



## SERVICE BULLETIN

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**Title:** 19EF/EX/FA Version 3 Software  
**Models Affected:** 19EF/EX/FA

**Number:** C9612  
**Date:** 5/6/96  
**Supersedes:**  
**Date:**

**Purpose:**

To inform the field of the introduction of Version 3 19EF/EX/FA PSIO Software.

**File:** Controls - Wiring

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## Procedure:

A few of these changes are essential, therefore all affected chillers should be upgraded to Version 3.

## Improvements:

### 1. Oil Sump Temperature Control:

Eliminate the 19XL oil heat algorithm which required a high oil heat cycle after a 5 minute power outage from PIC Control logic. When a power failure to the PSIO module has occurred for more than 3 hours, the compressor guide vane opening will be slowed to a value of 2 deg. F (1.1 deg. C) per minute with temperature ramp loading. Prior to start, the oil sump temperature is compared with evaporator refrigerant temperature. If the difference between these two temperatures is 50 F (27.8 C) or more start-up continues.

### 2. Bearing Temperature Alert:

Changed bearing alert range in SERVICE1 table as follows:

OLD RANGE		NEW RANGE		DEFAULT SETTING			
				OLD		NEW	
F	C	F	C	F	C	F	C
165-185	74-85	165-210	74-99	175	79.4	210	99

### 3. Condenser Refrigerant Pressure Alarm:

Changed condenser refrigerant pressure alarm as follows:

OLD SETTING	NEW SETTING
260 psig (1793 kPa)	215 psig (1482 kPa)

### 4. Compressor Starts Transfer:

Eliminate the automatic transfer of compressor starts and operating hours when new module is installed. After replacing the PSIO and following the Operations and Maintenance instructions through the uploading procedure, manually enter the Total Compressor Starts and Compressor Ontime hours in the STATUS01 screen and continue to reconfigure new module.

### 5. Improved Metric Conversion:

Improved accuracy of metric conversion for Reset Temperatures in Equipment Configuration table and temperature deltas in Equipment Service.

### 6. Shunt Trip Relay Test:

Added shunt trip relay test to the Controls Test.

#### 7. Load-based Recycle Shutdown Trigger:

Added a second recycle condition for both LCW and ECW control under which recycle shutdown would be triggered when: (a) (ECW minus LCW) is less than a configurable value, Recycle Shutdown Delta T., and (b) the controlled temperature (LCW or ECW) is below the control point. Added a SERVICE1 Screen entry Recycle Shutdown Delta T (0.5 - 4.0 deg. F (0.28 - 2.2 deg C)) with a default of 1.0 F (.56 C). This condition does not apply in the ice-build mode. The original recycle shutdown of 5 deg. below the control point has not changed.

#### 8. Software Voltage Calibration:

Added capabilities to calibrate motor voltage readings with the use of STATUS01 screen inputs (similar to motor current calibration). Initial adjustment is performed with the voltage trim potentiometer in the starter, then final fine adjustment with PIC Controls. Calibration is performed by entering Line Voltage Percent from 90 to 100%. This will permit elimination of the voltage trim potentiometer in the starter in the future.

#### 9. Shunt Trip Relay Energization:

The shunt trip relay will be energized when the evaporator refrigerant pressure is less than zero. The shunt trip relay will also be energized during pumpdown mode in Controls Test. This feature will prevent the accidental start of the compressor motor in a vacuum.