PLATE HEAT EXCHANGER FAST SUPERHEAT QUICK REFERANCE SHEET

EVAPORATOR WITH FREQUENCY DRIVE ON COMPRESSOR'S (FIRMWARE VER 17.26B OR LATER)

#	Name	Value	Min	Max	Adjust Value	Time (SEC)	Max Time Allowed (SEC)	Lockout Delay (HRS)	Safety Down Time(MIN)	Active or Non-Active	Select Value: # decimals & print char	Level Of Auth. To Display	Type of Setpoint
9	FAST SH TRGT	10	5	20	0.5	3	5	0	0	Active ...	TEMP	View Only	Time
10	FZN/ADJ MPY	2	1	3	0.5	1	1	0	0	Active ...	TEMP	View Only	Time
11	LOAD ADJ	0.2	0	3	0.1	1	5	0	0	Active ...	HUMD or %	View Only	Time
12	SH MPY/%SPRD	1	1	3	1	0	0	0	0	Active ...	DIGITAL/SW	View Only	Time
13	ROC MPY/LSUC	1	1	3	1	2	3	0	0	Active ...	DIGITAL/SW	View Only	Time
14	LIMIT ADJ	0.1	0.1	0.5	0.1	3	6	0	0	Active ...	DEC1NOCH	View Only	Time
15	Vmin/Lsh MPY	10	2	50	1	2	3	0	0	Active ...	HUMD or %	View Only	Time
16	EXV MAX%	100	40	100	1	0	0	0	0	Active ...	HUMD or %	View Only	Setpoint
17	LO SUPERHEAT	4	2	5	0.5	60	120	2	5	Active ...	TEMP	View Only	Alarm
18	LoPsiShDely	10	1	30	1	10	30	0	0	Active ...	SECONDS	View Only	Time
19	EXV DELAY	30	1	90	1	0	0	0	0	Active ...	SECONDS	View Only	Time
20	EXV STRT TME	80	1	270	1	0	0	0	0	Active ...	SECONDS	View Only	Time

(ABOVE VALUES FOR FAHRENHEIT, FOR CELSIUS DO THE FOLLOWING: SP 9 VALUE = 6, SP 10 VALUE = 1 & SP 17 VALUE = 2)

RECOMMENDED STARTING VALUES

VALUE AND TIME FIELD DESCRIPTION

SP#	VALUE	RANGE	TIME	RANGE	
9	10	10 TO 20	3	1 TO 5	VALUE = ***SUPERHEAT TARGET*** (SUGGEST DON'T GO BELOW 9 FOR DX SYSTEMS) TIME = ***SLOPE SECONDS***, SLOPE OF SUPERHEAT, USED TO EVALUATE DECISIONS
10	2	0.5 TO 3	1	1 TO 1	VALUE = ***FAST SUPERHEAT ZONE*** SYSTEM MAKES DECISIONS TO KEEP SUPERHEAT IN THIS AREA TIME = ***ADJUSTMENT MULTIPLIER*** WHEN IN FAST ZONE. CURRENTLY NOT USED
11	0.2	0.0 TO 3	1	0 TO 10	VALUE = ***LOAD / UNLOAD ADJUSTMENT*** TO EXV WHEN COMPRESSOR CHANGES CAPACITY TIME = ***REHEAT / FLUSH*** IF TIME FIELD > 0 IT IS USED TO ADJUST THE EXV VALVE % WHEN IN FLUSH
12	1	1 TO 3	0	0 TO 0	VALUE = ***SUPERHEAT MULTIPLIER*** FOR SH ADJUSTMENT BASED ON DISTANCE FROM TARGET TIME = ***PERCENT OF SPREAD*** DIFFERENCE OF EXV VALVE % ALLOWED ONCE WITHIN CONTROL RANGE
13	1	1 TO 3	2	1 TO 3	VALUE = ***MULTIPLIER FOR ROC*** ADJUSTMENT BASED ON SLOPE CHANGE TIME = ***MULTIPLIER FOR LOW SUCTION*** WHEN IN LOW SUCTION
14	0.1	0.1 TO 0.5	3	3 TO 6	VALUE = ***LIMIT ADJUST*** WHILE IN FAST ZONE. OUTSIDE FAST ZONE LIMIT IS DOUBLED TIME = ***LIMIT ADJUST OUTSIDE 2 X FAST ZONE*** THIS VALUE TIMES 0.1 BECOMES LIMIT
15	10	2 to 50	2	1 TO 3	VALUE = ***MIN VALVE POSITION*** IFYOU HAVE HOT GAS BYPASS THIS VALUE WILL BE HIGHER TIME = ***LOW SUPERHEAT MULTIPLIER*** FOR ADJUSTMENT BEING MADE WHEN IN LOW SUPERHEAT
16	100	40 to 100	0	0 TO 0	VALUE = ***MAX VALVE POSITION*** TIME = ***CURRENTLY NOT USED***
17	4	2 to 5	120	60 TO 120	VALUE = ***LOW SUPERHEAT VALUE*** IF BELOW THIS VALUE THE SYSTEM TAKES CORRECTIVE ACTION TIME = ***LOW SUPPERHEAT TIMER*** IF SH BELOW THIS VALUE FOR > THAN TIME SPECIFIED SAFETY TRIP
18	10	1 to 30	60	10 TO 30	VALUE = ***LOW PSI DELAY*** IF WE GO BELOW LOW PSI FOR THIS TIME SYSTEM TAKES CORRECTIVE ACTION TIME = ***EXV DELAY*** INTERVAL BETWEEN ADJUSTMENTS
19	30	1 to 90	9	0 TO 0	VALUE = ***DELAY BETWEEN ADJUSTMENTS*** AS A FUNCTION OF ABS(CURR SH - TARGET) TIME = ***SPREAD CONRTOL*** MULTIPLIER TIMES FAST ZONE + TARGET DEFINES WHEN CONTROL SPREAD
20	80	1 TO 270	8	0 TO 0	VALUE = ***EXV STARTING TIME*** IF < 90, >= 90 SYSTEM CALCULATES START TIME TIME = ***COMPRESSOR DELAY*** TIME ALLOWING VALVE TO START OPENING

