

Installation, Operation & Maintenance  
Instructions for AMCI00 Alternating Motor Sequencer and Level  
Alarm with the SF100-D-P

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**AMCJ00 ALTERNATING MOTOR SEQUENCER AND LEVEL ALARM  
INSTALLATION AND OPERATION INSTRUCTIONS**

**WARNING: "Risk of electrical shock". To reduce the risk of electrical shock, be certain that it is connected only to a properly grounded, grounding-type receptacle. To prevent electrical shock, disconnect power before initiating any work. In the case of pump failure, the motor housing and/or the pumped fluid may carry high voltage to components normally considered safe.**

**Installation Instructions**

1. AMC1 00 should be installed in an indoor environment/an enclosed, conditioned space, such as a boiler room, or mechanical room in a building etc.
2. Grounding wire method: first put the input ground wire into the screw post and lock it with a nut, second put the ground wire of pump 1 into the screw post and lock it with a nut. Third, ground pump 2 using the same method, and ensure that all ground wires are secure. In addition, the input ground wire, pump 1, and pump 2 ground wire lengths should be longer than the L and N wires by at least 10mm to ensure that the lock buckle is the last wire pulled after failure.
3. AMC1 00 cord wiring specification is at least 18AWG, 300V. The power supply line is connected at the position of terminal P1, Land N of pump 1 are connected at the position of terminal P4, and Land N of pump 2 are connected at the position of P9.
4. A 20A circuit breaker (such as: 400VAC, 50/60Hz, Rated Breaking capacity 6KA) must be installed in the input line of the AMC100 to disconnect the power supply in case of short circuit or fire.

**Keys/Switches:**

1. Silence button -Labeled SILENCE. Press the button to silence the alarm sound.
2. One lag reset button- Labeled LAG RESET. Press the Lag reset button to turn off the red lag alarm light, and reset the LAG dry contacts.
3. Power supply master switch POWER ON /OFF;
4. MOTOR NO 1 rotary knob switch for pump control  
Rotate knob to "AUTO" position , the pump will be auto turned on or off.  
Rotate knob to "OFF" position, the pump will be turned off.  
Rotate knob to "HAND" position", the pump will be turned on
5. MOTOR NO 2 rotary knob switch for pump control  
Rotate knob to "AUTO" position , the pump will be auto turned on or off.  
Rotate knob to "OFF" position, the pump will be turned off.  
Rotate knob to "HAND" position", the pump will be turned on
6. Circuit breaker buttons for two pumps/motors on the side of control box - Labeled Overload Reset 1, and Labeled Overload Reset 2. After pressing the overload reset button(s) the power must also be cycled OFF, then ON.

**Dip Switch Positions for SF100-D-P Series System Feeders**

Inside the control panel, the Normally Closed or Normally Open position of the four inputs (switches 1-4) and the alarm outputs (switches 5-7) can be selected using the dip switches shown below.

Dip switch functions (shaded boxes indicate settings from factory). Confirm Input devices on site. **Turn controller OFF, then ON after making any changes to the dip switch settings.**

Switch	Signal Type	Description	Dip Switch Position	
			OFF	ON
1	Input	High Level Float (N.O.)	N.C.	N.O.
2	Input	Low Level Float (N.O.)	N.C.	N.O.
3	Input	Lead Input	N.C.	N.O.
4	Input	Lag Input	N.C.	N.O.
5	Output	Disable Lag Alarm	✓	
6	Output	Disable Lag Alarm Audible	✓	
7	Output	Disable High and Low Level Alarm Audible	✓	

## **Operation Instructions with the SFIO0-D-P Axiom System Feeder**

The duplex pump control system shall start the lead pump upon sensing a drop in system pressure below the high-pressure switch set point. Should the lead pump not be sufficient to maintain the static fill pressure for the high set point an audible alarm, indicator light, and alarm contact will be enabled; the low-pressure switch shall trip and start the lag pump. The lead pump will alternate each cycle.

The solution feeder is complete with high and low level float switches. Should either of these levels be breached an audible alarm, indicator light and alarm contact will be enabled. The low-level float will disable pumps 1 and 2. If the high level and low level switches are accidentally mixed up, the alarm lights will flash on and off.

