



MID-ATLANTIC ENVIRONMENTAL EQUIPMENT, INC

Trouble Shooting Tip

A common issue on site is a pump that will not run in auto mode and causes the system to shut down in an alarm condition. The following pages and illustrations outline a simple way to isolate the problem without having to disconnect wires or test the individual wires with a multi meter.

Custom Integrated Solutions for Environmental Remediation and Wastewater Treatment

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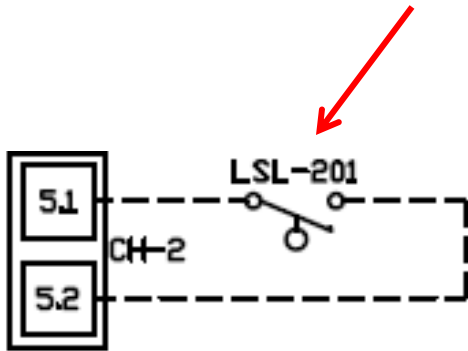
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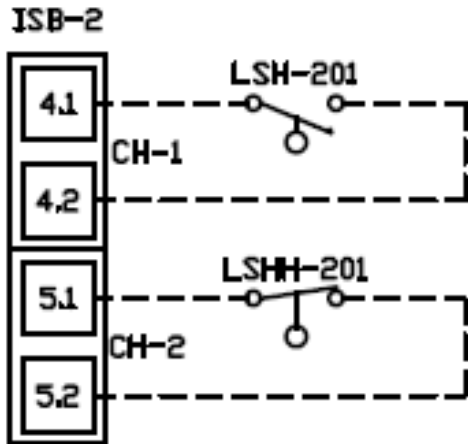
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The drawing symbols show the normal position of the resting floats