FINE TUNING ADJUSTMENT

LOW SUCTION

- SP13 TIME FIELD IS MULTIPLIER FOR ADJUSTMENT BEING MADE WHEN IN LOW SUCTION
- IF RECOVERY IS TOO QUICK AND SUCTION GETS TOO HIGH REDUCE MULTIPLIER BY 1
- IF RECOVERY IS TOO SLOW, I.E. WE HAVE A SAFETY TRIP, THEN INCREASE MULTIPLIER BY 1

LOW SUPERHEAT

- SP15 TIME FIELD IS MULTIPLIER FOR ADJUSTMENT BEING MADE WHEN IN LOW SUPERHEAT
- IF RECOVERY IS TOO QUICK AND SUPERHEAT GETS TOO HIGH REDUCE MULTIPLIER BY 1
- IF RECOVERY IS TOO SLOW, I.E. WE HAVE A SAFETY TRIP, THEN INCREASE MULTIPLIER BY 1

ERRATIC SUCTION PSI

- PSI PROBLEM USUALLY OCCURS IF THE SUCTION TRANSDUCER IS OVERSIZED.
- YOU CAN OVERCOME THIS BY PUTTING IN A 3 SECOND AVERAGE

ERRATIC SUCTION TEMP

- TMP PROBLEM USUALLY OCCURS IF THE SUCTION TEMPERATURE SENSOR CABLE IS ROUTED NEAR HIGH VOLTAGE
- YOU CAN TRY A 3 SECOND AVERAGE, BUT IT'S BETTER TO CORRECT THE PROBLEM

SP 9 SLOPE SAMPLES

- THE LARGER THE TIME FIELD THE LARGER THE ROC ADJ CAN BE
- IF YOU DECREASE THE TIME FIELD YOU MAY NEED TO INCREASE SP 13 ROC ADJ
- THE LARGER SP 9 TIME FIELD THE MORE THE MORE THE ROC IS AN AVERAGE

SP 12 SH ADJUST

- THIS VALUE IS THE MULTIPLIER FOR CURRENT ROC.
- INCREASING THIS VALUE HAS THE EFFECT OF APPLYING MORE ADJUSTMENT BASED ON CURRENT SH RELATIVE TO TARGET
- INCREASING ALSO HAS THE EFFECT OF RAISING THE SH CURVE UP HIGHER

SP 13 ROC ADJUST

- THIS VALUE IS THE MULTIPLIER FOR THE CURRENT ROC. THIS IS A FUNCTION OF SP9 TIME FIELD, NUMBER SECONDS SLOPE
- INCREASING THIS VALUE HAS THE EFFECT OF APPLYING MORE ADJUSTMENT BASED ON CURRENT ROC.
- INCREASING ALSO HAS THE EFFECT OF REDUCING THE OSILATION OF THE SH CURVE

SP 14 LIMIT ADJUST

- WATCH SH ADJ, ROC ADJ & ADJ IN THE MIDDLE RIGHT SECTION OF THE STATUS SCREEN
- IF SH ADJ OR ROC ADJ ARE BEING LIMITED AND THE SH IS MOVING OUTSIDE THE FAST ZONE THEN INCREASE THE VALUE

SP 19 VALUE FIELD EXV DELAY

- SP19 VALUE FIELD IS THE DELAY BETWEEN ADJUSTMENTS
- IT IS A FUNCTION OF THE AREA BETWEEN THE CURRENT SUPERHEAT AND THE SUPERHEAT TARGET
- ITS VALUE IS A FUNCTION OF THE REFRIGERENT TIME THRU THE EVAPORATOR

SP 20 VALUE FIELD EXV START TIME

- SP20 VALUE FIELD SPECIFIES THE TIME THE EXV VALUE WILL REMAIN AT ITS STARTING VALUE
- IF THE VALUE IS GREATER THAN OR EQUAL TO 90 SEC THEN THE MAGNUM WILL MODIFY THE STARTING PERCENTAGE BASED ON STARTING PREFORMANCE