### **1. High level operation:**

When the storage tank reaches the high liquid level, the control panel receives the buoyancy switch signal of the high liquid level, the buzzer sounds, and the red indicator light is on; When the pump works normally and the liquid level returns to normal, the red indicator turns off and the buzzer stops alarming. Remote alarm dry contact NC to NO, NO to NC;

### **2. Low level operation:**

When the storage tank drops to a low liquid level, the control panel receives the buoyancy switch signal of the low liquid level, the buzzer sounds, turns off the hydraulic pumps and the red indicator light is on; When the liquid level returns to normal, the red indicator turns off and the buzzer stops alarming. Remote alarm dry contact NC to NO, NO to NC;

### **3. High pressure operation:**

When the pressure in the storage tank is higher than the system set value, and if the control knobs are in the auto position, the control panel will automatically turn off pump 1 and pump 2;

### **4. Low pressure operation:**

When the pressure in the storage tank is lower than the system set value, and if the control knobs are in the auto position, the control panel will start pump 1 (lead pump) first. If pump 1 (lead pump) cannot maintain the set pressure, the control panel will start pump 2 (lag pump) if it is in the auto position. When starting the lag pump, the LAG alarm indicator lights up, the lag pump relay is switched, the buzzer sounds, the alarm relay of the lag pump closes, and the alarm dry contact NC is turned to NO, and NO is turned to NC;

### **5. Alternating control operation:**

The control panel has memory function for the opening sequence of the pumps. When the system needs more pressure next time, lag pump 2 will be the lead pump and come on first. Lead pump 1 will now be the lag pump and come on second. The controller will continue alternating the lead and lag pump in this manner.

### **6. Motor overload or short circuit protection:**

When one of motors overloads or has a short circuit, the overload circuit breaker will be activated to cut power to that pump only. When the other pump comes on, the lag alarm will come on. Turn controller OFF, then ON after resetting the motor overloads.

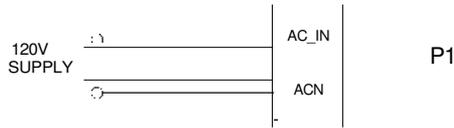
### **7. Lag Reset**

Press the LAG REST key to turn off the LAG alarm indicator light; Press the mute button to turn off the buzzer;

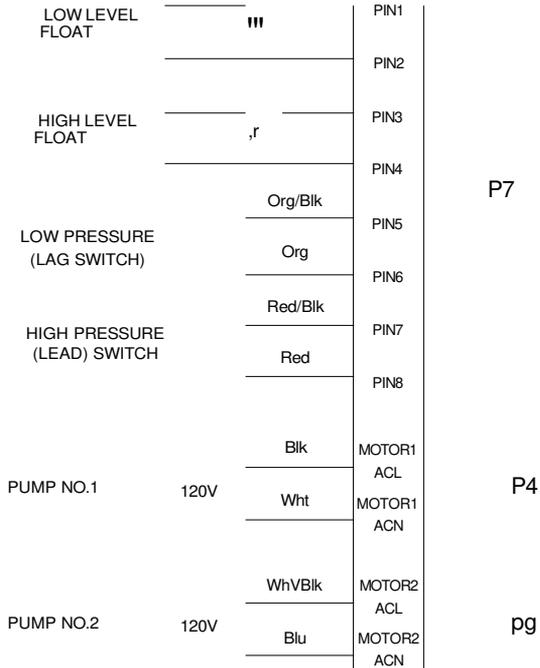
### **8. Dry Contacts**

Dry contact outputs for each of pump 1, pump 2, low level float, high level float, and lag alarm

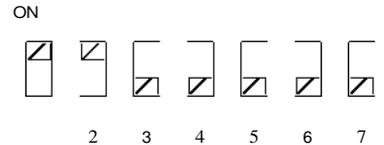
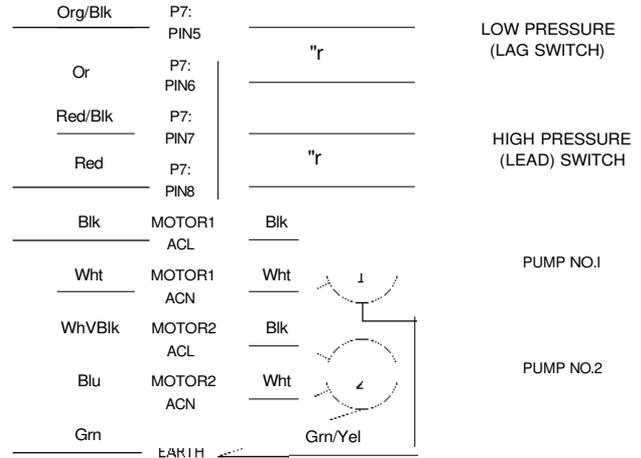
PANEL TERMINALS



