



**TRANE®**

## General Service Bulletin

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# Set-Up Guide for Cutler-Hammer S811 Solid State Starter

### *On Trane CenTraVac™ Chillers*

**ATTENTION:** 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, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

**NOTICE** – Indicates a situation that could result in equipment or property-damage only accidents.

### **SAFETY WARNING**

**Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.**

## **WARNING**

### **Personal Protective Equipment (PPE) Required!**

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- Before installing/servicing this unit, technicians **MUST** put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. **ALWAYS** refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations.
- If there is a risk of arc or flash, technicians **MUST** put on all Personal Protective Equipment (PPE) in accordance with NFPA70E or other country-specific requirements for arc/flash protection **PRIOR** to servicing the unit.

Failure to follow recommendations could result in death or serious injury.

## **Introduction**

Beginning in August of 2009, Trane-supplied Eaton/Cutler-Hammer Solid State Starters provided with CenTraVac chillers are equipped with Eaton's S811 Intelligent Technologies starter.

The T801 is no longer used.

## **Discussion**

## **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.

This bulletin provides information needed for the proper setup and operation of the S811 when applied with Trane CenTraVac chillers.

**Important:** Ensure that a jumper is present between terminals "+" and "3" on the S811 control terminal block. The S811 will not operate if this jumper is not installed. Refer to [Figure 1, p. 5](#) for a typical S811 wiring diagram.

**Note:** If replacing an existing T801 or S811 which has a fan kit installed, remove the fan and reinstall it onto the new S811 in the same manner. It is recommended that the S811 always be operated with fans installed.

Prior to initiating a start command for the unit, the S811 requires several parameter values and/or conditions to be entered into memory. Only 24 Vdc control power is required to enter parameter values into the S811. Use the following procedure to set parameter values.

## **Parameter Entry Procedure**

1. Provide 24 Vdc power to the respective "+" and "-" terminals of the S811.  
After the unit initialization period is completed (approximately 5 seconds), the Display Mode screen, showing Line Current values, appears on the Digital Interface Module (DIM).
2. Press the ESC key once to move to the Parameter Edit mode.  
The first menu displayed will be the Monitoring menu.

3. Press the PREV or NEXT keys to navigate through the Parameter Edit menus.
4. When the desired Parameter menu is displayed, press the ENTER key to move to the Parameter(s) in the selected menu group.
5. Press the PREV or NEXT keys to navigate through the Parameter(s).
6. When the desired Parameter is displayed, press the EDIT key to move to the value edit mode. When in this mode, the parameter and text will be highlighted.
  - a. Pressing the DEC or INC keys to change the parameter values.
  - b. Parameter value entries are categorized by the following:
    - i. Value selection options with options of "0", "1", "2", etc.
    - ii. Value selections that toggle between "0" and "1" (Disable or Enable).
    - iii. Value selections that enter a numerical value (i.e., voltage, etc).
7. Store the value into memory by pressing the SAVE key.
 

**Note:** Exit any menu without storing values by pressing the ESC key.

When the SAVE key is pressed, the value is stored and the display shows the stored parameter value.
8. Press the PREV or NEXT keys to move to other parameters.
9. When Parameter entry is complete, press the ESC key several times to exit back to the Display Mode screen.

It is recommended that the parameters in the S811 be set to the values shown in [Table 1](#).

**Table 1. Trane S811 Parameter value entry table**

#	Parameter	Display	Value
<i>Soft Start Config—Menu 3</i>			
1	Start Method	Voltage Ramp	0
2	Soft Start Time	Seconds	20
3	Initial Torque	%	35
4	Pump Stop Time	Seconds	0
5	Soft Stop Time	Seconds	0
6	Kick Start Time	Seconds	0
7	Kick Start Torq	%	0
8	Start Control	Level	1
9	Reset Mode	Auto	1
10	Relay 1 Config	Bypass	2
11	Relay 2 Config	Not Faulted	1

