

# General Service Bulletin

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## ReliaTel

### Control Upgrades

**TSC, THC, YSC, YHC, WSC036A – 120A**

**TC\*, YC\*, WC\*150 - 301**

**ORDER No:** RT-SVB21A-EN

DATE: February 7, 2005

### Introduction

The purpose of this bulletin is to update several issues associated with the ReliaTel control modules. Unit models affected are 3 through 25 ton, TSC, THC, YSC, YHC, WSC, YCD, YCH, TCD, TCH, WCD and WCH.

Units affected by this bulletin are serial numbers starting with 301 through 525 for 3 through 10 ton products; and serial numbers starting with 317 through 525 for 12 ½ through 25 ton products.

### Discussion

There have been several problems arise with the control of ReliaTel units due to both hardware and software. Depending on how the unit is applied, the unit may or may not perform properly. The following is an update of symptoms that will help identify problems associated with the ReliaTel controls and solutions.

# **WARNING**

## **Hazardous Voltage w/Capacitors!**

**Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.**

**Note:** For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN or *PROD-SVB06A-FR*

The version number of a module is used to identify a specific software release. The version number for the RTRM, LCI or TCI can be identified from a label, attached to the top of the microprocessor. On the TCI module, the daughter-board must be removed to see the label on the microprocessor chip. For the LCI module, the label is located on the U2 microprocessor chip. The version number for the economizer ECA module is located inside the module on the printed circuit board, and will require the back cover to be removed to identify. All modules discussed in this bulletin, except the ECA module, are located in the main control panel of the unit. The ECA module is mounted on the economizer actuator motor, and is located in the return compartment on the end of the unit.

The information contained in this bulletin has been categorized to help identify area of concern.

- 1.0** – General Operation
- 2.0** – Economizer
- 3.0** – Discharge Air Sensing
- 4.0** – ICS Communications

### **1.0 – General Operation**

**1.1) Symptom:** Compressors will not turn on in the test mode. This is isolated to the RTRM module, version 5.0 only, and affects only units that do not have a zone sensor connected, such as a unit with a conventional thermostat, or a unit connected to a Varitrac CCP panel.

**Solution:** With the unit power turned off, install a jumper across J6 -1 & 2 of the RTRM. When power is reapplied, the compressor test function will operate properly. Once the test is complete, the jumper must be removed. Each time the test function is initiated, power must be shut off and the jumper reapplied.

**1.2) Symptom:** In the auto test mode, the test does not terminate at the end of the last step; instead, it resets and starts the test mode again. The unit must be powered off and back on to terminate the test.

**Solution:** Remove and replace RTRM module.

**1.3) Symptom:** Rooftop packaged units with ReliaTel Controls, with an economizer connected to a CCP unit may run the compressor(s) when the unit should just be economizing. This may not be readily noticed unless the compressors are running at lower outside air temperatures. This is more likely to occur in areas where there are higher demands for economizing.

Solution: Remove and replace RTRM module.

**1.4) Symptom:** Rooftop packaged units with ReliaTel Controls being controlled with a binary input or conventional thermostat - With immediate transition from cooling to heat, the unit may experience a situation where the cooling locks on. The unit must be actively cooling for this to happen. EMS systems or thermostats where there is very little deadband are suspect for causing this to happen.

Solution: Remove and replace RTRM module.

**1.5) Symptom:** Rooftop packaged units with ReliaTel Controls with Reheat being controlled by a zone sensor - If during a dehumidification sequence, there is a call for cooling and both compressors come on (one compressor on single compressor units), the dehumidification function is terminated properly to allow the unit to function in the cooling mode. However, if the same scenario is repeated again, the unit will not go into the cooling mode until the call for dehumidification has been satisfied. This is more likely to happen in hot humid environments.

Solution: Remove and replace RTRM module.

## **2.0 – Economizer**

**2.1) Symptom:** Economizer is enabled, but never opens 100% to allow compressors to run.

Solution: Replace ECA assembly, part number MOD01453.

## **3.0 – Discharge Air Sensing**

**3.1) Symptom:** Units connected to a Tracer Summit, Tracker, Tracer L, etc, will not display Supply Air Sensor (discharge air sensor). This cannot be fixed in Tracer or Tracker.

Solution: See symptom 4.3 for more details.

## **4.0 – ICS Communications**

**4.1) Symptom:** The Mixed Air input on the optional Motorized Economizer module is currently reported to Tracer Summit as Supply Air. The input has a limited range of 40 to 90 F. When the temperature drops below 40 F, the value reported to Tracer goes to -41 F and generates an active diagnostic "Diag: SA Temp Sensor Fail" to Tracer. When the actual temperature goes above 90 F, the

temperature reported to Tracer is 91 F regardless of how high the temperature rises.

Solution: Replace RTRM. Also, the Tracer or Tracker system should be reset to clear out all old diagnostics.

