UNITED TECHNOLOGIES CARRIER

SERVICE BULLETIN

Title: 32MP CONTROL IMPROVEMENTS (ESP II)

Number: C9007
Date: 5/1/90
Supersedes: NEW
Date:

Models Affected: ALL WITH 32MP CONTROLS

Purpose:

The purpose of this bulletin is inform the field of improvements in the 32MP control logic on chillers shipped after 3/1/90 and to provide the instructions for upgrading older controls if desired.

Background:

An extensive software revision program has been completed which addresses three general areas. First, the 32MP controls were corrected to perform as specified. Secondly, logic revisions were made which will help the control improve chiller performance, especially on 19DR's with dual DM compressors. Thirdly, additional features were programmed which can be sold as a control upgrade. The major items in these three areas are:

1. Auto start after a short power interruption, corrections of safety logic and proper pre- and post-lube for 19C/CB's in control retrofit applications.

2. Specific sensor out of range definitions (64-x), a more versatile diffuser wall algorithm, precise tracking of dual compressor amps and walls, and a lag shutoff correction factor.

3. Standby operation (lag chiller or compressor will continue to run or will start if there is a lead failure), CCN compatibility, two more spare sensors to read customer selected parameters by ESP and Datalogger.

FILING INSTRUCTIONS: CONTROLS - WIRING

MAIL KEYS: 2.23R, 2.33B, 2.33D, 2.40B, 2.44, 2.45, 2.46A, 2.46B, 2.53, 5.14A, and 5.14B

Prepared By: Alan M. Johnson
Alan M. Johnson

Approved By: Larry Sturzenberger
Larry Sturzenberger

Material Required:

Single Compressor with LEAD/LAG & ESP II style ESP Assembly ('88 and later **)

MX PC Board *	32MP400874 (HK35EZ011)
EPROM Kit	32MP660012
Display Code Label	19EB516-1153

Single Compressor with LEAD/LAG & ESP I style ESP Assembly ('87 and earlier **)

MX PC Board *	32MP400874 (HK35EZ011)
ESP Back PC Board	HK35EZ012-1
EPROM Kit	32MP660012
Display Code Label	19EB516-1153

Single Compressor without LEAD/LAG (type 1 corrections)

EPROM Kit	32MP660014
Display Code Label	19EB516-1153

17/19DR Dual Compressor chillers with no ESP

MX Board	32MP400874 (HK35EZ011)
EPROM Kit	32MP660013
Display Code Label	19DR516-1083

17/19DR Dual Compressor chiller with ESP II style ESP Panel ('88 and later **)

EPROM Kit	32MP660013
Display Code Label	19DR516-1083

17/19DR Dual Compressor chiller with ESP I style ESP Panel ('87 and earlier **)

ESP Back PC Board	HK35EZ012-1
EPROM Kit	32MP660013
Display Code Label	19DR516-1083

* The dual compressor memory expansion board (MX) is used for ESP II on both single and dual compressor chillers. It has a jumper (W1) which can be easily soldered in for upgrading single chillers to ESP II.

** ESP II Panel identification - Only the back printed circuit board on the assembly is different. ESP II boards have all the components in a vertical orientation and they don't have an option header.

NEW OR REVISED SOFTWARE KITS WITH 199C LOGIC UPGRADES - CALLED "ESP II" STYLE

		ESP I		ESP II	
		Single Comp.	Dual Comp.	Single Comp.	Dual Comp.
EPROM Kit		32MP660014	32MP660011	32MP660012	32MP660013
Includes:	Basic	HK98EZ100	NOT	HK98EZ100	HK98EZ130
	M/X	HK98EZ016	AVAILABLE	HK98EZ110	HK98EZ140
	ESP	HK98EZ023	(INVALID)	HK98EZ120	HK98EZ150
	Opt-Pak	32MP400023		N/A	N/A

Installation Procedure:

1. Turn off control power.

2. Replace the ESP back PC board if it isn't already the ESP II style.

3. Modify or add an MX PC board if required. All dual compressor controls will need an MX board even if they don't have an ESP. The MX board permits the use of an EPROM with more memory which is needed even with no options.

4. Carefully replace the EPROM's with valid sets. No OPTPAK is required for options with ESP II hardware. All options are available if the customer purchases an ESP.

5. Configure the DIP switches as called for in the latest Operation & Maintenance instructions dated 1987 or later. Settings are also included in Bulletin C8806 for dual compressors and C8708 for single compressors. Configuration "by the book" will be adequate for most chillers. If any adjustments must be made, use Bulletin C8717 for guidance on the effect of changes to the diffuser width (DM), compressor selection factor (DM), impeller diameter code (DM) and motor amperage correction factor.

6. 19DM Compressors only - Refer to photos in Bulletin C8810 and to Bulletin C8716. If the basic or analog expansion board is "old style", jump out the 1K resistors either by soldering a jumper wire across the resistor or by adding a short jumper with "mini grabber" connections. Recalibrate the diffuser wall potentiometer per C8716.

7. Add the new display code label.

8. Add an "ESP II" label to the front of the ESP above the REMOTE - PANEL toggle.

9. Operate the chiller to verify proper operation.

10. Instruct the customer on the new features and display codes.