**Note:** For all other S811 parameters, use default values unless instructed otherwise by Trane Technical Support.

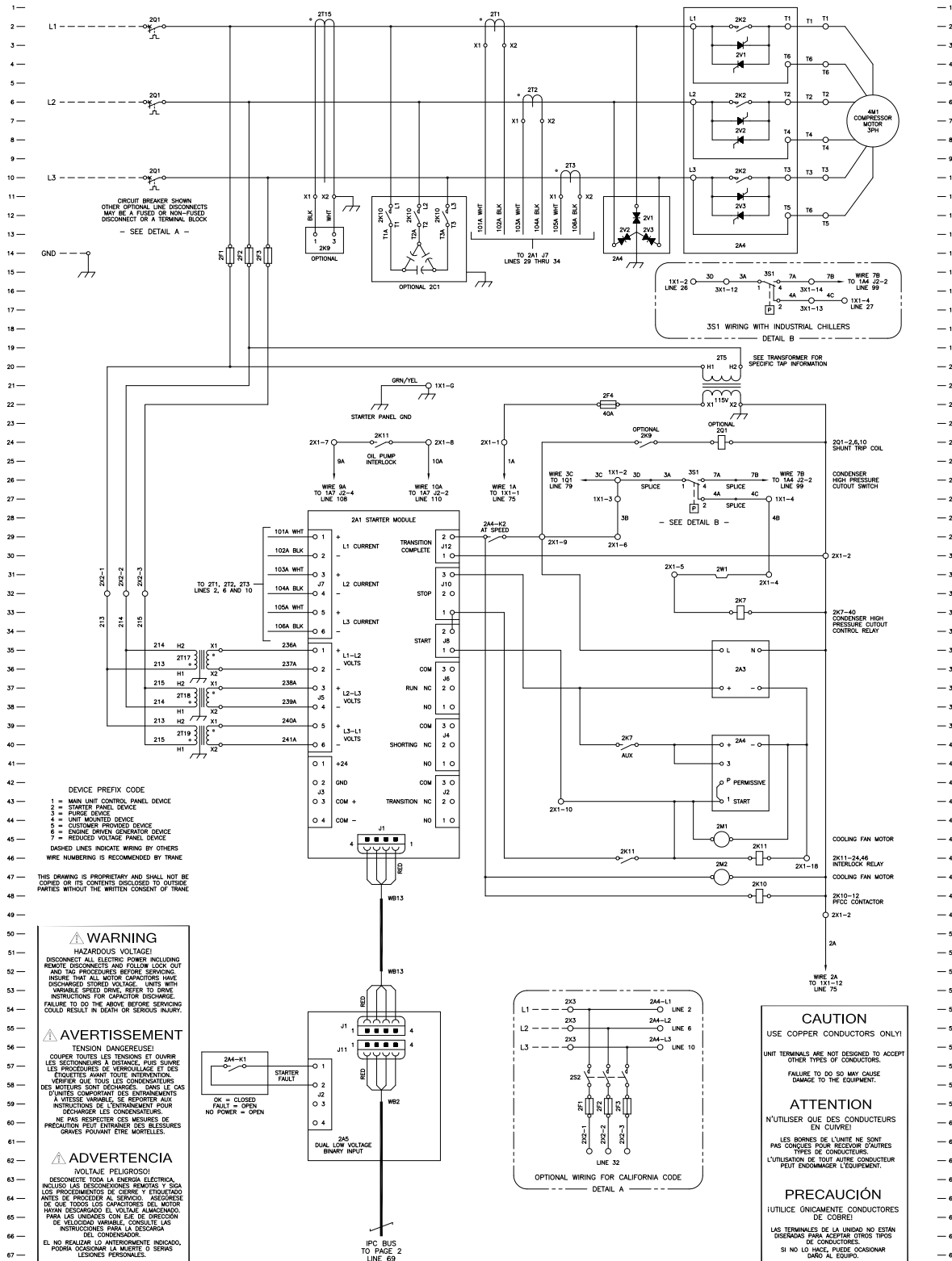
**Table 1. Trane S811 Parameter value entry table (continued)**

#	Parameter	Display	Value
<b>Overload Config—Menu 4</b>			
1	Overld Trip FLA	Amps	233A 311A 415A 526A 623A 727A 866A 1125A 1247A 1472A 623A 727A 866A
			S811R13N3D S811T18N3D S811T24N3D S811T30N3D S811V36N3D S811V42N3D S811V50N3D S811V65N3D S811V72N3D S811V85N3D S811U36N3D S811U42N3D S811U50N3D
2	Overld Trip Class		30
3	Overload Fault		Enabled
4	Ovld On Start		Enabled
<b>Protection Setup—Menu 5</b>			
1	Phase Sequence	ACB	1
2	Phase Rev fault		Enabled
3	Motor Rated Volt	Volts	See starter model number for voltage
4	Low Volt Trip		Enabled
5	Low Volt Level	%	30
6	Low Volt Trip Dly	Seconds	3
7	Hi Volt Trip		Enabled
8	Hi Volt Level	%	120
9	Hi Volt Trip Dly	Seconds	3
10	V Imbal Trip Lev	%	30
11	V Imbal Trip Dly	Seconds	5
12	Phase Loss Fault		Enabled
13	Phase Loss % Trip	%	40
14	Phase Loss Trip Dly	Seconds	0.5
15	Low I Trip % FLA	%	1
16	Phase Imb Fault		Enabled
17	I Imbal Trip Lev	%	50
18	I Imbal Trip Dly	Seconds	5
<b>LCD DIM Setup—Menu 8</b>			
23	Clear Fault Que	Clear Fault Que	SEND
<b>Note:</b> For all other S811 parameters, use default values unless instructed otherwise by Trane Technical Support.			

**Notes:**

- The eight communication dip switches below the DIM (Labeled 1 – 32, S1, S2) should be positioned in the OFF position.
- The Channel Status LEDs (1 and 0) on the S811 are not used in the Trane system.
- A RED Status LED on the S811 indicates that there is an active fault in the system. The starter will not recognize a START command unless the Status LED is GREEN.
- The SEND command in the Clear Fault Cue only clears the fault history memory; it does not attempt to reset a fault.

Figure 1. Typical schematic wiring diagram - Simplex or Duplex; Unit-mounted low voltage S811 solid state starter



## Questions

Contact the CenTraVac Support Team with questions regarding this general service bulletin. To contact them, send a message to [techservice@trane.com](mailto:techservice@trane.com).



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