to pages 4-6 of the manual for detailed instructions on installing the Evergreen VS user interface.

5. User Interface Overview and Commissioning:

Pages 7-9 provide information on the operation of the user interface and how to commission the motor.

6. Diagnostics and Changing Rotation:

Refer to the manual for guidance on diagnostics and changing the rotation of the Evergreen VS motor.

7. Replacing GE Model 2.5 and Genteq Model 3.0 Motors:

For instructions on replacing GE Model 2.5 and Genteq Model 3.0 motors, refer to pages 11-12 of the manual.

8. Specifications, Technical Support, and Warranty:

Find detailed specifications, technical support information, and warranty details on pages 13 of the manual.

FAQ:

Q: Can I use the Evergreen VS motor without the included user interface?

A: Yes, the Evergreen VS motor is also sold individually without the user interface included in the package.

Q: How do I match the new Evergreen VS motor to replace my existing Genteq ECM motor?

A: Match the horsepower (HP) and voltage (VAC) ratings of the new Evergreen VS motor to the motor being replaced for proper replacement.

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

- Read and follow all instructions carefully.
- Disconnect and lock out the main power from the unit being serviced before installing the Evergreen VS user interface and motor. It is also a good practice to confirm that the power is disconnected with a voltmeter.
- Do not operate equipment without guards in place.
- Improper installation, adjustment, alteration, service, maintenance, or use could cause explosion, fire, electrical shock, or other conditions. Consult a qualified installer, service agency, or your distributor or branch for information or assistance.

The qualified installer or agency must use the supplied or recommended parts when installing or servicing this product.

- Installation and service of this Evergreen VS user interface and motor should be performed only by trained service technicians familiar with these products.
- After installing the Evergreen VS user interface and motor, it is the responsibility of the installing technician to verify the HVAC system matches the manufacturer's requirements for proper operation, capacity, efficiency and safety. This includes but is not limited to measuring the airflow and adjusting the Evergreen VS user interface airflow and delay setting in each mode of operation.

CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

- Periodic inspections should be performed. Failure to perform proper maintenance could result in premature product failure, in addition to minor or moderate injury.
- This Evergreen VS user interface and motor should be installed in accordance with accepted practices and installation instructions, and in compliance with all national and local codes.



Evergreen® VS User Interface



Evergreen® VS Motor

NOTE: The Genteq Evergreen VS user interface # 5K010V is the second generation of this product. The thermostat and motor connections are the same as the first generation (# 5K010), see pages 3-6 of this manual. See pages 7-9 for the simplified operation information and the newly added OPTIONAL features available in the app using the built in WIFI.








INTRODUCTION

The Evergreen VS motor is designed to replace Genteq constant airflow (variable speed) ECM motors, including ECM indoor blower motors formerly branded GE or GE ECM by Regal Beloit. The Evergreen VS motor is a constant airflow (variable speed) motor. It will operate in constant airflow mode when it is receiving digital serial interface (DSI) and constant torque mode when it is receiving pulse width modulation (PWM) communication.

APPLICATIONS – EVERGREEN® VS PRODUCT LINE

The Evergreen VS motor can be used to replace multiple Genteq® constant airflow motors either by itself or in conjunction with the correct accessory. Use the chart below to select the correct components for your application.

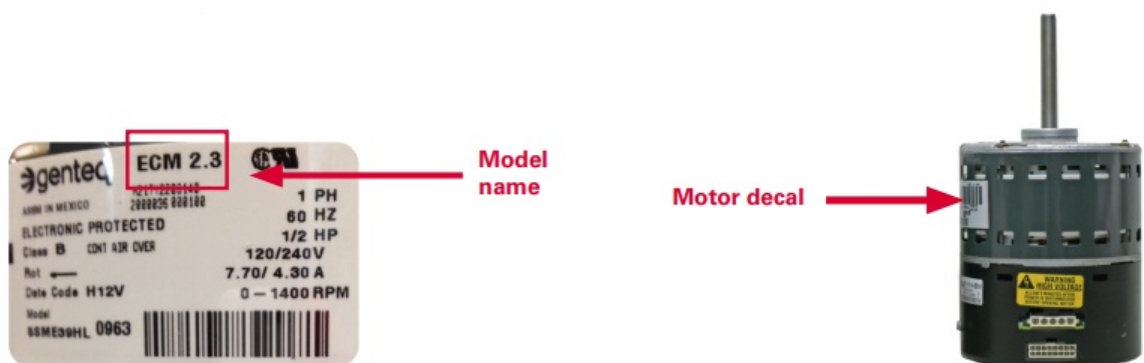
CONSTANT AIRFLOW ECM (VARIABLE SPEED) REPLACEMENT MOTOR OPTIONS

	INDOOR BLOWER MOTORS	EVERGREEN VS MOTOR	REQUIRED ACCESSORY
16-PIN SOLUTION	 <p>Model 2.0 Model 2.3 Eon® motor</p> <p>Constant Airflow (Variable Speed) ECM Motors GE® model 2.0, Genteq models 2.3 and Eon® motors</p> <p>Note: The model 2.3 motor has the same physical appearance as the model 2.5 motor. Always confirm model name on motor, use ID guide information below if needed.</p>		 <p>USER INTERFACE INCLUDED IN BOX!</p> <ul style="list-style-type: none"> • The Evergreen VS User Interface (# 5K010V) is required for this application and is installed permanently with the motor • This part is included in this package
	 <p>Model 2.5</p> <p>Constant Airflow (Variable Speed) ECM Motors GE model 2.5 motor</p> <p>Note: The model 2.5 motor has the same physical appearance as the model 2.3 motor. Always confirm model name on motor, use ID guide information below if needed.</p>		 <ul style="list-style-type: none"> • The Genteq 16-4 Pin Adapter (# 5K015) is required for this application and is installed permanently with the motor • This part is sold separately from the motor • When replacing model 2.5, the user interface included in this package is NOT required. See note below chart.
4-PIN SOLUTION	 <p>Model 3.0</p> <p>Constant Airflow (Variable Speed) ECM Motors Genteq models 3.0 and Eon+® (also branded as Eon Serial)</p>		<ul style="list-style-type: none"> • Plug-n-play (Connect OEM plugs...DONE) • When replacing model 3.0, the user interface included in this package is NOT required. See note below chart.

NOTE: The Evergreen VS motor is also sold individually without the user interface included in the package.

HOW TO ID GENTEQ ECM MOTORS

Locate the model name (2.0, 2.3, 2.5, 3.0 or Eon) on the motor label. See replacement motor options chart above for the proper Evergreen replacement motor option.

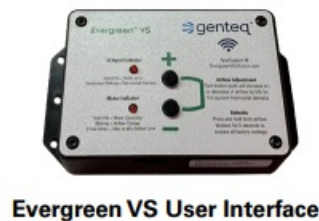


If the model name is not listed, locate the model number. Go to www.regalrexnord.com/cross-reference. Enter the model number of your Genteq motor to find the correct Evergreen replacement product.



