General Service Bulletin

RTAA/WA/UA

Compressor Modules

Order Number: **RTAA-SVB10B-EN** Date: September 2002

Introduction

The purpose of this bulletin is to advise customers of a problem associated with Compressor Modules. This bulletin is to inform the field of the failures and to describe the corrective action. Typical product applications include the RTAA/WA/UA family of chillers. The action described in this bulletin is not being taken to address a safety concern.

NOTICE:

Warnings and Cautions appear at appropriate sections throughout this literature. Read these carefully.

⚠ **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

CAUTION: Indicates a situation that may result in equipment or property-damage only accidents.

Discussion

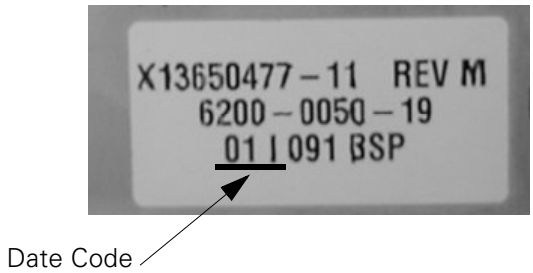
There is an issue on the RTAA/WA/UA Compressor (MCSP) Modules. It is limited to a single component (a transient spike suppression diode) failing short on the CT inputs of the module to date. These Zener diodes are labeled VR4, VR5, VR6, VR7, VR8, and VR9 on the module. None of the diodes have shown a direct short, but have a low resistance (2 kohms down to 60 ohms) instead of megohms. This is enough to reduce the current detected by the Compressor Module on the affected leg, and will cause the compressor to shut down with a "Phase Unbalance, "Severe Phase Unbalance", or "Phase Loss" diagnostic.

Units Affected

RTAA/WA/UA units built between January 1, 2001 and September 1, 2002 may have the defective component installed in the compressor modules.

The affected modules will have a date between 01 C### and 02 H###. The date code is on a white sticker on top of the module. Refer to the figure below.

Figure 1: Date Code



Module Checkout Procedure

To perform the following test, you will need to use a digital voltmeter with a diode test function.

With the current transformer MTA connector disconnected (J5) and the power off to the Unit, perform a diode test across the corresponding pair of current transformer input pins on the Compressor (header J5). The meter should read from 1.0 to 1.5 volts for each current transformer input. Repeat using the opposite polarity. The same reading should result. Extreme errors suggest a defective Compressor module.

Repair Procedure

Repairing modules in the field, is not generally recommended. However, the offending component is a large leaded component that is easy to replace. There are six of them on the module (labeled VR4 to VR9). The module can be replaced or repaired. It is strongly recommend that the module be replaced. Repair the module only as a last resort. Use **ONE** of the following options to repair the chiller.

Option 1 - Replace Module - Recommended

⚠ WARNING

Hazardous Voltage!

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

1. Turn Chiller off.
2. Remove power from chiller.
3. Replace module.

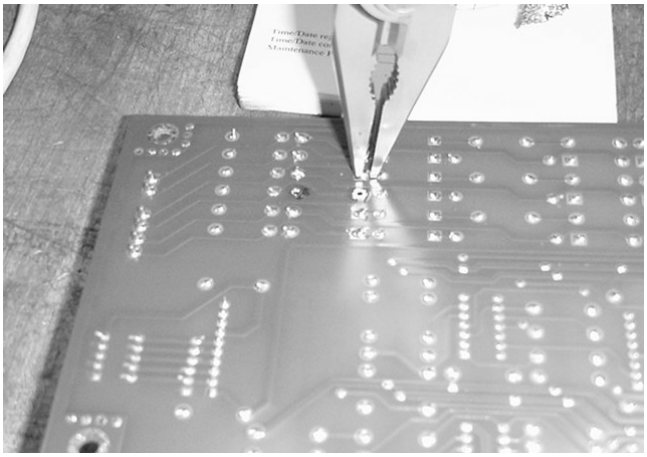
Option 2- Zener Diode Replacement Procedure - Last Resort

There are two recommended methods that can be used in the following procedure for removing suspect zener diodes. Material needed: Pencil tip solder iron, solder needle nose pliers, copper solder braid and/or solder sucker tool.

Method1:

1. Use needle nose pliers to straighten leads. Refer to Figure 2.

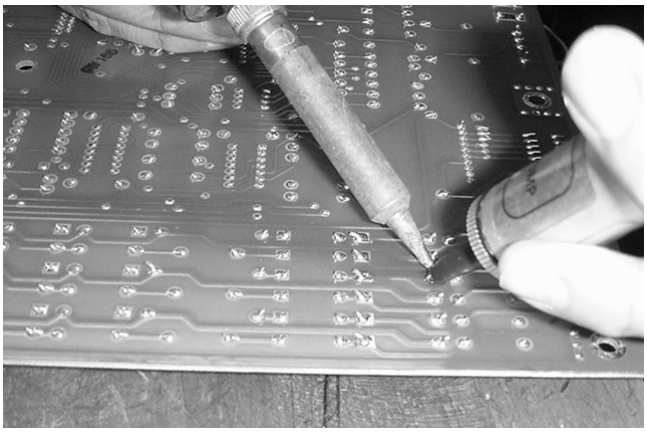
Figure 2: Leads



2. Using solder iron, heat one of the leads until solder melts. Be careful not to overheat and damage the board or traces.

