APPLICATION NOTE

APP #65A

Revision History

Date	Author	Description
12-09-10	Weston Klebs	Created application note
02-15-19	DEW	Updated as per Bret
09-17-19	DEW	Compressor added 1 to 1 Ratio

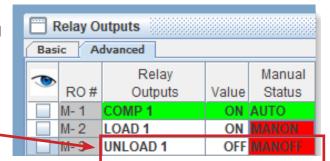# Slide Amp Calculation Adjustments through MCS-Connect for 1 to 1 Ratio

IMPORTANT

If you are using MCS Controls with a Hanbell Infinite Control (stepless) compressor, you need to follow these steps when commissioning the compressor to ensure correct operation.

General Concept

Not all compressors will run exactly at the full load amperage rating that the manufacturer provides. Likely it will be very close, but some fine tuning of the configuration will enable the operator to maximize efficiency and control of the unit. This manual is designed to walk you through the steps of adjusting your slide amp calculation through MCS-Connect for optimum performance of your system.
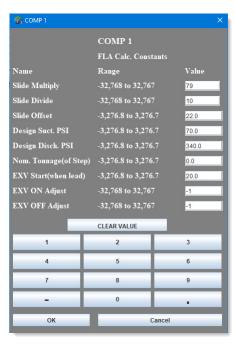
1. Setting the Upper Limit

a. Use MCS-Connect to link with the Magnum control board and get authorized at Supervisor or Factory level.

b. While the compressor is running near design conditions, turn the UNLOAD relay manually OFF, and the LOAD relay manually ON.

c. Wait until the compressor is fully loaded. Then check the value in the FLA% in the circuit grid for that compressor.

- If the FLA% is 101 or above, then increase the slide offset.
- If the FLA% is 97 or below, decrease the slide offset.

d. To access the slide offset you must first have the proper authorization level to make changes to the unit. Double-click on the relay for the compressor you are tuning (in this example COMP is the name of the relay output).

e. A window will pop up (as shown on right) with the slide amp calculation. Increase or decrease the "Slide Offset" value and press the OK button to accept the changes.

f. Check the FLA% value again. It should say 99 or 100. If not, then repeat steps C and D again until you reach a value of 99 or 100.

2. Setting the Lower Limit

Now that you have finished calibrating the upper FLA% you may now work on setting the minimum FLA% limit.

a. Begin by turning the LOAD relay manually OFF, and UNLOAD relay manually ON.

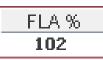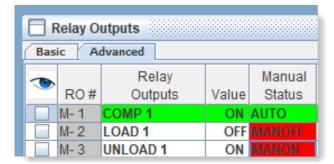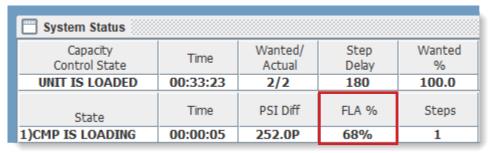b. Wait until the compressor is fully unloaded and then check the FLA% value in the circuit grid.

Relay Outputs

	RO #	Relay Outputs	Value	Manual Status
☐	M- 1	COMP 1	ON	AUTO
☐	M- 2	LOAD 1	OFF	MANOFF
☐	M- 3	UNLOAD 1	ON	MANON

System Status

Capacity Control State	Time	Wanted/ Actual	Step Delay	Wanted %
UNIT IS LOADED	00:33:23	2/2	180	100.0

State	Time	PSI Diff	FLA %	Steps
1)CMP IS LOADING	00:00:05	252.0P	68%	1

c. Take this number, double click on the "Value" column for setpoint #31 "MIN FLA %" and set this number as the new value.

(Note: if you have multiple compressors you should use an average of their fully unloaded values).

Setpoints

#	SetPoints	Value	Time	SEC Ig...	windo...	safety	HI zone	LOW z	Setback	MIN VFD	MAX VFD	MAX V...	Type
1	CHW OUT TRGT	45.0F	------	------									SETPOINT
2	CTRL ZONE+	0.5F	------	------									SETPOINT
3	CTRL ZONE-	0.5F	------	------									SETPOINT
8	ChmbInjOnDis	180.0F	------	------									SETPOINT
9	SUPERHT TRGT	10.0F	5 S	0	0								ALM ONLY
10	SPRHT ZONE+-	2.0F	------	------									SETPOINT
11	EXV LOAD ADJ	0.1%	------	------									SETPOINT
12	EXV FINE ADJ	0.1%	------	------									SETPOINT
13	EXV COURSE	0.5%	3 S	------									SETPOINT
14	EXV Load DIV	3	------	------									SETPOINT
15	EXV MIN%	10.0%	------	------									SETPOINT
16	EXV MAX%	100....	------	------									SETPOINT
17	LO SUPERHEAT	6.0F	120 S	0	0								SETPOINT
18	LOSUCTPSIDLY	4s	------	------									SETPOINT
19	EXV DELAY	60s	------	------									SETPOINT
20	EXV STRT TME	5s	------	------									SETPOINT
23	POWERUP DLAY	15s	------	------									SETPOINT
25	STEP SENSIT	1	------	------									SETPOINT
26	STEP DELAY	180s	------	------									SETPOINT
27	MAX ROC-	-0.7F	------	------									SETPOINT
28	MAX ROC+	0.7F	------	------									SETPOINT
29	ROC INTERVAL	60s	------	------									SETPOINT
30	MAX FLA %	100....	------	------									SETPOINT
31	MIN FLA %	50.0%	------	------									SETPOINT
32	MAX ADJUST %	10.0%	------	------									SETPOINT
33	MIN ADJUST %	2.0%	------	------									SETPOINT
34	SLIDE SENSIT	1	------	------									SETPOINT
35	AMP DB HI	3.0%	------	------									SETPOINT
36	AMP DB LO	3.0%	------	------									SETPOINT
37	LOAD PULSE	6	------	------									SETPOINT
38	UNLOAD PULSE	5	------	------									SETPOINT
48	CND ADJ DLAY	15s	0 S	------									ADJUST
49	CdFanStrt%	25.0%	------	------									SETPOINT
50	CND TARG PSI	215.0P	0 S	------				5.0P	5.0P	0.0P	------	------	------	TARGET

Setpoint Value adjustment

MIN FLA %   68 %

Adj. Range 40.0% to 80.0%

Set new value here for MIN FLA%
CLICK SEND CHANGE

CLEAR VALUE

1	2	3
4	5	6
7	8	9
-	0	.

SEND CHANGE   CANCEL