REPLACING GE®* MODEL 2.0, GENTEQ® MODELS 2.3 AND EON® MOTORS

- Applications
 - Furnace, air handler and package units
 - Fossil fuel, electric strip heat, A/C, heat pump and geothermal units
- Install (1) Evergreen® VS user interface (included in this package)
- Install (1) Evergreen VS motor
 - For proper replacement of model 2.0, Genteq ECM models 2.3 and Eon motors, match the horsepower (HP) and voltage (VAC) ratings of the new Evergreen VS motor to the motor being replaced. It is not necessary for the RPM or the Amperage (FLA) to match.
 - Stock # 6503VUI 1/3 HP 120/240 VAC CCW/CW
 - Stock # 6505VUI 1/2 HP 120/240 VAC CCW/CW
 - Stock # 6507VUI 3/4 HP 120/240 VAC CCW/CW
 - Stock # 6510VUI 1 HP 120/240 VAC CCW/CW
- All Evergreen VS motors are dual rotation (automatically configured at time of installation) and dual voltage (established by the OEM harness)



REMOVAL AND INSTALLATION OF THE MOTOR

Remove the old motor

1. **WARNING!** Turn off the main line voltage disconnect to the HVAC system.
2. Unplug the 5-pin line voltage plug and the 16-pin communication plug from the ECM model 2.0, 2.3 or Eon motor.
3. Remove the old motor from the blower section. Leave the belly band mount connected to the blower section.

NOTE: If the original ECM motor is rated 3/4 or 1 horsepower (HP) and is installed in a 120 VAC application, there may be a power factor correction choke wired in series with the line voltage 5-pin plug. This device should be left in the system as connected by the HVAC OEM.



Install the new Evergreen VS motor

1. Install the new motor in the existing belly band mount so that the motor plugs are facing down between the 4 and 8 o'clock position as installed in the HVAC system. Also adjust the motor so that the belly band does not block any of the motor's vents.
 - If the old motor was built with welded legs or other type of motor mount other than belly band, one of the belly band mounts listed here should be a good match.



Stock # 5K002
48 Frame OEM mount



Stock # 5K003 / 5K004
48 Frame 10" / 11"



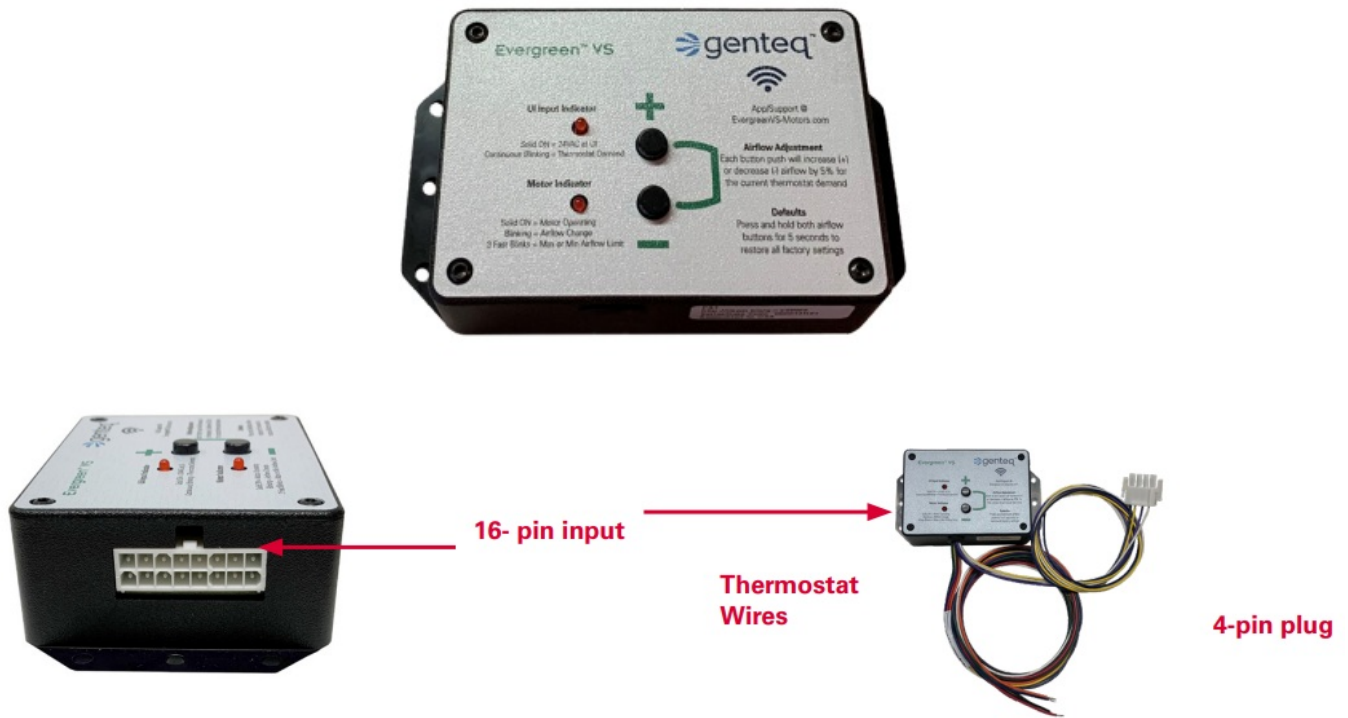
Stock # 5K005
48 Frame 13"

2. Go to the next page to find the instructions on how to connect the Evergreen VS user interface to the motor and HVAC system.
 - Operate the Evergreen VS motor for the first time in the HVAC system. With the first demand to operate the motor, the motor will begin the rotation sensing process.
 - Rotation Sensing – During the rotation sensing process, the motor will operate approximately 5-15 seconds in each direction until it determines the proper direction of rotation. The motor will pause for a few seconds each time it stops before restarting. The rotation sensing process is complete when the motor noticeably increases in speed and continues to run in one direction for more than 30 seconds. From this point forward, the motor will always start in this direction. If this is not the correct direction of operation, and the motor needs to be reversed after rotation sensing is complete, see the bottom of page 10 (CHANGING ROTATION).

