

Micro Control Systems

APPLICATION NOTE

APP-065

Slide Amp Calculation Adjustments through MCS-Connect

Revision History

Date	Author	Description
12/09/10	Weston Klebs	Created application note

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



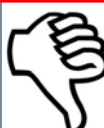
- Use MCS-Connect to link with the Magnum control board and get authorized at Supervisor or Factory level.
- While the compressor is running, turn the UNLOAD relay manually OFF, and the LOAD relay manually ON.

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

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

Capacity Control State	Time	Wanted/ Actual	Step Delay	Wanted %	Rate of Change
UNIT IS LOADED	29:19:34	1/1	240	100.0	0.0
State	Time	Oil Diff	FLA %	Steps	
1)CMP IS HOLDING	00:22:18	163.0P	96	1	

- If the FLA% is 101 or above, then increase the slide multiplier
 - If the FLA% is 98 or below, decrease the slide multiplier.
- To access the slide multiplier 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). A window will pop up with the slide amp calculation. Increase or decrease the "Slide Multiply" value and press the OK button to accept the changes.
 - 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.

FLA %		FLA %		FLA %	
99		96		102	

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.

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

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

FLA %

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#	SetPoints	Value	Time	Type
1	CW OUT TRGT	45.0F	----	SETPOINT
2	CTRL ZONE+	0.5F	----	SETPOINT
3	CTRL ZONE-	0.5F	----	SETPOINT
4	HGS TEMP ON	-0.4F	----	SETPOINT
5	HGS TEMP OFF	0.4F	----	SETPOINT
6	HGS PSI ON	62.0P	----	SETPOINT
7	HGS PSI OFF	63.0P	----	SETPOINT
22	LOW AMB. OFF	0.0F	----	SETPOINT
23	POWERUP DLAY	15s	----	SETPOINT
25	STEP SENSIT	1	----	SETPOINT
26	STEP DELAY	240s	----	SETPOINT
27	MAX ROC-	-0.7F	----	SETPOINT
28	MAX ROC+	0.7F	----	SETPOINT
29	ROC INTERVAL	60s	----	SETPOINT
30	MAX FLA %	100.0%	----	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
45	CND STG1 ON	210.0P	----	SETPOINT
46	CND STG1 OFF	170.0P	----	SETPOINT
47	CND DIFF ON	15.0P	----	SETPOINT
48	CND DIFF OFF	5.0P	----	SETPOINT
49	CND MIN RUN	0m	----	SETPOINT
56	PULSE DELAY	3s	----	SETPOINT
59	A-CYC OFF-ON	300s	----	SETPOINT
61	PMP DWN OFF	50.0P	----	SETPOINT
62	PMP DWN DLAY	30s	----	SETPOINT
63	A-CYC ON-ON	600s	----	SETPOINT

Setpoint Value adjustment

MIN FLA % %

Adj. Range 40.0% to 80.0%

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