

 BY JOHNSON CONTROLS	LIQUID COOLED VARIABLE SPEED DRIVE	
SERVICE INSTRUCTIONS	Supersedes: 201.21-M2 (712)	Form 201.21-M2 (313)

YCAV / YCIV / YVAA / YVWA TROUBLESHOOTING GUIDE FOR LIQUID COOLED VARIABLE SPEED DRIVES



50056

60 / 50 HZ (P/N 371-04178-XXX)

Issue Date:
March 4, 2013



IMPORTANT!

READ BEFORE PROCEEDING!

GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in

which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized operating/service personnel. It is expected that these individuals possess independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.

SAFETY SYMBOLS

The following symbols are used in this document to alert the reader to specific situations:



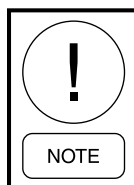
Indicates a possible hazardous situation which will result in death or serious injury if proper care is not taken.



Identifies a hazard which could lead to damage to the machine, damage to other equipment and/or environmental pollution if proper care is not taken or instructions are not followed.



Indicates a potentially hazardous situation which will result in possible injuries or damage to equipment if proper care is not taken.



Highlights additional information useful to the technician in completing the work being performed properly.



External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micro panel. All wiring must be in accordance with Johnson Controls' published specifications and must be performed only by a qualified electrician. Johnson Controls will NOT be responsible for damage/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this warning will void the manufacturer's warranty and cause serious damage to property or personal injury.

TROUBLE SHOOTING THE VSD

The drawing below is for the YCAV /YCIV / YVAA / YVWA Drive. This drawing is intended for troubleshooting the drive with the factories assistance. If you experience a Drive failure, call JCI / York Factory for Technical assistance and you will be instructed on which testing and blanks need to be looked at to determine your failure. **DO NOT** take readings till you are instructed to do so from the York /JCI Factory. This drawing is provided so all parties are looking at the same drawing when troubleshooting the Drive.

When calling into JCI/York, you will need the following information:

1. The first 14 letters/numbers in the Chiller Model Number
2. Problem with the Drive
3. Troubleshooting you already performed and your findings

4. Parts you replaced
5. Which system is having the problem (1-2-3-etc.)
6. Type of facility is the drive installed in (School, Factory, computer facility, Comfort Cooling, etc.)
7. You will need the Drive Service Manual = 201.21-M1 (612) New or (302) Old (either one is OK). These manuals can be retrieved from the JCI web site.

This drawing can be put on file in the District office for future troubleshooting for all to refer too.

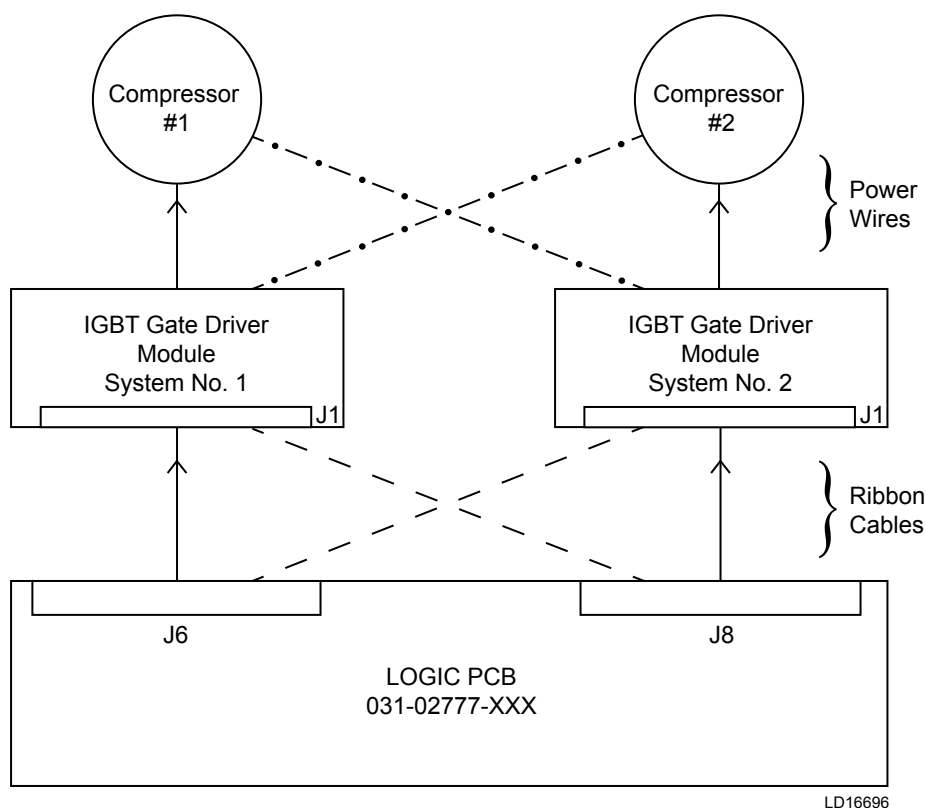
DO NOT leave this drawing at the job site with the Drive.

