Carrier
A United Technologies Company

REPLACEMENT COMPONENTS DIVISION

SERVICE BULLETIN

SUBJECT: 23XL Version 15 Software	**NUMBER:** C9721 **DATE:** 7-8-97 **SUPERSEDES:** **DATE:**
MODELS AFFECTED: 23XL Chillers	**PAGE:** 1 **OF:** 4

PURPOSE:

To inform the field of the introduction of Version 15 PIC control software for 23XL chillers. These changes are improvements to existing software. Changing to this version of software is not required.

IMPROVEMENTS:

1.) Motor Amps - LID Default Screen:

Changed the description field for motor amps on the default screen from 'MTR AMPS' to 'AMPS %' for clarification. The value displayed will continue to reflect the percentage of full load amps configured in the SERVICE1 screen in EQUIPMENT SERVICE.

2.) PUMPDOWN/LOCKOUT:

Corrected pumpdown logic such that pumpdown is not canceled when pumpdown screen is exited, either manually or by the LID timing out and reverting back to the default screen (around 15 minutes).

3.) Wrong Refrigerant Type:

FAILURE TO START: CHECK REFRIGERANT TYPE alarm has been eliminated when machine is configured for BRINE as the chilled water medium. This is intended to avoid nuisance alarms caused by an abrupt drop in condensing temperature during start-up.

4.) FAILURE TO START: MOTOR WIRING INCORRECT (phase reversal):

Changed phase reversal detection threshold from 5 psi to 10 psi (34.5 KPa to 68.9 KPa). Immediately after the compressor start relay (1CR) is energized, the condenser pressure is monitored. An alarm will occur when the condenser pressure during start-up drops by more than this threshold value. This change will eliminate inappropriate nuisance alarms.

5.) System Alarm / Alert:

Added Alarm / Alert status to the end of MAINT02 table under Control Algorithm Status in SERVICE screen. This line indicates if any alarms or alerts are active. Values are: 0=None, 1=Alert, 2=Alarm.

6.) Soft Stop Termination:

Soft Stop (configured in SERVICE1 screen under EQUIPMENT SERVICE) can now be terminated by a second depression of the STOP button. This feature defeats the configured soft stop which drives the slide valve closed until the motor amps drop below the configured value before turning the compressor motor off. When a second depression of the STOP button occurs during shutdown, the compressor motor will be de-energized immediately.

7.) Prestart:

Added Prestart to Run Status displayed in STATUS01 screen. This conforms to the Prestart failures displayed in LID default screen.

8.) Metric Conversion, TEMP Pulldown Deg/Min:

Clarified units in delta degrees for TEMP Pulldown Deg/Min in CONFIG screen under EQUIPMENT CONFIGURATION (SERVICE). Default values 3^ F (1.7^ C) ('^' symbol indicates delta units).

9.) Corrected Typographical Error in Controls Test:

Corrected table spelling in Controls Test for PSIO Thermistors (Entering Chilled Water). Previously displayed 'qtering Chilled Water' in Version 14 software.

10.) Spare Sensor Alert:

Corrected designation for spare sensor alerts in SERVICE2 screen under EQUIPMENT SERVICE. Original configuration of SPARE ALERT ENABLE (Low=1, High=2) is changed to (High=1, Low=2). Software has always interpreted 1 as High and 2 as Low.

11.) Spare Sensor Alert Messages:

Changed the LID secondary messages for Spare Sensors from 'Sensor Fault' to 'Spare Sensor Alert'. Also modified the alert messages for Spare Sensors from 'Sensor Fault: Check xxxxx Sensor' to 'Spare Sensor X Temp: (VALUE) exceeded limit of (LIMIT)'.

12.) Lead / Lag / Standby:

Alterations have been made for three chillers connected in a CCN system and configured for Lead/Lag/Standby in LEADLAG screen under EQUIPMENT CONFIGURATION. When the STANDBY chiller is transitioned from OFF to CCN (by pressing CCN button) the machine incorrectly started under its own schedule immediately. The lead chiller now applies a forced stop on the standby chiller for up to 45 seconds to allow a lead chiller to assert control.

13.) Condenser Freeze Prevention:

Corrected condenser freeze protection logic. In the case of condenser freeze protection alert (caused by low entering condenser water temperature) if the chiller was started in this state the alarm could not be cleared and the condenser refrigerant temperature display would flash. Now the alarm state will clear when temperature conditions are satisfied.

14.) Temperature Reset with Brine Application:

When configured for BRINE as the chilled water medium (SERVICE1 screen in EQUIPMENT SERVICE) and using 4-20ma temperature reset, the minimum control point for Entering Chilled Water Control was clamped to 20° F (-6.7° C). The lower limits for temperature reset now match configurable limits for LCHWT control: 15° F (-9.4° C) with water as condenser fluid and 7° F (-13.9° C) with brine as condenser fluid; for ECHWT (-6.7° C) with water as condenser fluid and 12° F (-11.1° C) with brine as condenser fluid.

15.) Icebuild Termination:

Made correction such that when Icebuild is terminated (Icebuild schedule is complete) and Icebuild Recycle option is not enabled (CONFIG screen in EQUIPMENT CONFIGURATION), chiller will revert to normal temperature control.

16.) Voltage Calibration:

The voltage trim potentiometer has been removed on all unit mounted starters as of June, 1996. This pot was used to adjust the voltage input on terminals 23 and 24 (plug J3 on the SMM) to 24 VAC at rated line voltage. Voltage calibration is now performed by setting Line Voltage Percent from 90 to 110 percent in the STATUS01 screen.