UNITED TECHNOLOGIES CARRIER

SERVICE BULLETIN

Title: 19DR 2-COMPRESSOR DIP SWITCH SETTINGS

Number: C8806
Date: 5/3/88
Supersedes: NEW
Date:

Models Affected: 19DR

PURPOSE

The purpose of this bulletin is to provide dip switch setting information for two-compressor 19DR chillers.

BACKGROUND

The 19DM diffuser wall control algorithm was revised and improved and released initially for 17/19DM/DR chillers having a single compressor. Service Bulletin C8708 provided an explanation of the changes made and a complete table of dip switch settings for a single compressor.

DIP SWITCH SETTINGS

For a standard 19DR with basic prom No. HK98EZ035 and for a 19DR with ESP II (basic prom No. HK98EZ130, memory expansion prom No. HK98EZ140 and ESP prom No. HK98EZ150), new dip switch settings are required. TABLE I shows all possible dip switch settings. TABLE II shows motor factors for 19DR motors.

MAIL KEYS: 2.33D, 2.40B, 2.45, and 2.53; ISBH

FILE: Controls/Wiring

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TABLE I

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	DESCRIPTION
1	1	TYPE OF MACHINE	0	NON-17/19DM
			1	17/19DM
	2	RELATIVE CAPACITY OF COMPRESSOR A	0	50 PERCENT
			1	60 PERCENT
	3	LEAVING CHILLED WATER DEADBAND	0	1 DEG F DEADBAND
			1	2 DEG F DEADBAND
	4	LEAVING CHILLED WATER PROPORTIONAL BAND	0	5 DEG F PROP BAND
			1	15 DEG F PROP BAND
	5	LINE FREQUENCY	0	60 HZ
			1	50 HZ
	6	STARTER TYPE	0	REDUCED INRUSH
			1	FULL VOLTAGE
	7	MOTOR SENSOR TYPE	0	THERMISTER
			1	THERMOSTAT
1	8	LAG TURN-OFF PERCENT	8	TABLE
6	1-2	CORRECTED AMPS	1 2	
			1 0 0	8 LATER
			0 1 0	7
			1 1 0	6
			0 0 0	5
			0 0 1	4
			1 0 1	3
			0 1 1	2
			1 1 1	1 SOONER
2	1-3	CONTROLLER ID NUMBER	1 2 3	NUMBER
			0 0 0	0
			1 0 0	1
			0 1 0	2
			1 1 0	3
			0 0 1	4
			1 0 1	5
			0 1 1	6
			1 1 1	7
	4	FAHRENHEIT/CENTIGRADE DISPLAY	0	DEG F
			1	DEG C

0 - OFF 1 - ON

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	WIDTH INCHES	OLD COMP CODE	NEW COMP CODE
2	5-8	DIFFFUSER WIDTH	5 6 7 8			
4	1-2	COMPRESSOR "A"	1 2			
			0 1 0 1 0 0	.44		
			1 1 0 1 0 0	.45		
			0 0 1 1 0 0	.46		
			1 0 1 1 0 0	.47		
			0 0 0 0 0 0	.48	42-47	
			0 1 1 1 0 0	.49		
			1 1 1 1 0 0	.50		
			0 0 0 0 1 0	.51		205,206
			1 0 0 0 1 0	.52		
			0 1 0 0 1 0	.53		
			1 1 0 0 1 0	.54		
			1 0 0 0 0 0	.55	49-54	
			0 0 1 0 1 0	.56		
			1 0 1 0 1 0	.57		225,226
			0 1 1 0 1 0	.58		
			1 1 1 0 1 0	.59		
			0 1 0 0 0 0	.60	56-61	
			0 0 1 0 0 0	.61	72-77	204,255,256
			0 0 0 1 1 0	.62		
			1 0 0 1 1 0	.63		
			0 1 0 1 1 0	.64		
			1 1 0 1 1 0	.65		224,315,316
			1 1 0 0 0 0	.66	63-68	285,286
			0 0 1 1 1 0	.67		
			1 0 1 1 0 1	.68		
			1 0 1 0 0 0	.69	79-84	
			0 1 1 1 1 0	.70		254
			1 1 1 1 1 0	.71		
			0 0 0 1 0 0	.72	B2-B7	355,356
			0 0 0 0 0 1	.73		314
			1 0 0 0 0 1	.74		284
			0 1 0 0 0 1	.75		
			0 1 1 0 0 0	.76	86-91	
			1 1 0 0 0 1	.77		405,406
			0 0 1 0 0 1	.78		
			1 0 1 0 0 1	.79		
			0 1 1 0 0 1	.80		
			1 1 1 0 0 1	.81		354
			0 0 0 1 0 1	.82		
			1 1 1 0 0 0	.83	93-98	455,456
			1 0 0 1 0 1	.84		
			0 1 0 1 0 1	.85		
			1 1 0 1 0 1	.86		
			0 0 1 1 0 1	.87		404
			1 0 1 1 0 1	.88		
			0 1 1 1 0 1	.89		
			1 1 1 1 0 1	.90		