Note: This example is of a 2 compressor system

Test No. 1- _____

Test No. 2- _ _ _ _ _

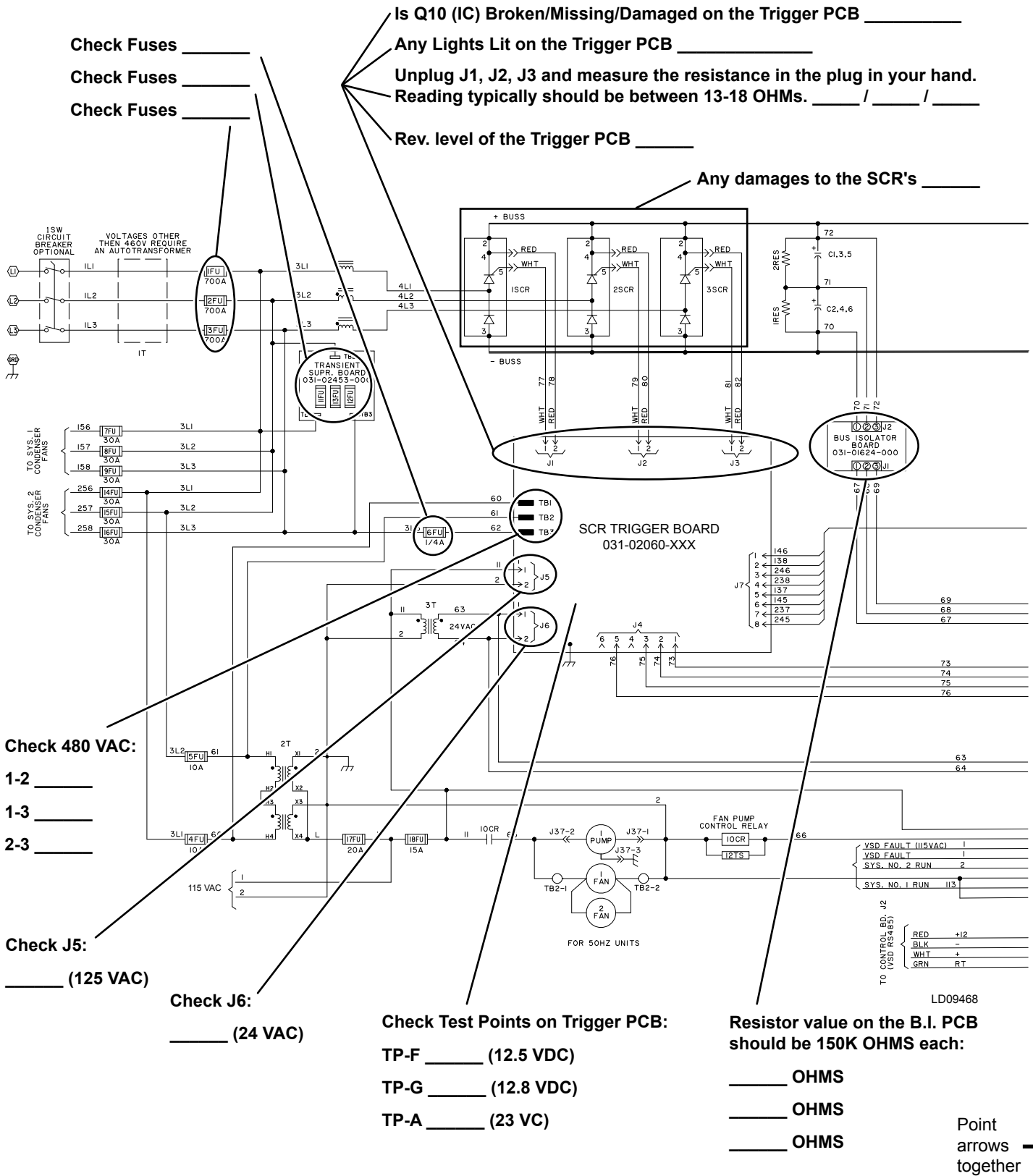
Test No. 3- _ . _ . _ . _ . _ . _ . _ . _ . _ .