INSTALLING THE EVERGREEN® VS USER INTERFACE (UI)

Install the UI so that the buttons are accessible and visible. Orient the UI so that the thermostat wires face down in the HVAC system. There are three holes in each side wing for mounting, and there is two-sided tape on the back. It must also be located to allow the following connections:

- The 16-pin harness from the old motor to the user interface
- The thermostat wires from the user interface to the HVAC system thermostat connections
- The 4-pin harness from the user interface to the new motor



Connecting the user interface (UI) to the new motor and the HVAC system

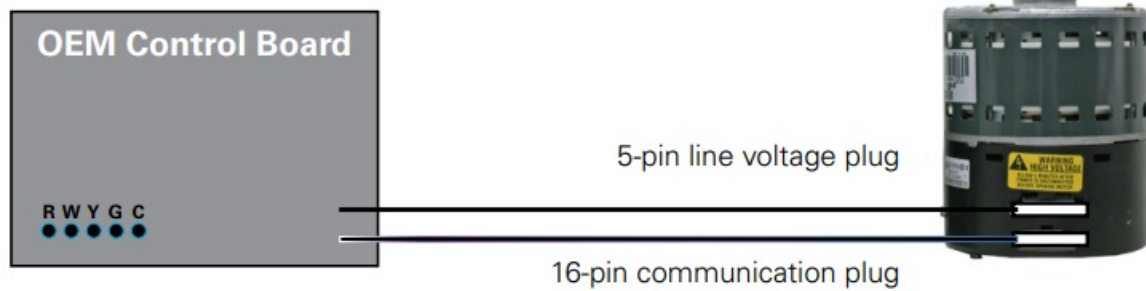
WARNING! Disconnect and lock out the main power from the unit being serviced before installing the Evergreen VS user interface and motor. Confirm that the power is disconnected with a voltmeter.

- Connect the 4-pin plug from the UI to the new motor.
- Connect the 5-pin line voltage plug (disconnected from the old motor) to the new motor.
- Connect the 16-pin communication plug (disconnected from the old motor) to the UI.
- Connect the thermostat wires from the UI to the HVAC system thermostat connections as follows:
 - Connect the RED wire to the thermostat (R) 24 VAC connection
 - Connect the BLUE wire to the thermostat (C) 24 VAC Common connection
 - Connect the GREEN wire to the thermostat (G) Continuous Fan connection
 - Connect W and Y per the diagrams on the next page related to single stage or two stage systems

NOTE: HVAC manufacturers use different nomenclature (letters and/or numbers) to identify their thermostat terminals (example W, W1, W2). On two stage systems it is important to identify the thermostat terminals used for 1st and 2nd stage.

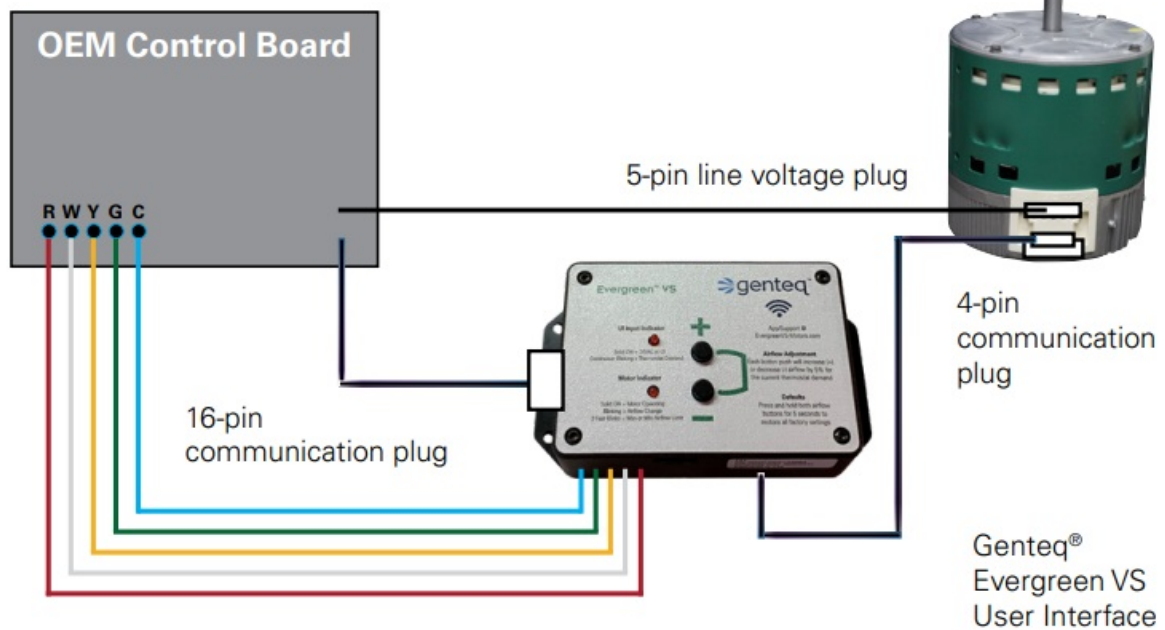
Failed GE model 2.0, Genteq ECM models 2.3 and Eon motor connections

GE®* model 2.0, Genteq® models 2.3 and Eon® motors



Installed Evergreen VS user interface and motor connections

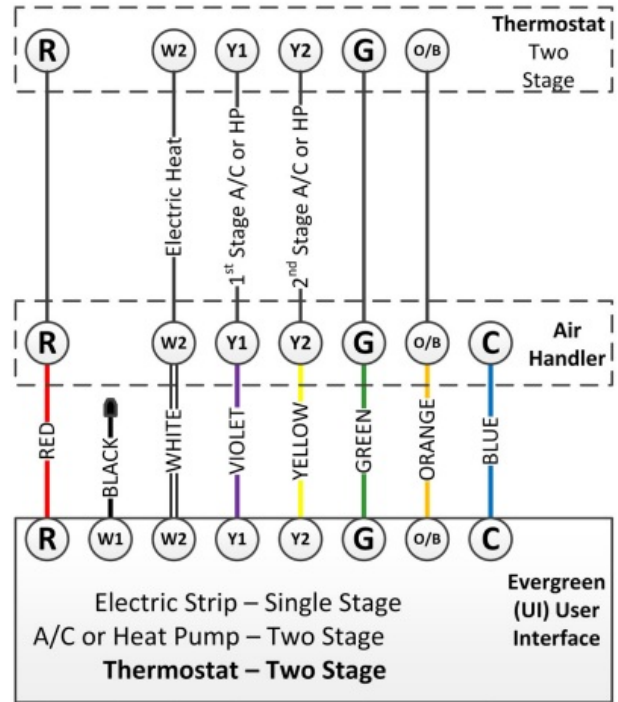
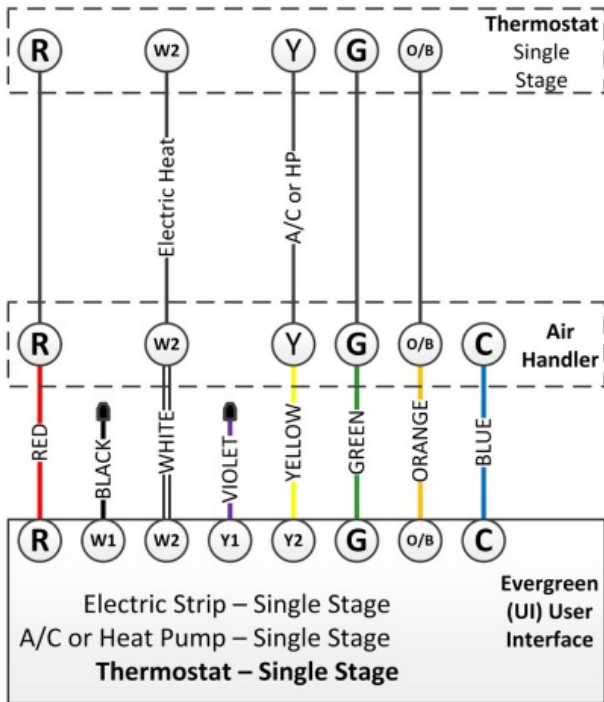
Genteq® Evergreen VS motor and UI