0 - OFF 1 - ON

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	WIDTH INCHES	OLD COMP CODE	NEW COMP CODE
2	5-8	DIFFFUSER WIDTH	5 6 7 8			
4	1-2	COMPRESSOR "A"	1 2			
			1 0 0 1 0 0	.91	C2-C7	505,506
			0 0 0 0 1 1	.92		
			1 0 0 0 1 1	.93		
			0 1 0 0 1 1	.94		
			1 1 0 0 1 1	.95		
			0 0 1 0 1 1	.96		
			1 0 1 0 1 1	.97		
			0 1 1 0 1 1	.98		
			1 1 1 0 1 1	.99		
			0 0 0 1 1 1	1.0		
			1 0 0 1 1 1	1.01		
			0 1 0 1 1 1	1.02		
			1 1 0 1 1 1	1.03		
			0 0 1 1 1 1	1.04		
			1 0 1 1 1 1	1.05		
			0 1 1 1 1 1	1.06		
			1 1 1 1 1 1	1.07		

		FUNCTION	SETTINGS	DESCRIPTION
3	1	CHILLED MEDIUM	0	WATER
			1	BRINE

		FUNCTION	SETTINGS	DIA CODE	DIA MULT	OLD COMP CODE	NEW COMP CODE
3	2-5	IMPELLER DIAMETER	2 3 4 5				
		COMP "A"	1 0 1 1		1.799	NOT CURRENTLY AVAILABLE	
			0 0 0 1		1.712		
			1 0 0 1	2	1.556	42,49,56,63,B2 72,79,86,93,C2	3 DIGIT NUMBER ENDING WITH A 2
			0 0 0 0	3	1.442	43,50,57,64,B3 73,80,87,94,C3	3 DIGIT NUMBER ENDING WITH A 3
			1 0 0 0	4	1.303	44,51,58,65,B4 74,81,88,95,C4	3 DIGIT NUMBER ENDING WITH A 4
			0 1 0 0	5	1.212	45,52,59,66,B5 75,82,89,96,C5	3 DIGIT NUMBER ENDING WITH A 5
			1 1 0 0	6	1.142	46,53,60,67,B6 76,83,90,97,C6	3 DIGIT NUMBER ENDING WITH A 6
			0 0 1 0		1.056	NOT CURRENTLY AVAILABLE	
			0 0 1 1	7	1.012	47,54,61,68,B7 77,84,91,98,C7	3 DIGIT NUMBER ENDING WITH A 7
			1 0 1 0		0.975		
			0 1 1 0		0.845		
			1 1 1 0		0.756		
			0 1 0 1		0.674		
			1 1 0 1		0.601		

0 - OFF 1 - ON

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	DESCRIPTION
3	6-8	RAMP LOADING RATE	6 7 8	RATE, DEG F PER MIN
			0 0 1	0.38
			1 0 0	0.75
			0 1 0	1.13
			1 1 0	1.50
			0 0 0	2.25
			1 0 1	3.00
			0 1 1	5.25
			1 1 1	10.5
4	1-2	SEE ABOVE		

4	3-5	COMPRESSOR A MOTOR AMPS CORRECTION FACTOR	CODE	FACTOR	3 4 5
		CORRECTED AMPS > ACTUAL	1	6.4	0 1 0
			2	3.2	1 0 0
			3	0.0	0 0 0
			4	-3.2	1 1 0
			5	-6.3	0 0 1
			6	-9.5	1 0 1
			7	-12.7	0 1 1
		CORRECTED AMPS < ACTUAL	8	-15.9	1 1 1
4	6-8	COMPRESSOR B MOTOR AMPS CORRECTION FACTOR	CODE	FACTOR	6 7 8
		CORRECTED AMPS > ACTUAL	1	6.4	0 1 0
			2	3.2	1 0 0
			3	0.0	0 0 0
			4	-3.2	1 1 0
			5	-6.3	0 0 1
			6	-9.5	1 0 1
			7	-12.7	0 1 1
		CORRECTED AMPS < ACTUAL	8	-15.9	1 1 1