DO NOT Do the above testing unless instructed by York/JCI Factory Service. You will be instructed what to do and in what order. The above drawing is for you to follow as the factory service groups instruct you

what to do. The above drawing is provided so we are all looking at the same drawing. This will eliminate any confusion on what to do.

WHEN TROUBLESHOOTING THE VSD, USE FORM 201.21-M1



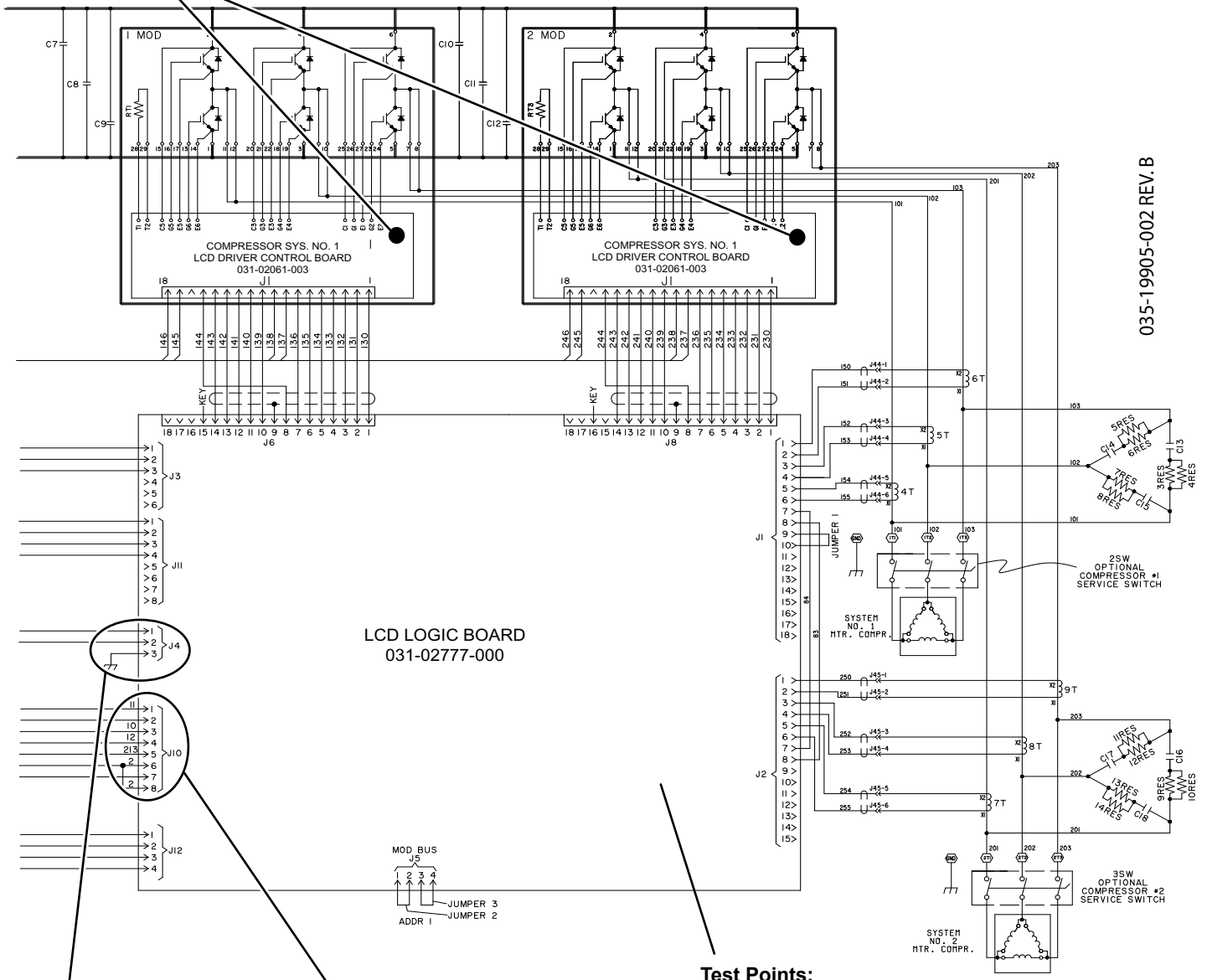
JOB NAME _____ TECHNICIAN _____ PHONE _____ DATE _____
E-MAIL _____ FAX _____ YCIV _____ YCAV _____

