

Lubrication of ECM Motor Connections

This bulletin applies to Allied communicating furnaces and air handlers with ECM 3.0 blower motors with a 4 pin communication connector.

A condition known as fretting corrosion can cause degraded performance of connectors with tin lead plated contacts, which may result in **201** error codes (Loss of Communication) in Lennox communicating HVAC systems. Lubrication of connector contacts can correct and prevent fretting corrosion. This document describes the recommended method for application of dielectric grease to ECM motor connectors.

Vibration, thermal cycling and other factors can cause micro-motion within a mated connection. Micro-motion can result in fretting corrosion on contacts with tin lead plating in the mating area, which degrades the electrical connection. Simply de-mating and re-mating the connection can correct the connection, but it generally will recur. Lubrication of the contact with a proper synthetic dielectric grease material can arrest and prevent corrosion, producing a more reliable long-term connection.

NOTE - A dielectric is a substance that is a poor conductor of electricity. It is a silica thickened, medium viscosity, synthetic hydrocarbon grease for lubrication and protection of electrical contacts. Benefits include good water resistance.

1. Materials Required

This procedure requires one of the following synthetic dielectric lubricants:

Description	Manufacturer Mfr.	P/N
Silicone Dielectric Grease	Super Lube	91003
Electrical Insulating Compound	Dow Corning	Dow Corning 4
NyoGel	Nye Lubricants	760G

NOTE - Be sure to use one of these specific materials. Other lubricants may not have proper dielectric properties.

2. Instructions

Step 1 - Prior to applying lubricant, perform a de-mate / re-mate / de-mate cycle of each connector to prepare the contact surface.

Step 2 - Apply lubricant to ONLY the female terminals (wire harness side) at four locations:

- 4-pin communication connector (motor end)
- 3 active pins of the high voltage power connector (motor end)
- 4 active pins of the communication connector (control end)
- 3-pin high voltage power connector (control end, air handlers only)

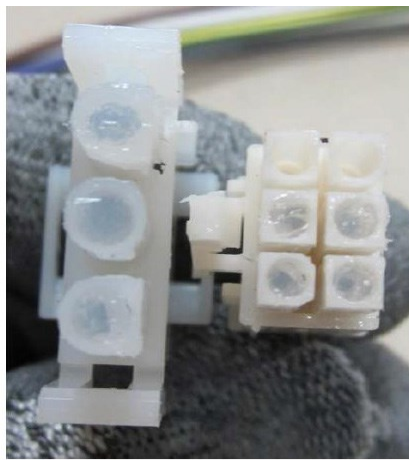
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Fill the end of the connector housing with lubricant completely to the open end of the contact.

Avoid contamination of the lubricant with dust, dirt, fibers or any other material. Take care that the application method used does not introduce any contaminants (such as fibers from a cloth or cotton swab).

CAUTION: Do not insert any object inside the female contact, to prevent physical damage to the contact or to the contact spring force.



Control Board Plug-Ins



Motor Plug-Ins



Cutaway View

NOTE - The plug cutaway view shows the proper application of the grease. It should cover the top of the plug openings and extend about 1/4 of an inch down into the plug. The plug socket should not be filled up with grease. Do not cut or alter the plug.

Step 3 - Remove any excess lubricant from the outside surface of the connector housing.

Step 4 - Re-mate the connectors.

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