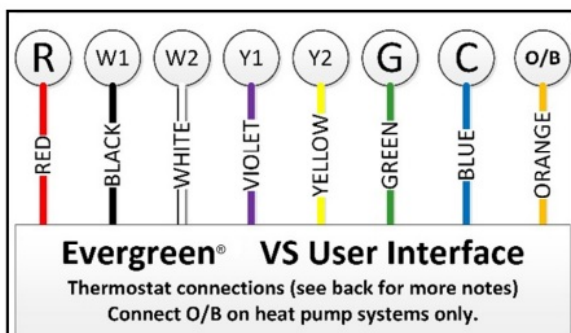
Thermostat wiring diagrams for connecting the Evergreen® VS user interface to:

All electric air handlers and package units

- With or without electric strip heat
- With or without A/C or heat pump systems
- A/C systems DO NOT use the orange wire



The thermostat wire designations and connections legend are provided on either side of the thermostat wire harness decal.



Connect W1, W2, Y1, Y2 by applications listed below	
W = Heat Demand / Y = Cool Demand	
Two stage units with single stage thermostats	Use W1 for heat demand and Y1 for cool demand, cap off W2 & Y2
Two stage units with two stage thermostats	W2 & Y2 = Second stage W1 & Y1 = First stage
Single stage units with single stage thermostats	Use W2 for heat demand and Y2 for cool demand, cap off W1 & Y1
R = 24vac / C = 24vac Common / G = Continuous Fan	

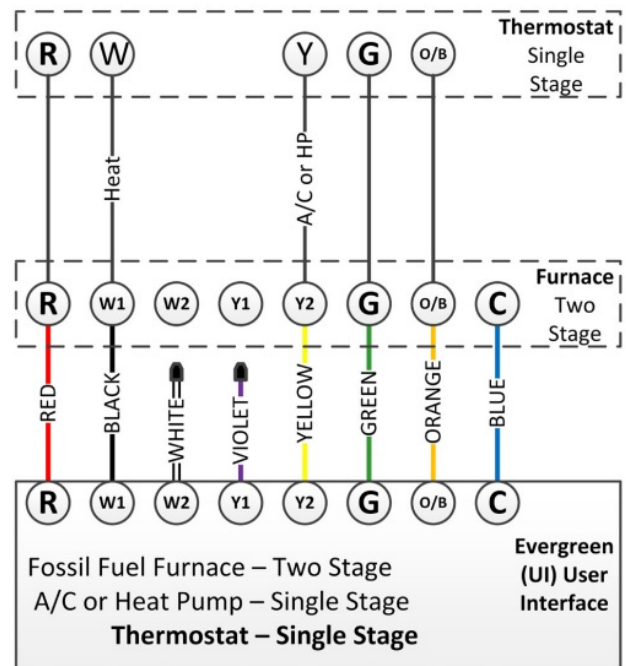
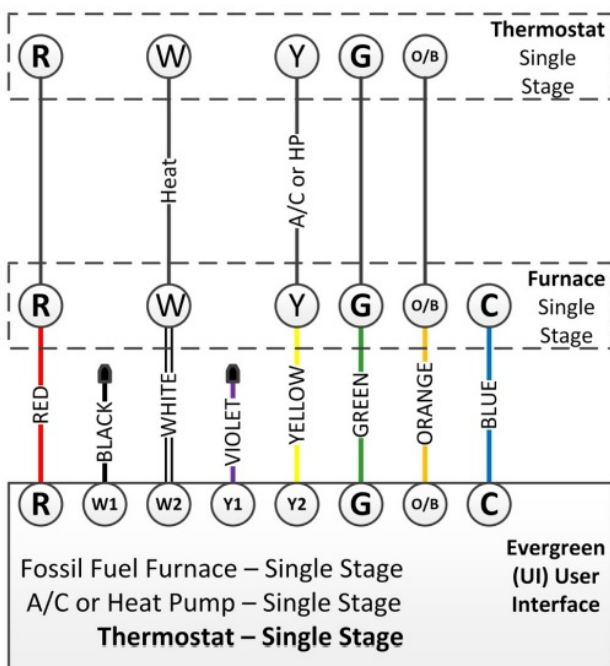
The thermostat wiring diagrams for connecting the Evergreen® VS user interface to:

Fossil fuel furnaces and package units

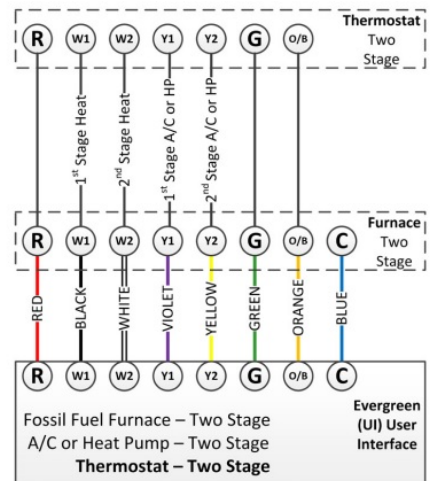
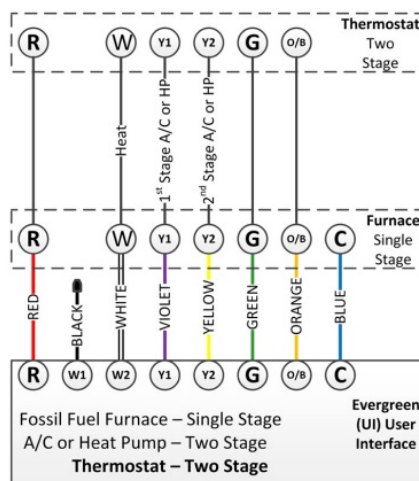
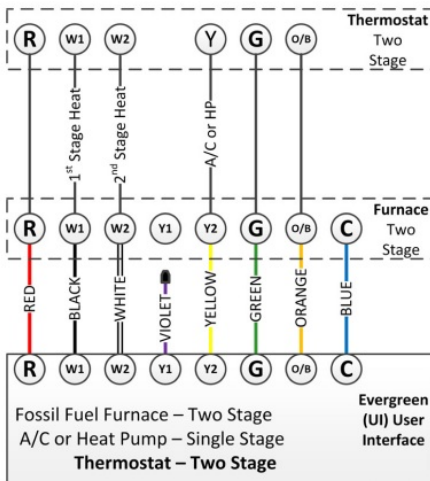
- Including gas, propane or oil
- With or without A/C or heat pump systems
- A/C systems DO NOT use the orange wire