PROBLEM WITH DRIVE: _____

Are all the 6 LED's lit on the IGBT modules:

SYS. 1 _____ / SYS. 2 _____ / SYS. 3 _____ / SYS. 4 _____

Are the IGBT modules Damaged/Broken/Burnt: _____



035-19905-002 REV. B

J4-1 to 2: (24 VAC) _____

Point
arrows
together

J10-1 to GND: (125 VAC) _____

Test Points:

1 (15 VDC) _____

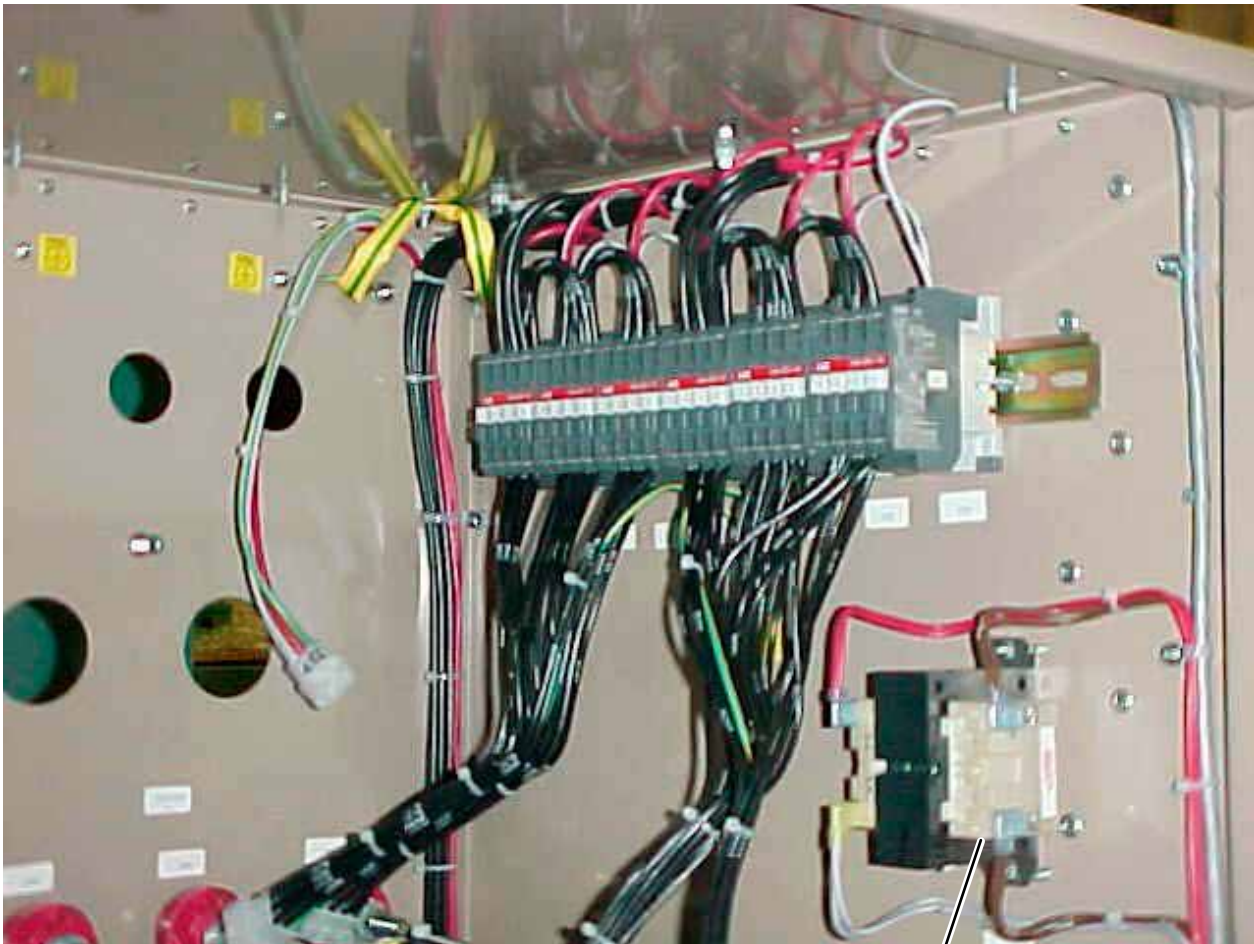
3 (5 VDC) _____

4 (7.5 VDC) _____

5 (-15 VDC) _____

7 (-4.9 VDC) _____

Use Test Point "6" for your GND.