AIR/WATER SEPARATOR
LOW LEVEL SWITCH

Normally Open



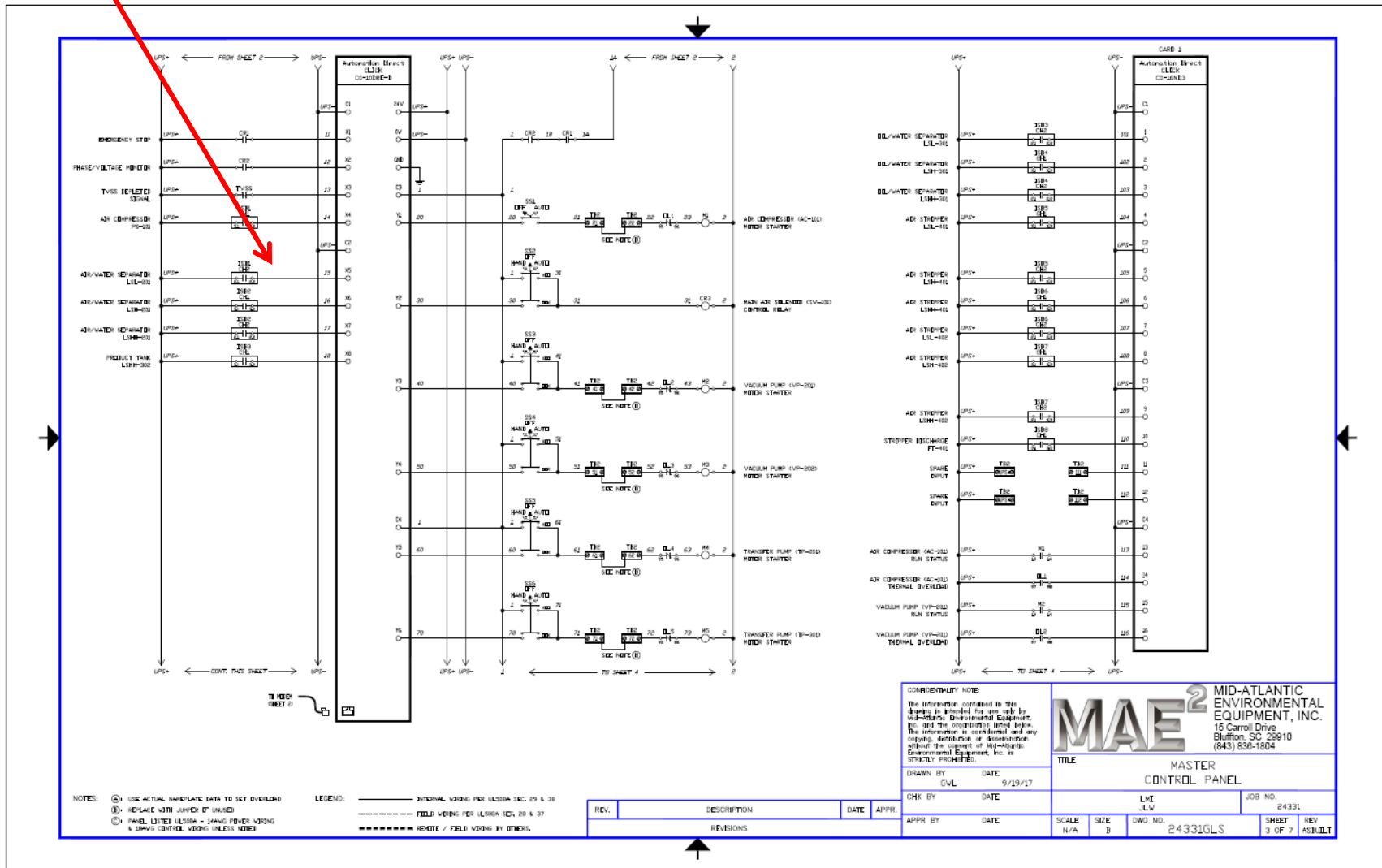
AIR/WATER SEPARATOR
HIGH LEVEL SWITCH

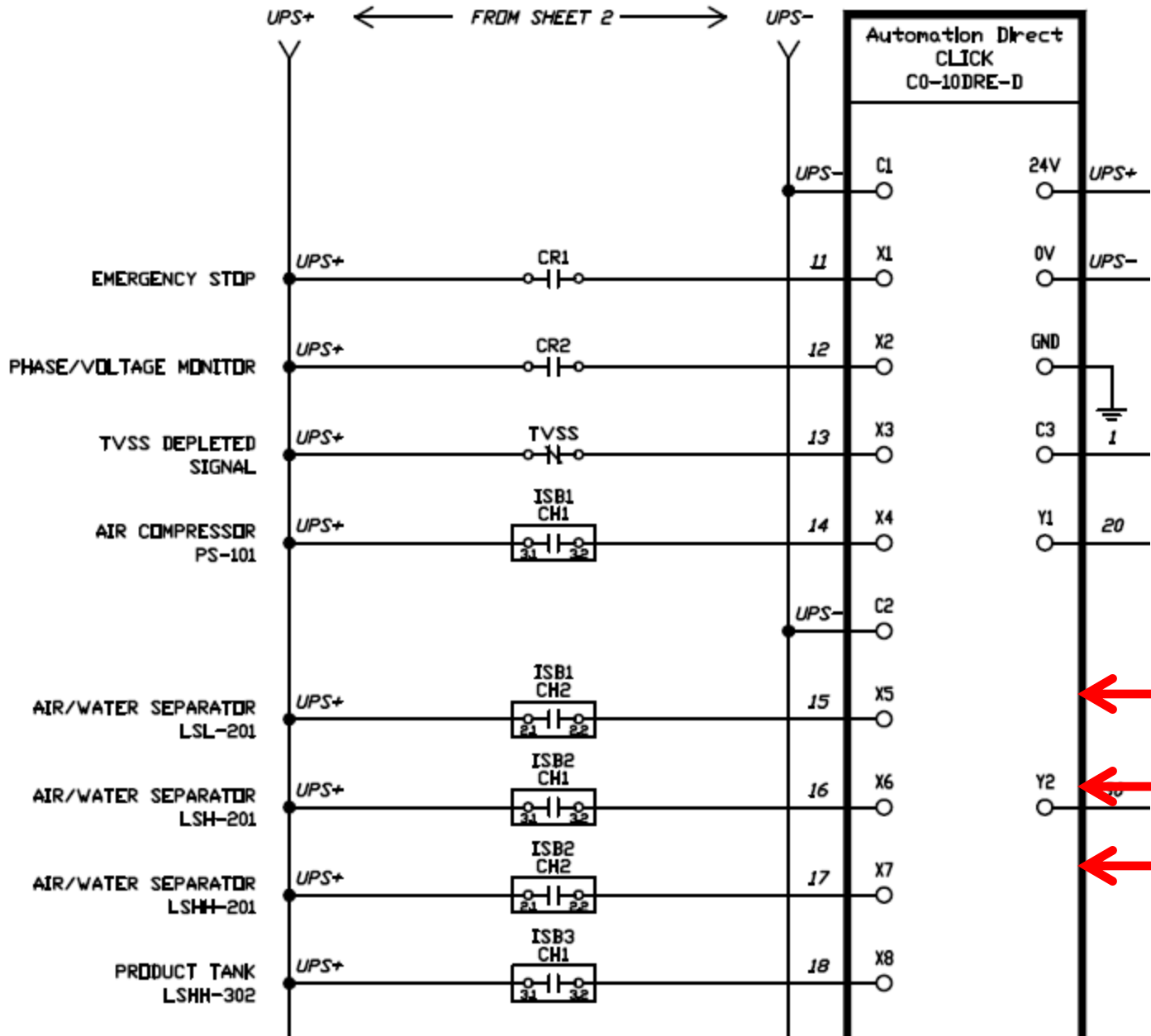
Normally Open

AIR/WATER SEPARATOR
HIGH HIGH LEVEL SWITCH

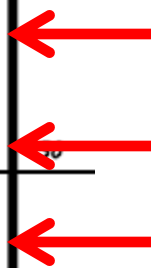
Normally Closed

Look at the electrical drawings to find out what inputs turn on and off when the floats change position. The Air Water Separator floats are connected to X5, X6 and X7 as shown below.





Usually an open input has no indication light and a closed input will have a light. In this example if all the floats are in the resting position then X5 an X6 will have no light and X7 will be lit. If a float rises from its resting position the lights will change status.





Looking at the floats, the water level has caused the Low float to rise but has not reached the High float or the High High float which are still in their resting positions

High High Float, Normally closed, resting position, Light

High Float, Normally Open, resting position, No Light

Low Float, Normally closed, not in resting position, Light

Look at the lights on the PLC and make sure they match the position of the floats.

Tip: If electrical drawings are not available you can take a photo of the input lights, flip the float assembly and compare the lights to the photo. You should be able to see 3 lights that change position.

Low Float -X5
High Float -X6
High High Float -X7



The easiest way to test the floats is to remove the floats from the sight tube. With the float tree in the upright position, all of the floats will be in their resting position. Look at the PLC and note the status of the input lights. In this AWS example the lights will be off, off, on.

Turn the whole float assembly upside down. Look at the lights on the PLC. They should have changed to the exact opposite condition. On, On , Off.

Any input light that fails to change indicates a problem. If you identify a problem then further troubleshooting is required. The most common problem is a float that is out of its normal travel range. Inspect the float stops and adjust as needed.

This is an easy trouble shooting method that can help quickly indentify an issue and get the system back up and operating.

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