UNITED TECHNOLOGIES CARRIER

SERVICE BULLETIN

Title: VERSION 14 SOFTWARE FOR 23XL

Number: C9604
Date: 1/25/96

Models Affected: 23XL

Supersedes:
Date:

PURPOSE:

To inform the field of the introduction of version 14 23XL PSIO Software and PSIO II (hardware improvement). These changes are improvements, and should not be considered warranty claims.

REQUIREMENT:

When using 23XL PSIO module P/N 23XL04000101 with software 14 or higher to replace an earlier version of software, wiring modifications as described in C9605 bulletin MUST be performed. The new 23XL PSIO II kit P/N 23XL660018 will replace the above current PSIO. The kit will include 99TA550150 Rev A Installation Instructions, 23XL05005801 Decal and 23XL04007001 PSIO II with software version 14 or higher.

IMPROVEMENTS:

Software Logic Changes.

1. "High amps at Recycle Shutdown" message has been eliminated. primarily to address case of oil loss reset.

2. Changed Failure to Start Message from "Low Oil Pressure" to "No Oil Pressure"

3. Dirty Oil Filter Alert.

   The upper limit (LID-configurable) for generating a dirty oil filter alert has been increased to 90 psi in the Service 01 Screen. Maint 02 display screen will show current oil filter pressure drop.

4. Condenser pressure override.

   The upper limit (LID-configurable) of condenser pressure override is changed from (restored to) 245 to 260 psig in the Service 01 Screen. Maint 02 display screen will show current pressures.

FILE: Controls

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MAIL KEYS: 2.40A, 2.40M, 2.40I, 2.40J, 2.40G, 2.40, 5.25G, 2.33A, 2.33B, 2.33D

5. Improved Conversions of Metric Increments. For Reset Temperatures and Service Delta T.

6. Condensing with Brine.

Logic is added to allow a customer to select brine as condenser coolant and, when this is selected, to operate at lower chilled brine conditions. The new software will permit a customer who is condensing with brine to operate down to the following new limits: minimum leaving brine setpoint = 7F {-13.9C} (still 15F {-9.4C} when condensing with water).

* minimum entering brine temperature and ice building setpoint = 12F{-11.1C} (still 20F {-6.7C} condensing with water.

* minimum cooler refrigerant when saturation temperature ("brine refrigerant trip point") = 0F {-17.8C} (still 8F {-13.3C} condensing with water). Only in the case of brine in the condenser loop will the customer still be able to configure the "condenser freeze point" via LID (between 0F {-17.8C} and 34F {1.1C}) in order to control condenser pump operation during shutdownt or to control appearance of condenser freeze alert message. In the case of of water in the condenser loop, this point will be fixed at 34F {1.1C}.

7. Oil Level Switch Input Change.

The oil level switch input which is now configured for resistance is read across terminals J7-20 & J7-21. Previously it was voltage input J7-19 & J7-20. See bulletin C9605 for wiring change.

8. Load-based Recycle Shutdown Trigger.

Added a 2nd recycle condition for both LCW and ECW control under which recycle shutdown would be triggered: when (a) {EChWT-LChWT} is less than a configurable value, and (b) the controlling temperature (LChWT or EChWT) is below control point. This does not apply to ice-build mode. On Service 01 Screen, the Recycle Shutdown Delta T can be adjusted between (0.5 - 4.0F {0.28 - 2.2C} with a default of 1.0 F {.56C}). The original recycle shutdown of 5F {2.8C} degrees below the control point has not changed.

9. Shunt Trip Relay Test.

   Added shunt trip relay test to the Controls Test.

10. Limited Slide Valve Unloading to minimized hunting at FLA. When the following conditions call for slide valve unloading, a slide valve count of 1 (1/2 second unload solenoid energized and 5 seconds deernergized) will be used until the override is terminated:

    (a) demand limit operation
    (b) high condenser pressure
    (c) refrigerant low temperature override operation.
    (d) high temperature override operation.

11. Motor Temperature Prestart condition.

    Motor temperature must be below 130F {54.4C} to permit startup. Previously was equal to motor temperature override less 10F {5.5C}.

12. Software Voltage Calibration.

    Added capabilities to calibrate motor voltage readings via STATUS01 screen inputs (similar to motor current calibration). This will permit elimination of the voltage trim potentiometer in the starter.

13. Compressor Starts transfer.

    Eliminate the automatic transfer of compressor starts and operation hours when the new module is uploaded. After replacing the PSIO enter manually the Total Compressor Starts and Compressor Ontime hrs in the Status 01 screen.

14. Unwanted pump cycling eliminated.

    Eliminated pump cycling during pumpdown and when cooler pressure transducer is disconnected or out of range.