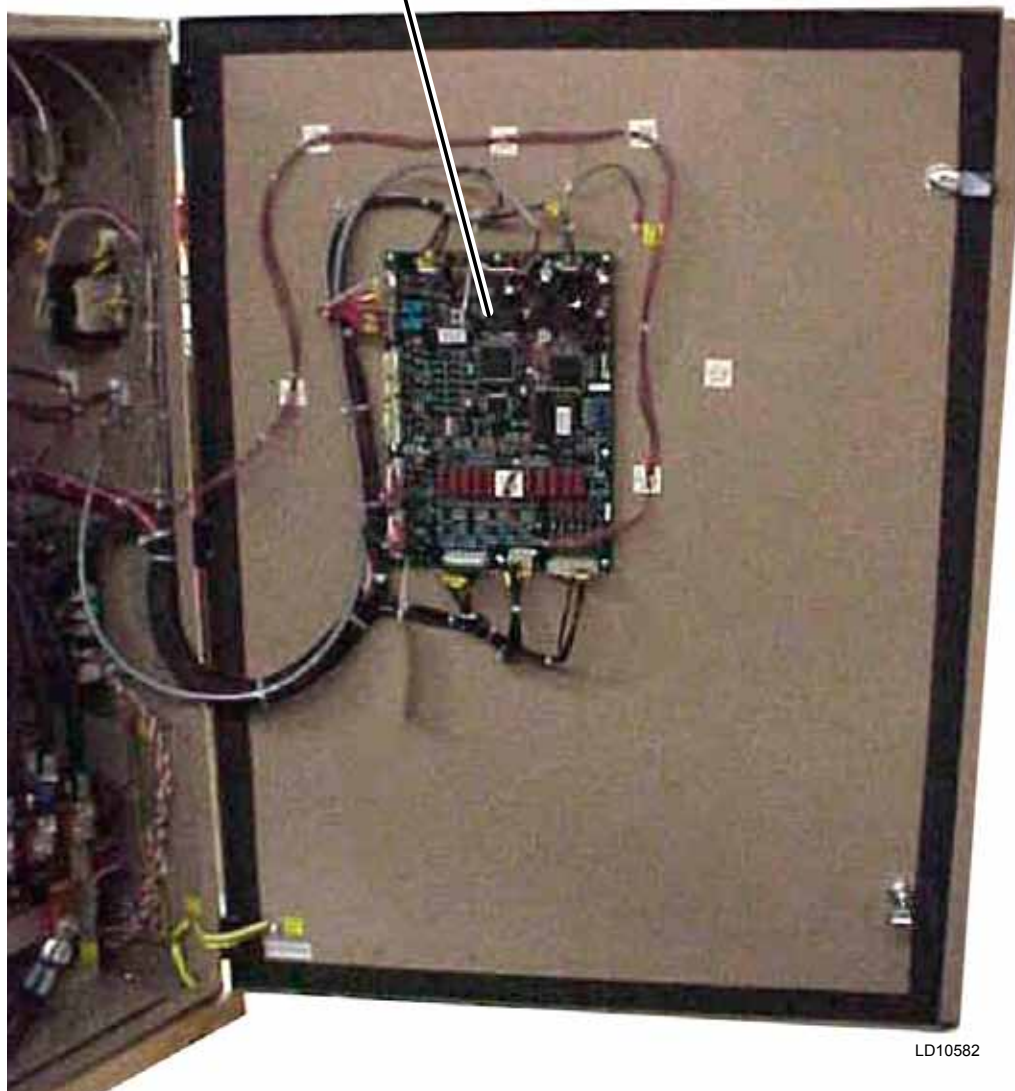


LD10584

3T TRANSFORMER
(24VAC to SCR Gate Driver Board and VSD Logic Board)

