

## **Motor Minute™ Technical Tip – How To Diagnose Genteq® Constant Airflow (Variable Speed) ECM Motors**

Hi, Chris from Regal Rexnord here with your Motor Minute technical tip. Helping you become an HVAC motor pro one minute at a time.

In today's Motor Minute technical tip, we are going to discuss how to diagnose Genteq constant airflow (variable speed) ECM motors.

There are two inputs required to operate Genteq variable speed motors, line voltage and communication. The line voltage connection is the 5-pin plug. The communication input is either 16-pin or 4-pin depending on the model of the motor.

The line voltage power supply connected to the variable speed motor is powered whenever the HVAC unit disconnect is closed. Open the main disconnect, remove the line voltage connection plug, close the main disconnect and measure the voltage at the plug.

The line voltage measured should equal the motor's rated voltage  $\pm 10\%$ .

- If the voltage measured is accurate, continue to the communication diagnostics.
- If the voltage measured is not accurate, correct the issue with the line voltage power supply.

After the correct line voltage has been measured or repaired, open the main disconnect and reconnect the line voltage plug to the motor.

The communication input provides the motor with the command to operate when there is a thermostat demand. Due to the complexity and versatility of this type of input, we suggest using the TECINSpect® diagnostic tool to reduce the possibility of an incorrect diagnosis.

The TECINSpect diagnostic tool is simply connected to a 24VAC power supply and the communication input at the motor. It is built with a 16 and 4-pin plug for both styles of motors.

With the TECINSpect diagnostic tool connected to the motor, and line voltage power supply turned on, set the TECINSpect diagnostic tool switch to "ON".

- If the motor does not operate, replace the motor.
- If the motor does operate, there is an issue with the communication from the HVAC unit control board to the motor. Diagnose the issue with the HVAC unit manuals.

The TECINSpect diagnostic tool is compatible with the Genteq (or formerly branded GE\*\* or GE ECM By Regal Beloit) motors listed below. Other ECM manufacturers provide their own similar type of diagnostic tool. Always use the correct tool for each motor to achieve a proper diagnosis.

- GE model 2.0, Genteq models 2.3, Eon® and 3.0 motors

In the new dealer toolbelt app you can find all of the diagnostic information we just discussed in the resource center.

And that's a wrap on this segment of Motor Minute technical tips. Remember that we provide motor training and product information in multiple formats including videos, literature, podcasts, articles, of course Motor Minute technical tips and classroom education both online and face to face. All of this industry leading training is available at no charge to HVAC professionals at [regalmmu.com](http://regalmmu.com). Thank you for taking the time to build your motor knowledge.