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	WIDTH INCHES	OLD COMP CODE	NEW COMP CODE
5	1-4	DIFFFUSER WIDTH	1 2 3 4			
6	6-7	COMPRESSOR "B"	6 7			
			0 1 0 1 0 0	.44		
			1 1 0 1 0 0	.45		
			0 0 1 1 0 0	.46		
			1 0 1 1 0 0	.47		
			0 0 0 0 0 0	.48	42-47	
			0 1 1 1 0 0	.49		
			1 1 1 1 0 0	.50		
			0 0 0 0 1 0	.51		205,206
			1 0 0 0 1 0	.52		
			0 1 0 0 1 0	.53		

0 - OFF 1 - ON

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SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	WIDTH INCHES	OLD COMP CODE	NEW COMP CODE
			1 2 3 4			
5	1-4	DIFFFUSER WIDTH				
6	6-7	COMPRESSOR "B"	6 7			
			1 1 0 0 1 0	.54		
			1 0 0 0 0 0	.55	49-54	
			0 0 1 0 1 0	.56		
			1 0 1 0 1 0	.57		225,226
			0 1 1 0 1 0	.58		
			1 1 1 0 1 0	.59		
			0 1 0 0 0 0	.60	56-61	
			0 0 1 0 0 0	.61	72-77	204,255,256
			0 0 0 1 1 0	.62		
			1 0 0 1 1 0	.63		
			0 1 0 1 1 0	.64		
			1 1 0 1 1 0	.65		224,315,316
			1 1 0 0 0 0	.66	63-68	285,286
			0 0 1 1 1 0	.67		
			1 0 1 1 0 1	.68		
			1 0 1 0 0 0	.69	79-84	
			0 1 1 1 1 0	.70		254
			1 1 1 1 1 0	.71		
			0 0 0 1 0 0	.72	B2-B7	355,356
			0 0 0 0 0 1	.73		314
			1 0 0 0 0 1	.74		284
			0 1 0 0 0 1	.75		
			0 1 1 0 0 0	.76	86-91	
			1 1 0 0 0 1	.77		405,406
			0 0 1 0 0 1	.78		
			1 0 1 0 0 1	.79		
			0 1 1 0 0 1	.80		
			1 1 1 0 0 1	.81		354
			0 0 0 1 0 1	.82		
			1 1 1 0 0 0	.83	93-98	455,456
			1 0 0 1 0 1	.84		
			0 1 0 1 0 1	.85		
			1 1 0 1 0 1	.86		
			0 0 1 1 0 1	.87		404
			1 0 1 1 0 1	.88		
			0 1 1 1 0 1	.89		
			1 1 1 1 0 1	.90		
			1 0 0 1 0 0	.91	C2-C7	505,506
			0 0 0 0 1 1	.92		
			1 0 0 0 1 1	.93		
			0 1 0 0 1 1	.94		
			1 1 0 0 1 1	.95		
			0 0 1 0 1 1	.96		
			1 0 1 0 1 1	.97		
			0 1 1 0 1 1	.98		
			1 1 1 0 1 1	.99		
			0 0 0 1 1 1	1.0		
			1 0 0 1 1 1	1.01		

0 - OFF 1 - ON

6

										0	1	0	1.02
										1	1	0	1.03
										0	0	1	1.04
										1	0	1	1.05
										0	1	1	1.06
										1	1	1	1.07

		FUNCTION	SETTINGS				DIA CODE	DIA MULT	OLD COMP CODE	NEW COMP CODE
5	5-8	IMPELLER DIAMETER	5	6	7	8				
		COMP "B"	1	0	1	1		1.799	NOT CURRENTLY AVAILABLE	
			0	0	0	1		1.712		
			1	0	0	1	2	1.556	42,49,56,63,B2 72,79,86,93,C2	3 DIGIT NUMBER ENDING WITH A 2
			0	0	0	0	3	1.442	43,50,57,64,B3 73,80,87,94,C3	3 DIGIT NUMBER ENDING WITH A 3
			1	0	0	0	4	1.303	44,51,58,65,B4 74,81,88,95,C4	3 DIGIT NUMBER ENDING WITH A 4
			0	1	0	0	5	1.212	45,52,59,66,B5 75,82,89,96,C5	3 DIGIT NUMBER ENDING WITH A 5
			1	1	0	0	6	1.142	46,53,60,67,B6 76,83,90,97,C6	3 DIGIT NUMBER ENDING WITH A 6
			0	0	1	0		1.056	NOT CURRENTLY AVAILABLE	
			0	0	1	1	7	1.012	47,54,61,68,B7 77,84,91,98,C7	3 DIGIT NUMBER ENDING WITH A 7
			1	0	1	0		0.975		
			0	1	1	0		0.845		
			1	1	1	0		0.756		
			0	1	0	1		0.674		
			1	1	0	1		0.601		
6	1-2	SEE ABOVE								