Single Stage Thermostat Systems



Two Stage Thermostat Systems



EVERGREEN® VS USER INTERFACE (UI) OVERVIEW

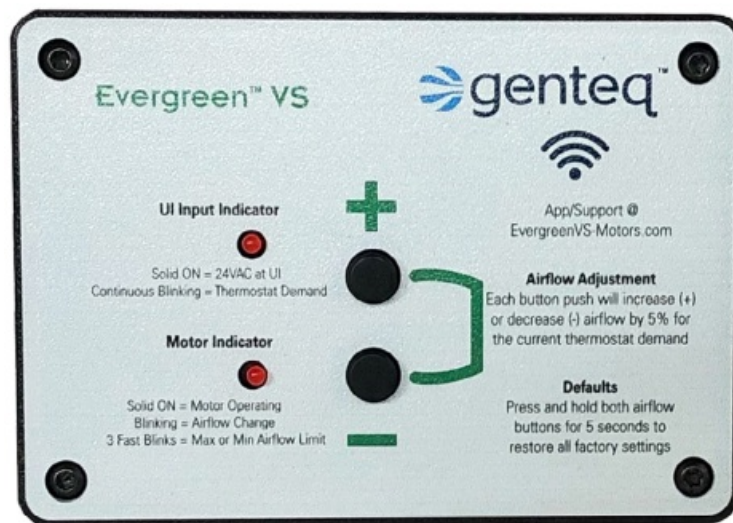
The user interface is pre-programmed with the following default airflow and delays for each mode of operation:

Defaults

- W1 – %A/F = 60 – On Delay = 0 seconds – Off Delay = 90 seconds
- W2 – %A/F = 85 – On Delay = 0 seconds – Off Delay = 90 seconds
- Y1 – %A/F = 60 – On Delay = 0 seconds – Off Delay = 0 seconds
- Y2 – %A/F = 85 – On Delay = 0 seconds – Off Delay = 0 seconds
- G – %A/F = 40 – On Delay = 0 seconds – Off Delay = 0 seconds
- W1-W2 Time Delay 10 minutes
- Y1-Y2 Time Delay 10 minutes

Airflow can easily be adjusted if needed to match the measured temperature rise or CFM values to each HVAC system's capacity requirements. Airflow is increased or decreased while the system is operating in any demand (heat, cool, fan) by pressing the (+) or (-) button. One button press will change the airflow by 5%. When the measured airflow is achieved in a given demand, the UI will store the last adjusted value for that demand. Change the thermostat demand to adjust the airflow in a new demand. When all demand airflow adjustments are complete, the UI will operate at all of the stored values.

If there is a need to reset the airflow and delay values to the factory default settings, press and hold both airflow buttons for 5 seconds. Both LED indicators will flash three times when the reset is complete.



NOTE: If the system is operating in any demand (heat, cool, fan) and the “UI Input Indicator” LED and the “Motor Indicator” LED are both SOLID ON, the UI is detecting a PWM signal from the HVAC system control board through the 16-pin plug. Go directly to page 8 (Sequence of Operation) Pulse Width Modulation (PWM) Mode section.

The “UI Input Indicator” LED provides the following information:

- SOLID ON = The UI is receiving 24 VAC between the RED (R) and the BLUE (common) thermostat wire
- Continuous Blinking = The UI is receiving a thermostat demand (24 VAC on one of these inputs W1, W2, Y1, Y2 or G)

The “Motor Indicator” LED provides the following information:

- SOLID ON = The motor should be operating

- Blinking = Represents a push of an airflow adjustment button
- 3 Fast Blinks = The minimum or maximum airflow adjustment limit

COMMISSIONING

The default airflow values stored in the Evergreen VS user interface may not exactly match the airflow requirements of each system it is installed into. It is highly recommended to operate the HVAC system in all modes of operation, measure airflow and adjust the airflow on the UI, if needed, to match the system performance guidelines in the HVAC system's manual or unit rating plate.

Airflow can be adjusted on two stage systems with a 1st or 2nd stage thermostat demand. There is a fixed delta between W1-W2 and Y1-Y2, which means if you adjust one value up or down the other value moves up or down with it at fixed rate. Most HVAC manufacturers recommend measuring and adjusting airflow in 2nd stage on two stage systems. The fixed delta between these demands can be removed, if needed, using the Evergreen VS Optimizer® tool (see page 9).

The default ON/OFF and second stage delays were selected to provide safe operation for the majority of installed applications. However, these delays can be adjusted if needed to add comfort and/or more precisely match the operation of each unique system using the Evergreen VS Optimizer tool (see page 9).

SEQUENCE OF OPERATION

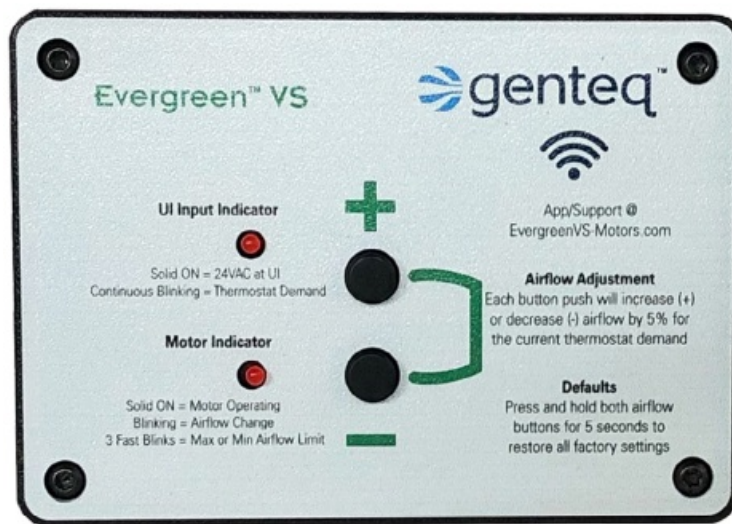
Assuming the default ON/OFF delays have not been changed and the user interface (UI) is receiving 24 VAC on the RED and BLUE thermostat wires, the following will occur:

1. When the UI receives a thermostat input, the (UI Input Indicator) will change from ON to CONTINUOUS BLINKING.
2. The (Motor Indicator) will change from OFF to SOLID ON, and the motor will turn on. The motor will operate at the default airflow setting or the last value selected in this demand.
3. When the thermostat demand ends, the (UI Input Indicator) will change from CONTINUOUS BLINKING to SOLID ON. If the UI was receiving a (Y1 or Y2) demand, the motor will turn off and the (Motor Indicator) will change from SOLID ON to OFF. If the UI was receiving a (W1 or W2) demand, the motor will continue to run for 90 seconds, then the motor will turn off and the (Motor Indicator) will change from SOLID ON to OFF.

