| YORK® | Form No.: 160.00-M1 LS04 | 1002 |
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| | Supersedes: 160.00-M1 (LS04) (702) | |
| **LITERATURE SUPPLEMENT** | File with: 160.00-M1 | |
| Subject: Variable Speed Compressor Serial Communications Faults | | |

### Background
An increase in the number of Serial Communications Faults is occurring in the field. These faults are associated with the grounding system of chillers using a variable speed compressor drive.

### Units Affected
All YT and YK chillers with variable speed drive manufactured between March 2000 and July 2002 can experience this fault. These changes will also apply to fixed speed chillers manufactured between March 2000 and July 2002, if a VSD is retrofitted later.

### Symptom of Failure
The chiller is shutdown on "VSD – SERIAL COMMUNICATIONS". This shutdown is normally a cycling shutdown, but in this case, the chiller will not automatically restart. The VSD Comms. Diagnostics Screen on the OptiView Control Panel will display an increasing counter for the ACC – Panel. This counter may also have a maximum value of 255. *Note: The Diagnostics Screen is only available with Service Access*.

The VSD Comms. Counters are available by pressing the following keys in order:
SETPOINTS
SETUP
DIAGNOSTICS
VSD COMMS.
CR4 – CR7 will flash as if the communications are working properly. To clear the shutdown, power to the chiller must be removed and reapplied. The solutions below should be performed as a preventive measure, regardless if symptoms are present or not.

### Cause of Failure
Over time the grounding design within the chiller system has changed. These changes do not affect the safety grounding required by UL. However, these changes gradually increase electronic "noise" on the Adaptive Capacity Control board (ACC) to the point the ACC board's serial communications can lock-up.

### Solution
Check the following items. All work should be performed with power removed from the chiller.

- Verify the four VSD mounting bolts have external tooth washers installed at the interface of the bolt head and VSD enclosure, and the nut and the VSD mounting bracket from the chiller. No flat washers should be used at these locations.

- Verify the four OptiView Control Panel mounting bolts have external tooth washers installed at the interface of the bolt head and OptiView Panel enclosure, and the nut and the OptiView Panel mounting bracket from the chiller. Many OptiView Control Panels have flat washers installed at these locations. The flat washers must be removed and replaced with external tooth washers.

- The shield grounding of the VSD communications, and the Harmonic Filter communications if installed, should be removed from the metal plate connected to the OptiView Control Panel and connected to the OptiView Control Panel's enclosure. Drill a hole in the panel near the plate, and reconnect the shield grounds using a self-tapping screw. Do not add any additional wire.

- The shield grounds for the transducers should be removed from the metal plate connected to the OptiView Control Panel and connected to the OptiView Control Panel's enclosure. Drill a hole in the panel near the plate, and reconnect the shield grounds using a self-tapping screw. Do not add any additional wire.

- On a VSD retrofit where the VSD is not mounted on the chiller, add a ground wire between the motor frame and the OptiView Control Panel enclosure.

- Upgrade the software on the Adaptive Capacity Control Board. The new software is version C.ACC.01.03a, or greater. The new software contains communications improvements. The software part number did not change.

For the following procedures refer to Figure 1.

1. At J6 of the ACC board cut wire 306, 2-½ inches from the ACC board. Tape off the wire end that is not connected to the ACC board. Install a lug on the wire end that is still connected to the ACC board. Drill a hole near the ACC board so this lug can be grounded to the OptiView Control Panel's enclosure. Connect the ground to the enclosure with a self-tapping screw.

2. At J8 of the ACC board remove the black wire insert in pin 2 of J8. Cut off the pin and install a lug on the wire so that it can be connected to the OptiView Control Panel's enclosure. Connect this wire to the enclosure where the shield of J8 is connected.

3. If the Harmonic Filter is not installed, then remove the connector installed in J9. This cable should be tied back so that it is not accidentally reinstalled at a later date.

   If the Harmonic Filter is installed, then remove the black wire insert in pin 4 of J9 on the ACC board. Cut off the pin and install a lug on the wire so that it can be connected to the OptiView Panel's enclosure. Connect this wire to the enclosure where the shield of J9 is connected


*Ensure that ALL metal shavings are removed from the inside of the OptiView Control Panel before reapplying power to the chiller. Damage to electronic boards can result from metal shavings causing shorts*.