Reset instructions:

**Tracer Summit** - The first time a BCU communicates to a Precedent Rooftop it gets the unit configuration and any diagnostics. Any diagnostics or alarms that are reported during the initial communications are ignored until the associated property goes to normal and then back into alarm. This is necessary so that Summit does not alarm or get diagnostics for unit options that don't exist or aren't wired.

- To clear the false diagnostics on Tracer Summit the simplest method is to do a Clear Ram on the BCU that the Precedent Rooftop is connected to. The Clear Ram function is found on the Tracer Summit workstation under the Tools menu.

**Tracer 100 Series** - Any diagnostics or alarms that are reported during the initial communications to Tracer 100 are ignored until the associated status point goes to normal and then back into alarm. This is necessary so that Tracer does not get alarms or diagnostics for unit options that don't exist or aren't wired. To clear the false diagnostics on Tracer 100 system requires you to remove the UCM assignment for the Precedent Unit, wait 10 minutes and then reassign it. The procedure to do this is as follows:

Step 1 Beginning at the Main Menu, type 8S to select the System Setup Menu

Step 2 9S to select the ICS Equipment Address Assignments

Step 3 3S to select Link C

Step 4 nS to select the desired Precedent Rooftop unit (where n= the Precedent address number)

Step 5 Record the Voyager/Precedent ICS Address i.e. 30-01

Step 6 Enter 00 and press the Enter key to clear the address

Step 7 wait 10 minutes

Step 8 Repeat steps 1 through 4

Step 9 Enter the address recorded in step 5 and press the Enter Key

Step 10 Enter 9M to return to the Main Menu

Step 11 Verify the Precedent Rooftop is communicating

**Tracker** - Any diagnostics or alarms that are reported during the initial communications to Tracker are ignored until the associated status point goes to normal and then back into alarm. This is necessary so that Tracker does not get alarms or diagnostics for unit options that don't exist or aren't wired. To clear the false diagnostics from Tracker it is necessary to clear memory on the Tracker. Clearing memory will wipe out all user-entered information such as UCM names, setpoints, schedules, holidays, etc. If the Tracker has a mode you can call it up with BMN software and save the database. After the Tracker memory has been cleared you must either manually re-program all user data, or if saved from BMN, you can use BMN to restore the database. The procedure to clear the Tracker memory can be performed from the Tracker keypad using the following keypad sequence.

- Press the Override button
- Press the Clear button
- Press the On/Off button

- Press the Copy button
- Press the Clear button

**4.2) Symptom:** Units installed on an ICS system, requiring the use of a discharge air sensor, are not able to read discharge air through the RTOM options module.

**Solution:** This is only an issue if the unit has an economizer. A 5.6K resistor, kit number KIT08318, can be added to the OAT terminals on the economizer ECA module. This will allow the true discharge air temperature to be read and reported. Units that do not have an economizer installed, but are using version 1.24 of the TCI module, will have the ability to see true discharge air temperature if the unit has the discharge air accessory installed.

Note - Units that have LonTalk communications applied, will have the ability to see both mixed air **and** supply air temperature.

**4.3) Symptom:** When the LCI communication module is installed, but no comm link established, the unit will not operate with a zone sensor.

**Solution:** Disconnect the LCI module from the RTRM; this will allow the unit to run in stand-alone mode from the zone sensor. Test mode function will still operate with the LCI connected.

## Repair Procedure



### 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.**

- ***Unless otherwise noted, all repairs are considered Fix-On-Fail.***
- Replace modules based on solution.
- Modules should only be replaced based on merit of the symptoms.
- In addition to replacing the failed module(s), if there are other units on the job that have experienced similar issues, this bulletin will allow the replacement of those modules, if they meet the following criteria:
  - Units with RTRM modules with version number of 2.9 and lower can be replaced with latest RTRM version module.
  - If the RTRM module is replaced, and the communication platform is comm4, the TCI must be version 3.1. Replace the TCI if it is not version 3.1 or newer.
  - If the RTRM module is replaced, and the communication platform is LonTalk (comm 5), the LCI must be replaced with version 2.06. Replace the LCI module if it is not version 2.06 or newer.

## Parts Ordering Information

RTRM module	– MOD01472 or latest supercede
Economizer module	– MOD01453 or latest supercede
TCI module (comm3/4)	- MOD01398 or latest supercede
LCI module (comm5)	- MOD01440 or latest supercede
5.6K resistor	- KIT08318

All modules should be replaced with the latest supercede. Since some later versions may still work in certain applications, any substitutions should be pre-approved by Clarksville tech support.

## Material Disposition

Follow instructions from the local parts center for disposition of boards.

## Questions

If you are a dealer or contractor, contact your local Trane representative. Trane and American Standard affiliated offices should contact the Product Technical Service department in Clarksville with questions regarding this Service Bulletin.

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*For more information contact your local district office or e-mail us at [comprot@trane.com](mailto:comprot@trane.com)*

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