PANEL TERMINALS



UNIT TERMINALS



Dip switch positions comes from factory as shown above  
**\*\*Turn power OFF then ON to enable any changes to the Dip switch settings\*\***

DRY CONTACT FOR REMOTE MOTOR 1 ALARM	NO	_____	P2
	COM	_____	
	NC	_____	
DRY CONTACT FOR REMOTE MOTOR 2 ALARM	NO	_____	P3
	COM	_____	
	NC	_____	
DRY CONTACT FOR REMOTE HIGH LEVEL ALARM	NO	_____	P5
	COM	_____	
	NC	_____	
DRY CONTACT FOR REMOTE LOW LEVEL ALARM	NO	_____	P6
	COM	_____	
	NC	_____	
DRY CONTACT FOR REMOTE LAG ALARM	NO	_____	PB
	COM	_____	
	NC	_____	

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AMC100 MOTOR SEQUENCER WITH SF100-D-P SYSTEM OPERATION																	
<p>THE DUPLEX PUMP CONTROL SYSTEM SHALL START THE LEAD PUMP UPON SENSING A DROP IN SYSTEM PRESSURE BELOW THE HIGH-PRESSURE SWITCH SET POINT. SHOULD THE LEAD PUMP NOT BE SUFFICIENT TO MAINTAIN THE STATIC FILL PRESSURE FOR THE HIGH SET POINT AN AUDIBLE ALARM, INDICATOR LIGHT, AND LAG ALARM CONTACT WILL BE ENABLED; THE LOW-PRESSURE SWITCH SHALL TRIP AND START THE LAG PUMP. THE LEAD PUMP WILL ALTERNATE EACH CYCLE.</p> <p>THE SOLUTION FEEDER IS COMPLETE WITH HIGH AND LOW LEVEL FLOAT SWITCHES. SHOULD EITHER OF THESE LEVELS BE BREACHED AN AUDIBLE ALARM, INDICATOR LIGHT AND ALARM CONTACT WILL BE ENABLED. THE LOW-LEVEL FLOAT WILL DISABLE PUMPS 1 AND 2.</p> <p>THE LAG ALARM IS A UNIQUE FEATURE THAT'S PURPOSE IS TO CALL ATTENTION TO THE FACT THAT THE LAG PUMP WAS REQUIRED TO RUN. WHILE THIS MAY BE A RESULT OF A HIGH LOAD DEMAND, IT MAY ALSO BE A RESULT OF THE LEAD PUMP FAILING AND NOT BEING OPERATIONAL. IN EITHER CASE, THE OPERATOR MAY WISH TO BE MADE AWARE OF THIS OCCURRENCE SO THAT APPROPRIATE STEPS CAN BE TAKEN. THIS FEATURE CAN BE DISABLED BY A DIP SWITCH.</p>																	
<p><b>AXIOM INDUSTRIES LTD.</b></p> <p>3603 BURRON AVE. SASKATOON, SK S7P 0E4</p>	<table border="1" style="width: 100%;"> <tr><td>DESIGNED</td><td>IAN</td></tr> <tr><td>DRAWN</td><td>IAN</td></tr> <tr><td>REVIEWED</td><td></td></tr> <tr><td>DATE</td><td>19SEPT./2022</td></tr> <tr><td>SCALE</td><td>NONE</td></tr> <tr><td>SHEET NO.</td><td></td></tr> <tr><td>REVISION</td><td>REV</td></tr> <tr><td>CAD REF.</td><td>DUPLEXPANELWIRING</td></tr> </table>	DESIGNED	IAN	DRAWN	IAN	REVIEWED		DATE	19SEPT./2022	SCALE	NONE	SHEET NO.		REVISION	REV	CAD REF.	DUPLEXPANELWIRING
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TITLE:  <b>DUPLEX PUMP CONTROL SYSTEM</b>																	
REF:	DWG.NO. <b>5</b>																

**Warning:**

- a) Indoor use;
- b) Altitude up to 2,000m;
- c) Temperature -20° C to 60° C;
- d) Max. relative humidity 90% for temperature up to 41° C decreasing linearly to 50% relative humidity at 60° C;
- e) Input voltage 110V~125V(60Hz), IHP for each pump relay, 1500W Max;
- f) MAINS supply voltage fluctuations up to  $\pm 10\%$  of the nominal voltage;
- g) Transient over voltages typically present on the MAINS supply;
- h) Applicable pollution degree 2.