SWITCH BANK	SWITCH POSITION	FUNCTION	ZONE	SF	DESCRIPTION
					3 4 5
6	3-5	COMPRESSOR SELECTION FACTOR	1	1.000	0 0 0
			2	0.958	1 0 0
			3	0.915	0 1 0
			4	0.873	1 1 0
			5	0.831	0 0 1
			6	0.789	1 0 1
			7	0.746	0 1 1
			8	0.704	1 1 1

0 - OFF 1 - ON

SWITCH BANK	SWITCH POSITION	FUNCTION	SETTINGS	DESCRIPTION
6	6-7	SEE ABOVE		
6	8	LAG COMPRESSOR DISABLED	0 1	NO YES
7	1-4	Y DEGREES F CONDITION FOR LAG CHILLER TURN ON	1 2 3 4 0 0 0 0 1 0 0 0 0 1 0 0 1 1 0 0 0 0 1 0 1 0 1 0 0 1 1 0 1 1 1 0 0 0 0 1 1 0 0 1	DEGREES 5 10 15 20 25 30 35 40 45 50
7	5-8	X MINUTES CONDITION FOR LAG CHILLER TURN ON	5 6 7 8 0 0 0 0 0 1 0 0 1 1 0 0 0 0 1 0 1 0 1 0 0 1 1 0 1 1 1 0 0 0 0 1 1 0 0 1 0 1 0 1 1 1 0 1 0 0 1 1 1 0 1 1	MINUTES 1 5 10 15 20 25 30 35 40 45 50 55 60

0 - OFF 1 - ON

TABLE II

MOTOR FACTORS FOR 19DK/DM/DR IDEAL MOTORS

	MOTOR CODE														
VOLT/HZ	AA	AB	AC	AD	AE	CA	CB	CC	CD	CE	CL	CM	CN	CP	CQ
200/60	5	3	4	4	2		4	5	3	6	3	2	3	2	2
208/60	6	3	5	5	4		5	5	5	8	4	2	4	2	2
220/60	2	1	3	2	2		3	4	2	2	2	3	1	1	1
230/60	3	2	5	3	4		5	6	4	4	3	5	2	2	2
240/60	5	1	7	4	5		5	6	4	4	3	8	2	2	2
360/60	2	3	6	8	4		4	2	4	2	2	2	1	1	1
380/60	4	5	6	3	2		7	4	6	4	4	5	3	2	2
400/60	5	6	8	4	4		7	5	8	4	4	5	3	2	3
440/60	2	2	3	3	2		3	3	2	2	1	1	1	1	3
460/60	3	3	5	5	4		5	4	3	2	2	2	2	2	5
480/60	5	5	7	6	5		7	5	4	3	3	3	3	3	7
550/60	2	2	2	4	3		4	2	3	2	1	2	3	2	2
575/60	4	4	3	6	4		4	4	4	2	2	3	4	3	3
600/60	5	5	5	7	5		8	5	6	4	3	4	6	5	4
3300/60						4	4	4	4	1	2	3	3	3	2
2400/60						4	4	4	3	3	2	3	2	2	3
4160/60						4	4	4	3	3	2	3	2	2	3
220/50	2	2	5	1	1		3	1	2	2	2	3	2	1	1
230/50	4	3	7	2	3		4	2	2	3	2	4	3	2	1
240/50	5	4	8	3	4		5	3	5	4	3	5	3	3	2
320/50	1	1	2	2	1		2	2	2	2	1	1	1	1	3
346/50	2	3	5	4	4		4	4	3	3	3	2	1	2	3
360/50	3	4	6	6	4		5	5	4	4	4	2	2	2	8
380/50	2	2	3	3	2		5	2	3	3	3	2	4	2	2
400/50	4	4	2	5	4		6	4	4	5	4	3	6	4	3
415/50	4	5	7	6	6		8	5	5	6	5	4	7	5	4
3000/50						3	3	2	2	3	2	3	1	2	1
3300/50						4	4	3	3	3	3	4	2	2	1
6000/50						5	5	5	4	4	4	4	4	4	4

TABLE II (continued)

MOTOR FACTORS FOR 17 DK/DM/DR SIEMENS MOTORS

	MOTOR CODE						
VOLT/HZ	E	F	G	H	J	K	L
200/60		4	4	5	4	2	4
230/60		4	4	5	4	2	4
380/60		4	4	5	4	2	4
460/60		4	4	5	4	2	4
575/60		4	4	5	4	2	4
2400/60			4	4	3	3	4
4160/60			6	6	6	6	5
200/50	4	4	4	1	3	4	4
400/50	4	4	4	1	3	4	4
3300/50			6	6	6	6	5