YORK
BY JOHNSON CONTROLS

Service Information

File In/With: 201.21-NM1, -NM2, -NM3, 201.21-NM4, 201.23-NM1, 201.23-NM2	**SI0223**
	New **510**
Equipment Affected: YCAV & YCIV Chillers	

YCAV & YCIV VSD Capacitor Bank Does Not Discharge

PROBLEM

Capacitor bank (DC Bus) in the VSD does not fully discharge.

DANGER

Always check the DC bus voltage across the top and bottom banks of capacitors with a known functioning voltmeter, correctly set to the proper scale, before performing service on the inverter or any other electronics inside the panel. For the purpose of safety, DO NOT rely on the bleeder resistors to discharge the capacitor banks.

DANGER

NEVER short out a capacitor bank to discharge it during servicing. If the 1 RES or 2 RES bleeder resistors or wiring is open and the capacitor bank will not discharge, immediately contact Johnson Controls Product Technical Support or perform the procedure below to discharge the capacitor bank.

DANGER

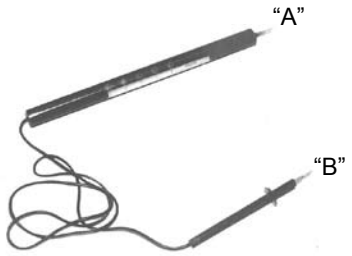
This product contains voltages that could cause death or serious injury! Personnel not familiar with AC drives and proper electrical safety procedures should not be working on this product. Servicing this equipment should not be undertaken unless the individual(s) have been trained in the proper maintenance of this equipment and are familiar with its potential hazards.

SOLUTION

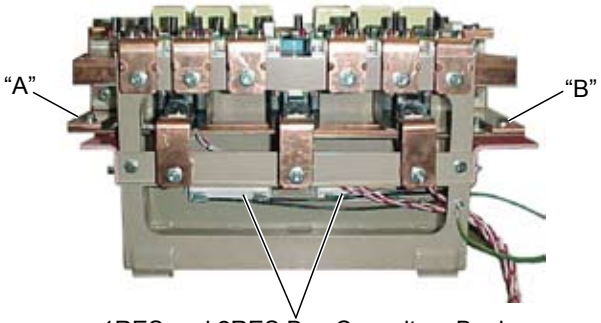
1. Turn power OFF to the chiller.
2. Wait 5 minutes for the DC bus voltage to drop below 10VDC.
3. If the voltage stays above 10VDC according to the DC Bus Voltage Display under the VSD DATA key, place the Discharge Probe leads across points A and B.

DANGER

DO NOT use any metal objects to short out the capacitor bank due to the possibility of serious bodily injury as well as damage to the drive.



Discharge Probe - P/N 031-00733-000

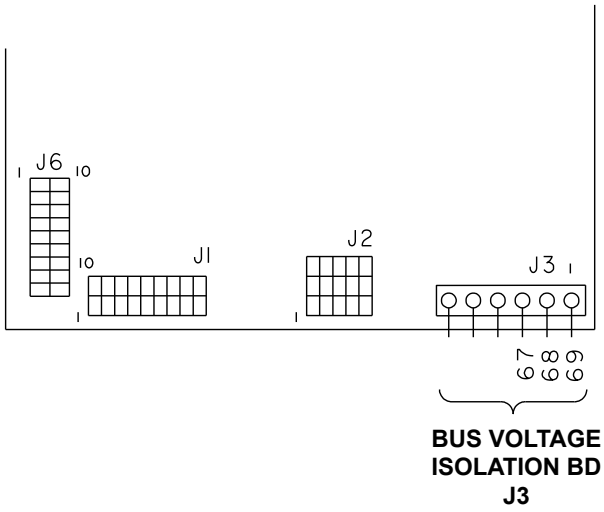


1RES and 2RES Bus Capacitors Bank Equalizing / Bleeder Resistors

4. Wait for the lights on the Discharge Probe to go out.
5. Check the voltage at the same points with a VOM.
6. Check the 1/2 bus voltage on J3-1 to J3-2 and J3-2 to J3-3. They should read less than 5VDC.

NOTE

If you suspect the discharge probe may be damaged or not working, re-check with your meter to verify the capacitor bank is discharged.



7. If the probe does not discharge the capacitor bank and voltage greater than 10VDC exists, place the Discharge Probe into a 125VAC socket **for just a second** to see if the lights on the probe light up, verifying the probe is OK. Immediately remove the probe from the 125VAC socket to avoid damage.

Troubleshooting checks after the VSD capacitor bank is discharged to 0VDC with the Discharge Probe:

a) Measure the resistance of 1RES and 2RES. Each resistor should measure about 2.4K Ohms. Replace any resistor that is open.

b) Check the continuity of the wiring between 1RES and 2RES to the connections on the capacitor bank. Look for loose connections, overheated connections, or broken wires. Repair any wiring problems that are identified.