NOTE: If the thermostat is set to FAN ON and UI is receiving a thermostat input on (G), the (UI Input Indicator) will display as CONTINUOUS BLINKING, the (Motor Indicator) will display as SOLID ON, and the motor will operate at the (G) airflow value. The motor will follow the sequence above including delays; however, it will return to the (G) airflow value when all other demands are de-energized.

The UI is set by default to automatically switch from W1 to W2 airflow 10 minutes after the thermostat demands for W1 is received. This delay setting is to accommodate two stage fossil fuel systems with single stage thermostats.

If the UI is receiving a 1st stage (W1) thermostat demand, it will transition to the 2nd stage (W2) airflow value if one of the following occurs:



- The UI receives the 2nd stage thermostat demand
- The UI receives the 2nd stage input on the 16-pin plug
- The UI (W1 to W2) time delay times out

Pulse Width Modulation (PWM) Mode

If the system is operating in any demand (heat, cool, fan) and the “UI Input Indicator” LED and the “Motor Indicator” LED are both SOLID ON, the UI is detecting a PWM signal from the HVAC system control board through the 16-pin plug. When a PWM signal is detected the UI will send this information directly to the motor. The airflow buttons on the UI will not adjust airflow. The HVAC system control board settings control the airflow and delays in each demand mode by altering the PWM signal. Reference the HVAC system OEM manual to adjust airflow or delays if needed.

- If the airflow requires adjustment and the HVAC system OEM manual is not available, the PWM function can be disabled to provide full control of airflow in each demand mode from the UI airflow buttons or the Evergreen VS Optimizer® tool. To disable the PWM function, see page 9 (Evergreen VS Optimizer Tool) for instructions on how to access this tool on your smart phone. Follow the instructions inside the Evergreen VS Optimizer tool. Contact technical support if needed at ([866-503-0566](tel:866-503-0566)).

EVERGREEN VS OPTIMIZER® TOOL

The Evergreen® VS user interface (UI) is built with WIFI so that it can connect wirelessly to the Evergreen VS Optimizer tool on a smart phone. The Evergreen VS Optimizer tool is one of the tools available in the Dealer Toolbelt app. The Dealer Toolbelt app is available on both Apple Store®* and Google Play™*. Search the app store for key word “DEALER TOOLBELT”.

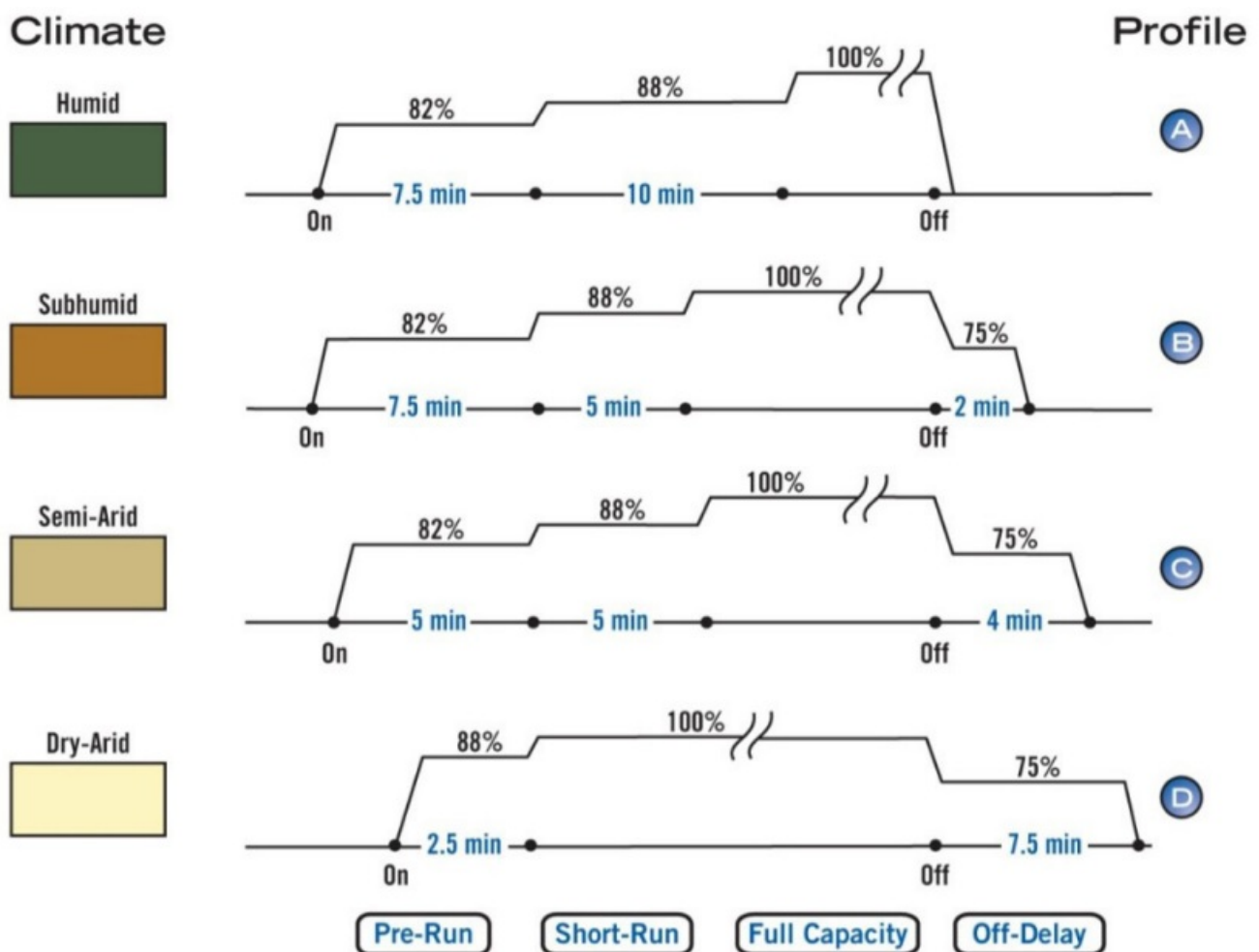
Before opening the Dealer Toolbelt app, confirm the HVAC system is powered and the user interface (UI Input Indicator) is SOLID ON. Go to WIFI settings on your smart device and look for the “Genteq” network. Select the Genteq network and enter password “Evergreen” (password is case sensitive). Now go to the Dealer Toolbelt app.

The Evergreen VS user interface is built with optional advanced features that are available using the Evergreen VS Optimizer tool. On the home screen of the Dealer Toolbelt app, select the Evergreen VS Optimizer tile to begin. There are instruction pages and iNotes throughout the app.