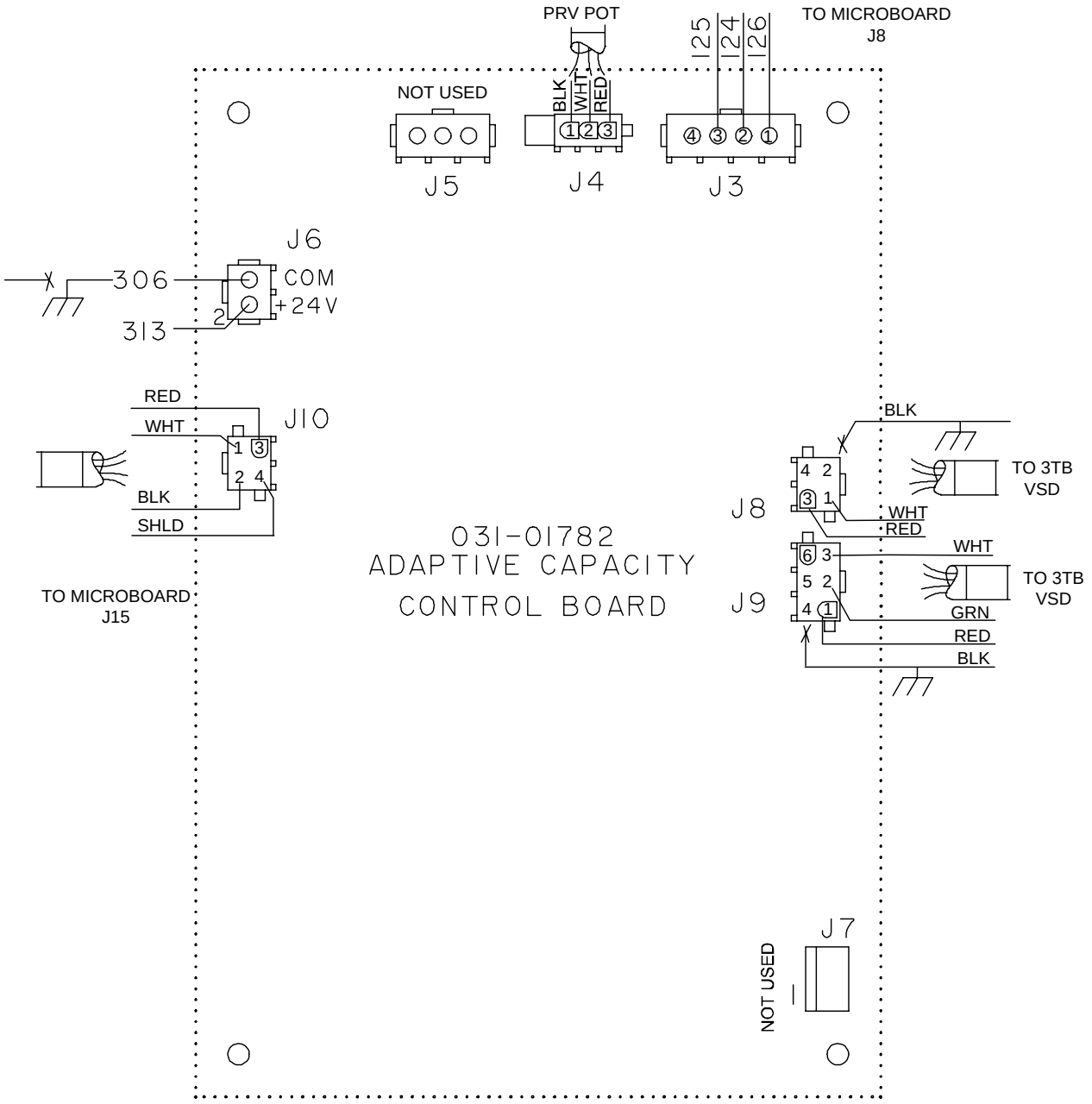


Figure 1 – ACC Board Wiring Changes

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