



TRANE®

General Service Bulletin

RTHD/RTHC IT Solid State Starters

Order Number: **RTHD-SVB03A-EN**

DATE: July 2004

Pueblo Built Units Only

Introduction

The purpose of this bulletin is to advise customers of a problem associated with some RTHD/RTHC IT Solid State Starters. This bulletin is to inform the field of the intermittent failures and to describe the corrective action. If the chiller is not experiencing nuisance diagnostics, it is not necessary to adjust the starter settings. 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

RTHD/RTHC chillers built with the IT Solid State Starter Between June 2001 (U01F****) and had a potential for various nuisance diagnostic trips on ***Phase Loss, Phase Reversal, At Speed Input Open, Compressor did not Accelerate Fully, and Solid State Starter Relay Open, on UCP2/MP or Code 16 on the IT starter itself.*** These nuisance diagnostics can be eliminated with a few minor adjustments of the IT Starter and the UCP2/MP.

Starter Dip and Rotary Switch Settings

⚠ WARNING

Live Electrical Components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

When making any changes to the IT Starter, the LEDs will flash which indicates the Starter accepted the change. If the LEDs do not flash, then readjust the starter to a different position then back to the required position to ensure the Starter accepts the change as indicated by the LEDs.

1. Enable the Phase Reversal Protection on the IT Starter (leave all other dip-switches in the disable position).
2. Disable the Phase Reversal Protection in the UCP2/MP (Service Settings Menu Field Startup Group)

Note: The chiller will be protected from a Phase Reversal as long as the dip-switch on the IT Starter is enabled. Under no circumstances should the chiller be operated with both UCP2/MP and IT Starter phase reversals disabled.

3. Change dip-switch on IT Starter from “Auto Reset” to “Manual Reset”.
4. Ensure dip-switch for Ramp Start/Current Start is in the Ramp Start position.
5. Ensure Overload Trip Class dip-switch is set for 30.
6. Adjust “FLA” pot according to the nameplate RLA and Table 1 (when the exact RLA is not found in Table 1 round the RLA down to the closest setting).

*Example: With a unit nameplate RLA of 195, the FLA pot will be set at the “tic” mark just past the **B** setting.*

7. Adjust T1 to minimum position (fully CCW).
8. Adjust t_k to minimum position (fully CCW).
9. Adjust t_s to minimum position (fully CCW).

Note: On the T2 and t_r settings, the minimum position (fully CCW) may be below the lowest indicated setting, therefore it is important when setting these pots that the “offset” be taken into account. For example, if the required setting of T2 is 15, and the minimum (fully CCW) position of the pot is slightly below the “5” position on the pot, this offset will need to be accounted for. Therefore, the actual setting of 15 will be slightly below the 15 setting as shown on the pot.

10. Adjust T2 pot to 15% for all compressor sizes ensuring the “offset” is taken into account.

11. Adjust tr pot to 6 seconds for compressors C, D, & E, and 3 seconds for compressor B, again accounting for the offset.

Table 1: FLA Rotary Switch Settings

Starter type	Current Range	A	I	I	B	I	I	C	I	I	D
S801T30N3S	95-304	95	118	141	164	187	210	233	257	280	304
S801V65N3S	203-650	203	253	302	352	402	451	501	551	600	650

12. If nuisance trips continue, it may be necessary to adjust the **tr** setting slightly lower. Contact Pueblo Technical Support for assistance if needed. Ensure the starter has accepted any change made by noting that the LED's flash.
13. Place the unit back in service.

Programing Procedure

Most of the starter diagnostics can be eliminated by making the adjustments listed in the previous procedure. After making the adjustments to the starter setting if nuisance diagnostics continue to occur, follow the programing procedure below.

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1. Copy folder labeled "Specdig" from the CD over to the host computer's hard drive (c:\).(Not to Desktop)
2. Run setup file (Setup.bat) now located at C:Specdig. Take the default settings.

3. With the power turned off of the S801 starter carefully remove (peel back) the cover label of the S801 unit being careful not to tear the label. As shown below:



4. Remove the plastic cover over the programming port and insert the programming module's JTAG connector into the programming connector on the printed circuit board. The other end of the cable connects to the printer port on the host computer. It is CRITICAL that the proper orientation be observed when connecting to the programming connector or damage can occur to the host computer. The programmer should be installed so that the module is to the right of the programming port assuming that the starter is oriented with the line side (power input) at the top



5. Apply the 24vdc control power to the starter. Line power may or may not be applied during programming. Select the batch file (Inside Delta Rev C.bat) by double clicking the icon located in file location C: specdig\ . Once selected and opened an MS-Dos window will automatically open and the starter will begin programming. When the programming process is complete the final lines will read :
Finished

The entire programming process may take 2 to 8 minutes depending on the computer used for programming. The programming is complete.

6. Remove power from the starter and remove the programmer.

Verification of Download

7. Connect the RS-485 to 232-converter sub-D connector to the COM 1 port on the host computer. Connect the telephone plug to the CIM cable via the T-connector provided. Re-apply 24Vdc control power.
8. Open the file called Mttty. bat located at C:specdig\ .
9. Select the button labeled "connect" in the window. Lines of data should begin scrolling and the LED's on the communication module should begin blinking brightly. If these do not occur then the problem is likely a result of the host computer not having Com Port 1 configured properly. Another common reason for lack of communication between the starter is that the host computer may have a software package loaded that automatically captures the Com port and will not allow other packages to use the port for communications. This communication problem must be resolved prior to proceeding.
10. Once communications is established, select the button labeled "FRam". This will create another small pop-up window. In this window select "write" under the function section., enter 154 in the address section and 0 (zero) for value. Click the OK button and the data behind the small window should stop scrolling. If the data continues to scroll continue hitting the "OK" button until it does stop. There is a 1 to 2 second lag in time between hitting the ok button and the time the data will stop scrolling.
11. Close the small "FRam" window. Remove 24Vdc from the S801 for a minimum of 3 seconds and then reapply power. Once power is reapplied the information will change in the Mttty window. While watching the information scroll hit the reset button on the IT starter and verify that the information "Inside Delta - Rev C" scrolls. The software and software revision is seen whenever the unit has control power energized or when a reset signal is received. Programming of the starter is complete and the CIM module can be re-installed for normal operation. Carefully re-insert plastic cover over programming port and re-apply adhesive label.



Parts Ordering Information

Use this page to order the programming tool. This tool can not be ordered through the local parts centers. Please note there are a limited number of tools and they will be sent out on a first come first serve basis.

To order the tool complete **all** information below and fax to Eaton - Pueblo.

Fax to: (719) 948-9364 x 25
ATTN Greg Lavold and Mark MaCalla

Ship to Address: _____

Contact Name: _____

Phone Number: _____

Date Needed on Site: _____

Days needed: _____

Units to be reprogrammed (Serial Number):



Product Changes

All units built after November 1, 2003 (U03L#####) will have the proper settings programed into the IT starter

Questions

Contact the Product Technical Service department in Pueblo, Colorado with questions regarding this Service Alert. They can be reached at techservicepueblo@trane.com or 888-244-5537.



Trane
A business of American Standard Companies
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For more information contact your local district
office or e-mail us at comfort@trane.com

Literature Order Number	RTHD-SVB03A-EN
File Number	SLRF-RLC-RTHD-SVB03A-EN-0704
Supersedes	New
Stocking Location	Electronic Only

Trane has a policy of continuous product data and product improvement and reserves the right to change design and specifications without notice. Only qualified technicians should perform the installation and servicing of equipment referred to in this bulletin.