Below is a list of the features available in the app:

- Adjust the horsepower (HP) rating of the motor (HP cannot be adjusted above the nameplate HP rating of the installed Evergreen VS motor)

- Change the rotation of the motor
 - Select the exact wiring diagram that matches each HVAC system configuration
 - Add optional dehumidification (dehum) profiles in Y1 demand for two stage A/C or heat pump systems or Y2 demand for single stage A/C or heat pump systems. (See chart below)
 - Adjust airflow for individual thermostat demands while the system is operating
 - Unlock the fixed delta between W1-W2 and/or Y1-Y2 if needed for more precise airflow adjustment
 - Adjust delays for individual thermostat demands to better match each application
 - On Delay Options 0, 30, 60, 90, 120 seconds
 - Off Delay Options 0, 90, 120, 180, 240 seconds
- NOTE:** On fossil fuel systems, adjusting the On Delay in the W1 and W2 demands from the default of (0) to (30) will give the heat exchanger more time to warm up and provide warmer air temperature at the beginning of each demand.
- NOTE:** On electric strip heat systems, adjust the Off Delay value as needed to match the Off Delay of the sequencer to eliminate the cool air at the end of each demand.
- W1-W2 staging delay options 0, 5, 10, 15, 20 minutes
- Adjust Motor Output Type, this feature should be left at the default setting (Output 1) unless technical support advises otherwise.



DIAGNOSTICS

If the motor does not operate:

The Evergreen® VS motor will only operate if it is receiving line voltage AND communication input from the user

interface (UI).

1. Measure the line voltage at the 5-pin plug connected to the motor. Use the HVAC system schematic if needed. If proper voltage is not present, solve the issue with the HVAC system controls or wiring. If/when proper voltage is present (voltage matching the rating on the motor), go to the next step.
2. Energize any thermostat demand. The "UI Input Indicator" LED should change from SOLID ON to CONTINUOUS BLINKING. If this does not occur, measure the voltage between the RED (R) and BLUE (common) wires from the UI and between the BLUE (common) and the UI thermostat wire that matches the thermostat demand. If both do not read 24 VAC, solve the issue with the HVAC system controls or wiring. If/when the "UI Input Indicator" LED is continuously blinking, go to the next step.

NOTE: If the "UI Input Indicator" LED and the "Motor Indicator" LED are both SOLID ON, go to step 3c.

3. The "Motor Indicator" LED should change from OFF to SOLID ON. Wait at least 2 minutes in case the On Delay has been set to its maximum value.
 - If the "Motor Indicator" LED DOES NOT change from OFF to SOLID ON and the motor does not operate after following the steps above, the UI is failed and should be replaced.
 - If the "Motor Indicator" LED DOES change from OFF to SOLID ON, but the motor does not operate after following the steps above, remove the 4-pin plug from the motor and measure the voltage in the harness plug as described below.
 - If the voltage between the yellow and blue wires measures 0 VDC, the UI is failed and should be replaced.
 - If the voltage measured between the yellow and blue wires measures \geq (greater than or equal to) 2 VDC, the motor is failed and should be replaced.

NOTE: Please contact technical support ([866-503-8566](tel:866-503-8566)) before replacing the UI or the motor if possible to confirm the diagnosis.

If the airflow needs to be adjusted:

See page 7 (Evergreen VS User Interface (UI) Overview) or page 9 (Evergreen VS Optimizer® Tool) for information related to airflow adjustment if needed. If the airflow has been adjusted to its maximum value, see the suggestions below.

- Measure the Total External Static Pressure (TESP). If it is higher than the HVAC unit manufacturer's guidelines correct the airside issue.
- If the motor is operating in the wrong direction there will be low airflow regardless of the airflow setting and very low amperage. See below for instructions to change the rotation.
- It is possible the horsepower (HP) rating of the motor has been reduced with the Evergreen VS Optimizer tool. If this is suspected, download the app (see page 9) and follow the instructions in the app to read the motor's horsepower rating.
- If all of the issues have been corrected or ruled out and there is still insufficient airflow, contact technical support ([866-503-8566](tel:866-503-8566)).

CHANGING ROTATION

If the motor has been operating in one direction for more than one minute and is not operating in the correct direction continue below. If the motor has not been operating for more than a minute, energize the motor and wait

for it to complete the rotation sensing process described on page 3. If the motor is operating in the wrong direction of rotation after the rotation sensing process is complete continue below.

Change rotation with the app. The Evergreen VS Optimizer tool can be used to change the rotation (see page 9).

Change rotation with the reversing harness. The Evergreen rotation reversing harness is available wherever Evergreen products are

sold, catalog # 5K016. The installation instructions are included with the part.



REPLACING GE®* MODEL 2.5 and GENTEQ® 3.0 MOTORS

The Evergreen® VS motor is designed for use in the following types of HVAC systems:

- Furnace, air handler and package units
- Fossil fuel, electric strip heat, A/C, heat pump and geothermal units
- Single stage, multi-stage, modulating and communicating HVAC systems



GE Model 2.5



**Genteq ECM
model 3.0 motor**



Genteq Evergreen VS motor



16-4 Pin Adapter # 5K015

- Install one (1) Evergreen VS motor
 - For proper replacement of model 2.5 and Genteq model 3.0 motors, match the horsepower (HP) and voltage (VAC) ratings of the new Evergreen VS motor to the motor being replaced. It is not necessary for the RPM or the amperage (FLA) to match.
 - Stock # 6503VUI 1/3 HP 120/240 VAC CCW/CW
 - Stock # 6505VUI 1/2 HP 120/240 VAC CCW/CW
 - Stock # 6507VUI 3/4 HP 120/240 VAC CCW/CW
 - Stock # 6510VUI 1 HP 120/240 VAC CCW/CW
- All Evergreen VS motors are dual rotation (automatically configured at time of installation) and dual voltage (established by the OEM harness).
- For replacement of model 2.5 motors, the 16-4 pin adapter (catalog # 5K015) is required. This part is sold separately from the motor.
- When replacing model 2.5, the user interface included in this package is NOT required. See chart on page 2.
- When replacing model 3.0, the user interface included in this package is NOT required. See chart on page 2.

NOTE: The Evergreen VS motor is also sold individually without the user interface included in the package.

REMOVAL AND INSTALLATION OF THE MOTOR

Remove the old motor

1. Turn off the main line voltage disconnect to the HVAC system.
2. Unplug the 5-pin line voltage plug and the 4-pin communication plug from the ECM model 3.0 motor or the 16-pin communication plug from the ECM model 2.5 motor.
3. Remove the old motor from the blower section. Leave the belly band mount connected to the blower section.

NOTE: If the original ECM motor is rated 3/4 or 1 horsepower (HP) and is installed in a 115 VAC application, there may be a power factor correction choke wired in series with the line voltage 5-pin plug. This device should be left in the system as connected by the HVAC OEM.



Install the new Evergreen® VS motor

1. Install the new motor in the existing belly band mount so that the motor plugs are facing down between the 4 and 8 o'clock position as installed in the HVAC system. Also adjust the motor so that the belly band does not block any of the motor's vents.

- If the old motor was built with welded legs or other type of motor mount other than belly band, one of the belly band mounts listed here should be a good match.