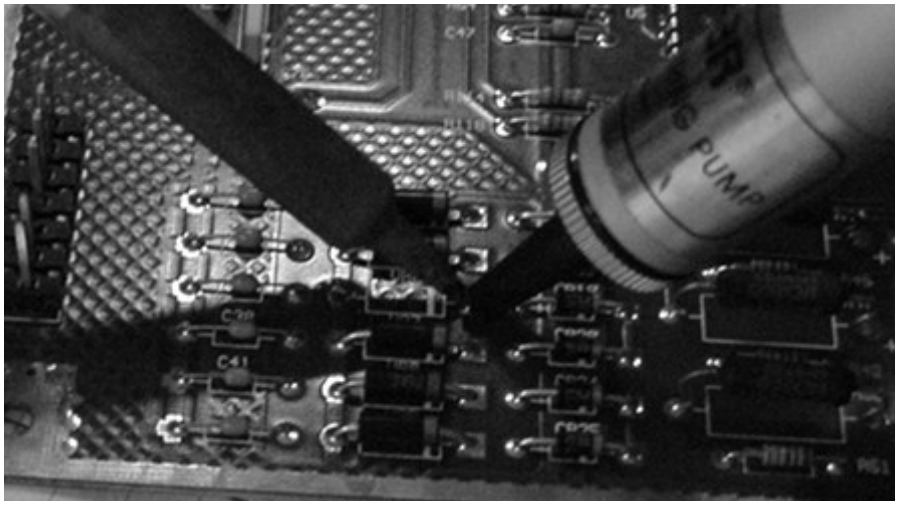
3. With solder iron on one of the diode leads, use solder sucker to draw out solder. Refer to Figure 3.

Figure 3: Solder Sucker



4. Repeat step 3 for the other diode lead.
5. Repeat steps 3 & 4 on other side of the board. Refer to Figure 4.

Figure 4: Solder Sucker

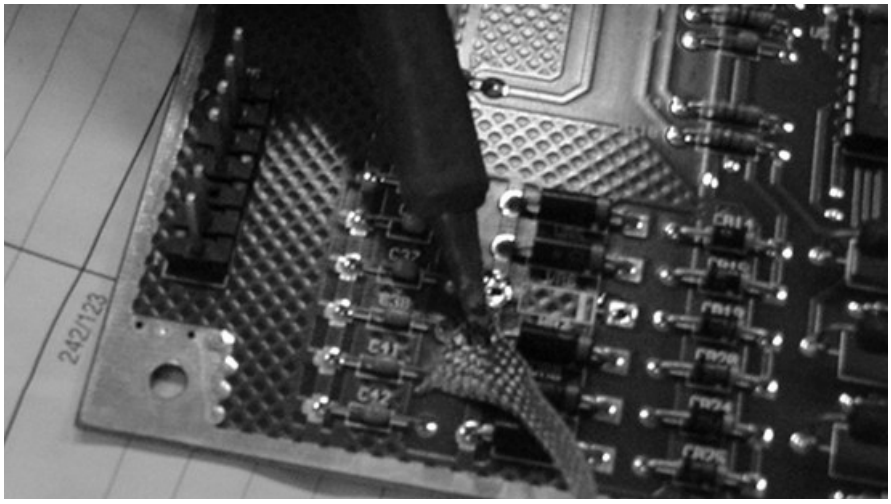


6. Remove diode and replace (verify anode and cathode are installed correctly) with new diode.
7. Solder new diode and trim excess leads.
8. Clean area soldered with alcohol.

Method 2:

1. Use needle nose pliers to straighten leads. Refer to Figure 2.
2. With copper solder braid covering one of the leads, heat the lead until the solder braid absorbs the melted solder. Refer to Figure 5.

Figure 5: Copper Solder Braid



3. Repeat step 2 for other diode lead.
4. Repeat steps 2 & 3 on the other side of the board.
5. Remove diode and replace (verify anode and cathode are installed correctly) with new diode.
6. Solder new diode and trim excess leads.
7. Clean area soldered with alcohol.

Parts Ordering Information

Use the following table to review the parts involved in this Service Bulletin.

Description	Part Number
Compressor Module 130-400 Ton Units	MOD01057
Compressor Module 70-125 Ton Units	MOD01200
OR	
Zener Diode	Newark Part number 08F3163*
* Do not substitute diode. Use Newark diode **only**.	

Obtain the modules from your local Trane Parts Center. Purchase Zener Diode locally.

Material Disposition

Dispose of all defective parts in the field.

Product Changes

All units built after September 1, 2002 have defect free components installed in the compressor modules.

Questions

Contact the Product Technical Service department in Pueblo, Colorado with questions regarding this Service Bulletin. They can be reached at techservice-pueblo@trane.com.

Literature Order Number	RTAA-SVB10B-EN
File Number	SV-RF-RTAA-SVB10B-EN-0802
Supersedes	RTAA-SVB10A-EN
Stocking Location	Electronic Only

Trane
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