

# Micro Control Systems

APPLICATION NOTE

APP-063

## MAGNUM CONTROLLER WITH SPORLAN EXV CONTROL

### Revision History

Date	Author	Description
09/23/10	John Walterick	Created Application Note
10/28/10	Weston Klebs	Updated Application Note, EXV Drawing

# 1. General Concept

A problem has been identified with the Sporlan IB6(Q) interface board to the EXV. On occasion the IB6(Q) misses the Analog Input signal and drives the valve shut. This causes an 'UNSAFE SUCTION' alarm and locks out the circuit.

If the IB6(Q) control is set to control 'OPEN ON RISE', (0 to 10 vdc) when the signal is missed the IB6(Q) logic drives the valve closed then repositions it to the requested position.

## 2. MCS Testing:

It has been tested that if you invert the control logic to control 'CLOSE ON RISE', (10 to 0 vdc) it eliminates the problem.

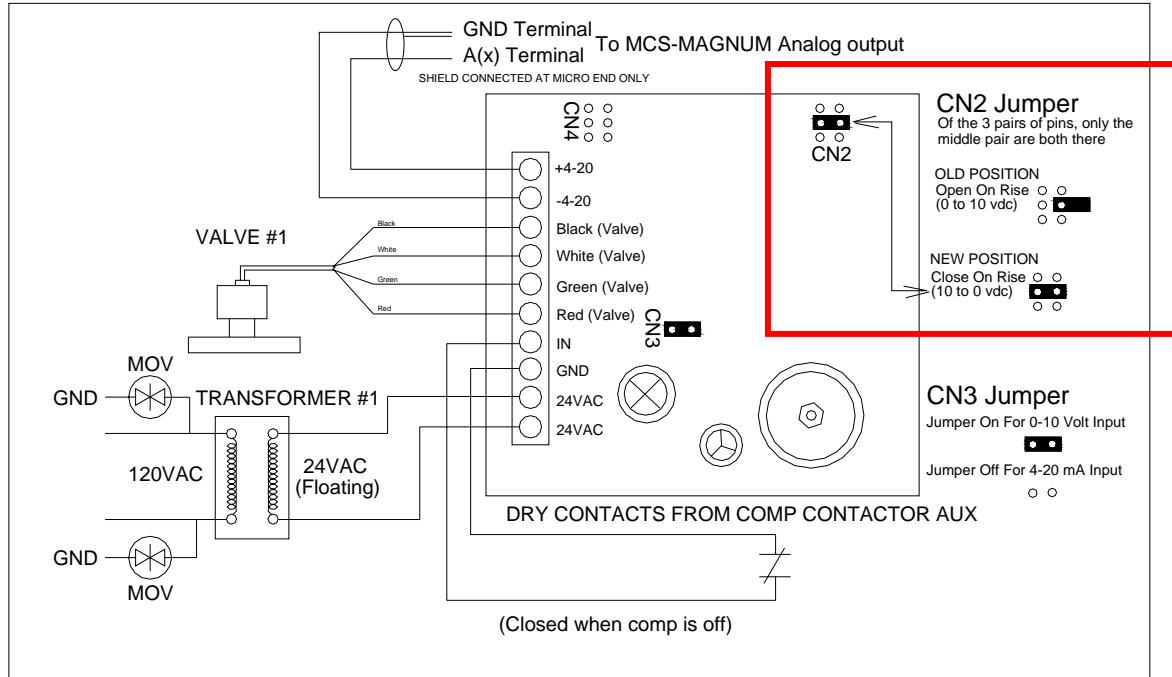
## 3. Work around solution.

To implement this solution perform the following five steps:

1. Using MCS-CONNECT log into the Magnum controller.
  - a. Receive the current Configuration file
  - b. Using the MCS-CONFIG program load the Cfg just pulled back.
  - c. Bring up the Analog Output Button.
  - d. Change the EXV Analog Output column to Invert '= YES'. (As per Figure below.)
  - e. Click the cursor off of the row changed and save updated Cfg..

Num #	Name	Display Type	Invert	Comments
M-1	EXV1 %	Standard	YES	...
M-2	EXV2 %	Standard	YES	...
M-3	Cond. V.D. %	Standard	NO	...
M-4	Bld. Bump %	Standard	NO	...
1-1	EXV3 %	Standard	YES	...
1-2	EXV4 %	Standard	YES	...
1-3	SPARE1-3	Standard	NO	...
1-4	SPARE1-4	Standard	NO	...
2-1	SPARE2-1	Standard	NO	...
2-2	SPARE2-2	Standard	NO	...
2-3	SPARE2-3	Standard	NO	...
2-4	SPARE2-4	Standard	NO	...
3-1	3-1	Standard	NO	...
3-2	3-2	Standard	NO	...
3-3	3-3	Standard	NO	...
3-4	3-4	Standard	NO	...
4-1	4-1	Standard	NO	...
4-2	4-2	Standard	NO	...
4-3	4-3	Standard	NO	...
4-4	4-4	Standard	NO	...

2. Shut down chiller. (Put the RUN/STOP to OFF.)
3. With the unit shut down move the CN2 jumper to the center position on both pins. (As per diagram)



4. Return power to Magnum board.
5. Using MCS-CONNECT, transmit updated Cfg with Inverted Analog EXV Outputs.

You have completed the upgrade and the chiller can be restarted.

## 4. Warning

**YOU MUST HAVE A LIQUID LINE SOLENOID VALVE  
INSTALLED WITH YOUR EXV  
AND / OR  
YOU MUST WIRE DRY CONTACTS (NC) FROM THE  
COMPRESSOR CONTACTOR**