

Letter: **ST-008-2020**

Date: April 27, 2020

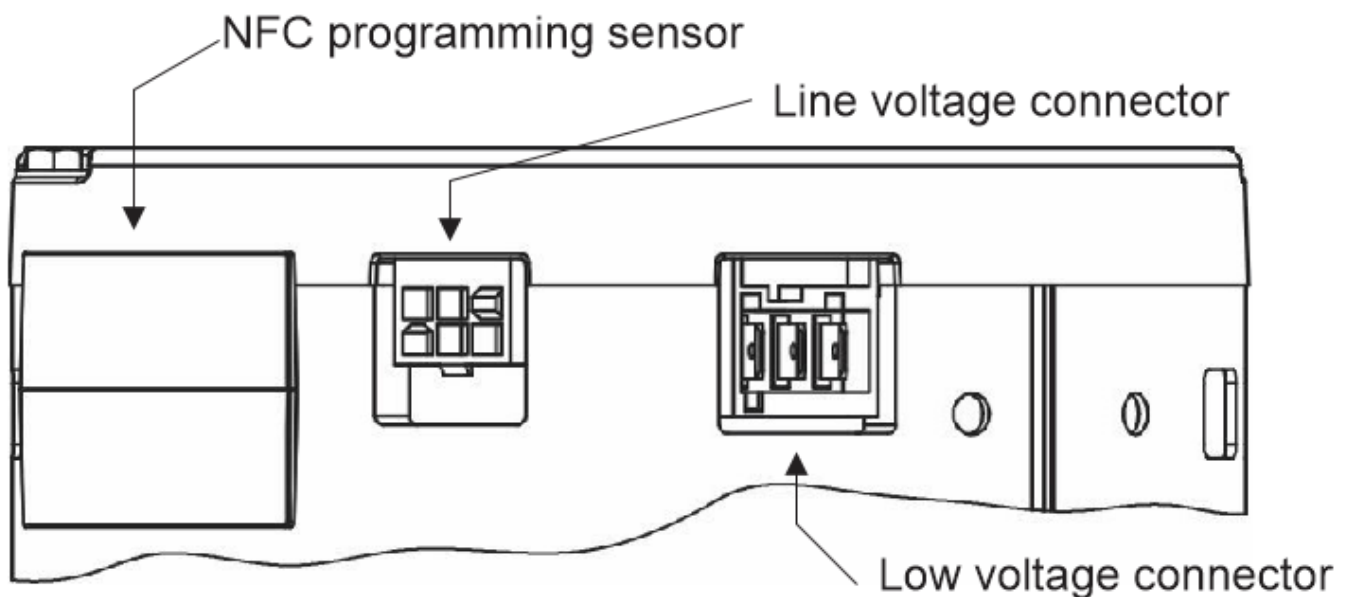
To: All Ducted Systems Branch Service, Sales, and Training Managers  
All Ducted Systems Distribution Service, Sales, and Training Managers  
All Ducted Systems Branch and Distribution Source 1 Customers

Subject: **Blower motor noise during shut-down – Regal Beloit Ensite® Blower Motors.**

Product: TM8X, TMLX, TM9X, TM9E, TM9Y, RGF19\*E, RGF29\*E, RGF1L\*E, RGF2L\*E, MM9E

Summary: **This letter provides explanation and resolution for complaints of blower motor noise occurring during motor shut-down.**

Starting in early 2019, some furnace blower motors have been changed from Regal Beloit EnduraPro® motor to the Regal Beloit Ensite® motor. The Ensite® motor has several unique features to differentiate it from the EnduraPro® motor. The motor is lighter in weight, has better performance, can be programmed using NFC (near field communications) and the electrical connections are on smaller simple connectors in lieu of individual speed tap connectors. The Ensite motor can be easily identified by its unique electrical connections. An image of the Ensite motor connections is shown below.




We began to receive complaints of excessive blower motor noise occurring during the motor shut down (coast down) process. Further investigation revealed that the Ensite motor took much more time to shut down when compared to the previously utilized EnduraPro® motors. The rotational modulating tone heard at lower speed

during coast down is the motor and wheel torsional resonance. The amplitude of the noise varies with application and installation, but with the Ensite® motor & our blower housing system resonance, the noise peaks on low rpm. The size of return air duct amplifies the noise as well as other site-specific conditions. This noise most likely could be remedied by using acoustical duct liner inside the return air duct which is common in many commercial installations.

Factory ECM engineering motor programming allows for many different options and settings. One of these settings is a “braking” option as shown below.

**Program Configuration for Ensite**

Operating Mode 	<input checked="" type="radio"/> Discrete Speeds <input type="radio"/> Variable Speed <input type="radio"/> No Run	Voltage 120V	Horsepower <input checked="" type="radio"/> 1/3 HP <input type="radio"/> 1/2 HP <input type="radio"/> 5/8 HP
Braking Enabled <a href="#">Hide Chart</a>	<input checked="" type="radio"/> Yes <input type="radio"/> No	Endura Emulation <input checked="" type="radio"/> Yes <input type="radio"/> No	Direction of Rotation [as viewed from the lead end] <input checked="" type="radio"/> CCW <input type="radio"/> CW

By enabling the motor’s brake option, the motor will slow much quicker through this resonance minimizing the effect. We enabled the braking on some motors and sent them to various field sites experiencing the shut-down noise described above. The issue was resolved at every one of the field sites with the replacement motor.

Due to successful field trials, the decision was made to enable the braking option. All factory furnace production after 6:45 AM on 03/04/20 contain motors with the updated program. All Source One Ensite® programmed motor inventory was placed on hold. Each motor was reprogrammed with the updated program. Any Source One Ensite programmed motor shipped after 4:30 PM on 03/03/20 contains the updated program.

Programed motor part numbers **did not** change. The programmed motor part number is also how the motor program is looked up at the distributor level for distributors that program their own motors using blank motors. Any motor programmed at the distributor level after 4:30 PM on 03/03/20 will contain the updated program.

If a customer experiences the shut-down noise described above in a furnace built before the date above, the motor should be replaced under standard unit warranty. For distributors that program their own motors in house, the installed trouble motor could be re-programmed however it would not be practical for a dealer to remove a motor, have it re-programmed at the distributor location, then return to the site for installation.

If you have any questions on this feel free to call Ducted Systems Technical Services at 1-877-UPG-SERV and speak with a technical support representative. Or you can email us at [be-ams-be-ductedsystemsresidentialdistributorsupport@jci.com](mailto:be-ams-be-ductedsystemsresidentialdistributorsupport@jci.com)



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