Stock # 5K002
48 Frame OEM mount



Stock # 5K003 / 5K004
48 Frame 10" / 11"



Stock # 5K005
48 Frame 13"

2. Reconnect the 5-pin line voltage plug.
3. Reconnect the communication plug.



- Replacing GE® model 2.5 motors – Use the 16-4 pin adapter to connect the original 16-pin harness to the 4-pin plug at the Evergreen VS motor. (The 16-4 pin adapter (catalog # 5K015) is sold separately from the motor.)
 - Replacing Genteq® model 3.0 motors – Connect the 4-pin plug to the Evergreen VS motor.
4. Operate the Evergreen VS motor for the first time in the HVAC system. With the first demand to operate the motor, the motor will either operate in the correct direction of rotation or begin the rotation sensing process.
 - Rotation Sensing – During the rotation sensing process, the motor will operate approximately 5-15 seconds in each direction until it determines the proper direction of rotation. The motor will pause for a few seconds each time it stops before restarting. The rotation sensing process is complete when the motor noticeably increases in speed and continues to run in one direction for more than 30 seconds. From this point forward, the motor will always start in this direction.
 - If the direction of the motor needs to be changed after the rotation sensing process is complete, install the Evergreen Rotation Reversing Harness (catalog # 5K016). This part is sold separately from the Evergreen VS motor.
 5. Operate the HVAC system in all demands and adjust the airflow at the HVAC unit's controls if needed to match the measured temperature rise or CFM values to each HVAC system's capacity and/or rated requirements.

EVERGREEN® VS USER INTERFACE (UI) SPECIFICATIONS

- Approximate Dimensions: 5.25" x 3.1" x 1.45"
- Voltage Rating: Thermostat inputs are rated for 18-30 VAC

Ambient Ratings:

- Operating Temp -20°C to 55°C (-4°F to 131°F)
- Storage Temp -40°C to 70°C (-40°F to 158°F)

Lead Lengths:

- Thermostat leads – 36"
- Motor harness – 36"



EVERGREEN® VS MOTOR SPECIFICATIONS

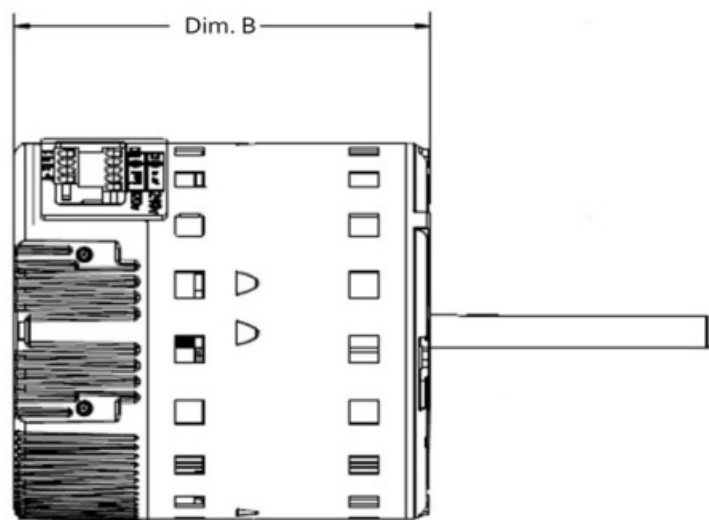
- Voltage: 120/240 (Operating range 90-132 VAC/180-264 VAC)
- Horsepower: 1/3, 1/2, 3/4, 1
- Communication Input: PWM OR DSI (Auto switch)
- Rotation: CW/CCW (Auto Sensing)
- As viewed from lead end
- Bearing: Permanently lubricated ball bearing

Ambient Ratings:

- Powered, not operating: -20° to 65°C (non-icing conditions)
- Operating (1/3, 1/2, and 3/4 HP): -20° to 55°C (non-icing conditions)
- Operating (1 HP): -20° to 45°C (non-icing conditions)
- Enclosure: Open Air Over (OAO), NEMA®* 48-Frame (5.6" diameter)
- Shaft: Single, 1/2" diameter, 5" length, 4.5" single flat

- Mounting: Horizontal or vertical shaft-down (VSD), belly band
 - UL Recognized Component
 - Encapsulated electronics
 - Electronic overload protection
 - 6kV surge protection

STOCK #	HP	VOLTAGE	FLA	ROTATION	RPM	FRAME	DIM B
6503VUI	1/3	120/240	5.0/2.8	CCW/CW	1050	NEMA* 48	5.71
6505VUI	1/2	120/240	7.7/4.3	CCW/CW	1050	NEMA 48	6.21
6507VUI	3/4	120/240	10.1/6.1	CCW/CW	1050	NEMA 48	6.96
6510VUI	1	120/240	12.8/7.4	CCW/CW	1050	NEMA 48	7.71



TECHNICAL SUPPORT

- Contractor Hotline: [866-503-8566](tel:866-503-8566)
- Hours: M-F 8am-5pm CST

Technical support is available for Evergreen products that are installed or serviced by trained and qualified technicians familiar with the Evergreen VS motor and the HVAC system into which it will be installed.

For more information about Evergreen VS motors, scan this code with your smart phone or go to:
www.EvergreenVS-motors.com



Terms & Conditions of Sale & Limited Warranty

Sales of the products described in this Installation Manual are subject to the "Regal Rexnord Terms and Conditions of Sale" current at the time of sale. They are accessible on RegalRexnord.com –

<https://www.regalrexnord.com> (click “Terms and Conditions of Sale”).

The full Limited Warranty, including the scope and period, remedies, exclusions and disclaimers, is described in Section 10 “Limited Warranty” of the Regal Terms and Conditions of Sale and applies except as described below: Section 10(a)(1) is replaced with the following: Seller warrants that the Products shall be delivered free from defects in material, workmanship and title. This warranty shall expire twenty-four (24) months from first use of the Product or thirty (30) months from date of shipment of the Product, whichever occurs first.


NEMA is believed to be the trademark and/or trade name of National Electrical Manufacturers Association and is not owned or controlled by Regal Rexnord Corporation.

Regal Rexnord, Eon, Eon+, Evergreen, Evergreen VS Optimizer, and Genteq are trademarks of Regal Rexnord Corporation or one of its affiliated companies.

©2023 Regal Rexnord Corporation, All Rights Reserved. MCIM23005E • Form# G0148E

Regal Beloit America, Inc.
1325 Heil Quaker Blvd.
LaVergne, TN 37086
Customer Service: 800 672 6495
www.thedealertools.com
www.regalrexnord.com

Documents / Resources

	<p>RegalRexnord G0148E Motor Replacement for Variable Speed Motors [pdf] Installation Guide</p> <p>G0148E, G0148E Motor Replacement for Variable Speed Motors, Motor Replacement for Variable Speed Motors, Variable Speed Motors, Motors</p>
--	---

References

- [User Manual](#)

Manuals+ Privacy Policy

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.