FIGURE 1 - FAN CONTACTORS AND 3T TRANSFORMER, 2 COMPRESSOR

VSD
LOGIC BOARD



DC Bus Voltage Isolation Board



FIGURE 2 - VSD LOGIC BOARD

TRANSIENT
SUPPRESSOR BOARD
(3-Phase Input)



LD10585

FIGURE 3 - VSD TRANSIENT SUPPRESSOR BOARD

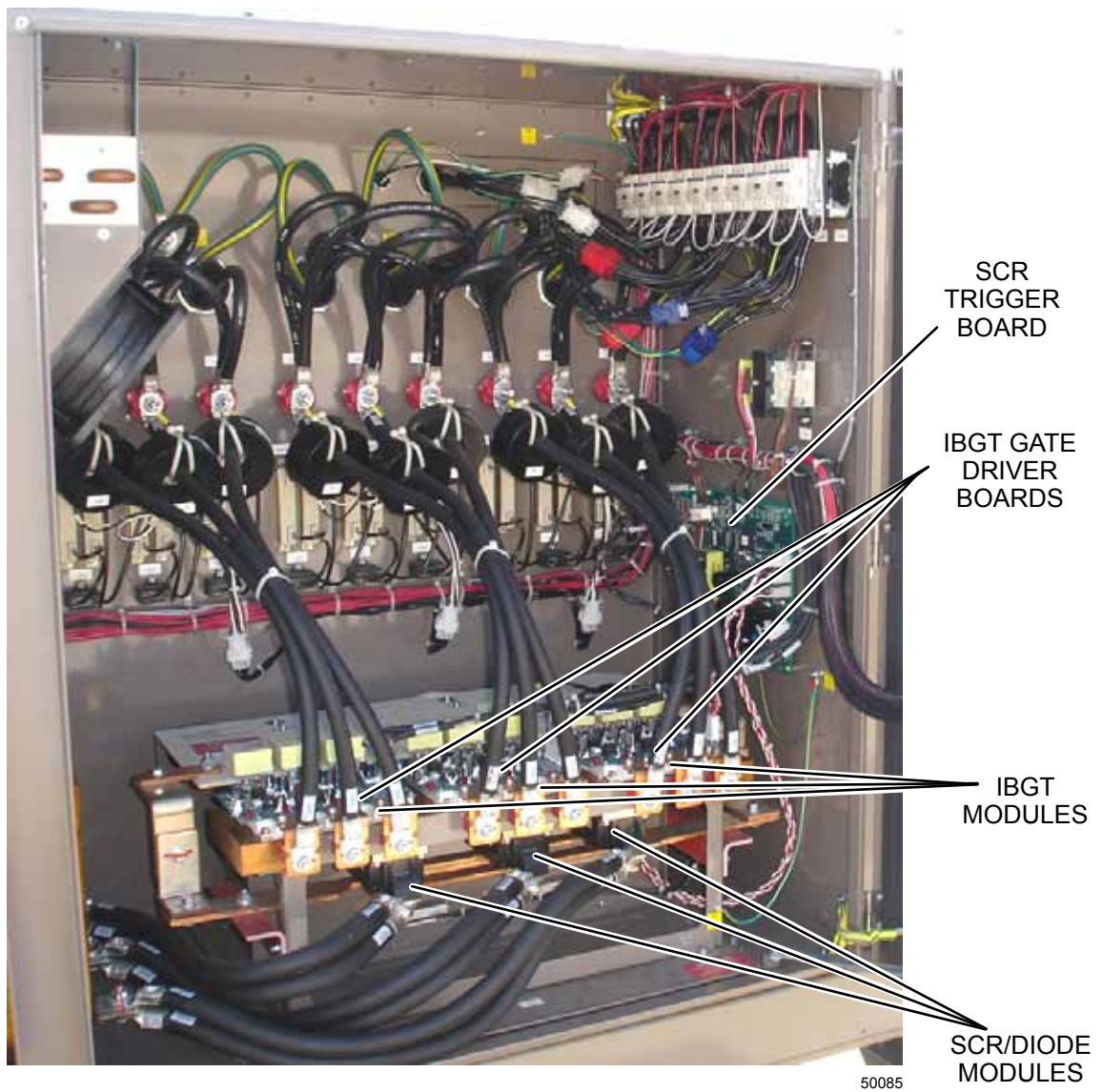


FIGURE 4 - VSD COMPONENTS, 3 COMPRESSOR



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