

# FLOAT MANAGEMENT CONTROL MODEL 2CH-01B & 2CH-01C MANUAL



## REVISION HISTORY

<i>AUTHOR</i>	<i>REVISED SECTION/PARAGRAPH</i>	<i>REV</i>	<i>RELEASED</i>
Gary Floyd	Correction of wiring process and of Wiring Diagram.	3	07/30/20

*Draft and Archived/Obsolete revisions are not to be used.  
Access Document Control System to verify revision.*



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## 1. PURPOSE

This manual describes the installation and operation of the IUS Float Management Control Model 2CH-01B for Grinder Pumps.



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*The IUS Float Management Control Model 2CH-01B will only work on Grinder Pumps. It will not work on Centrifugal Pumps.*

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## 2. SCOPE

This manual provides an outline of the procedures used to install and operate the IUS Float Management Control Model 2CH-01B for Grinder Pumps. This procedure, in conjunction with a Job Safety Analysis (JSA), provides the minimum standards for safe operations. Deviation from the procedure requires the approval of IUS. Careful consideration of safety requirements and operational needs is an essential part of all job preparations and needs to include all field personnel present as well as Management.



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*Opening the Float Management Control Panel will void the warranty.*

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## 3. DEFINITIONS

- N/A

## 4. SAFETY



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**Read ALL instructions prior to installation! Failure to follow appropriate safety measures may lead to serious injury or death! In addition to any instructions contained in this document, follow any safety protocol(s) established by your company and local/federal regulations.**

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**Power being run into utility panels is sufficient to cause serious injury or death. Use Lock-Out Tag-Out protocol when applicable.**

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**Power being run into utility panels is sufficient to cause serious injury or death. When it is necessary to work on equipment that is powered up, take all necessary and prudent safety precautions. Always assume that circuits are live until proven otherwise.**

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*The Float Management Control must be installed by a qualified, licensed electrician.*

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## 5. REQUIRED TOOLS

1. Flathead Screwdriver
2. Phillips Head Screwdriver
3. Impact or Standard Drill
4. Bits matching the Self-Tapping Screws
5. Precision 5/64" Flat Head Screwdriver
6. Digital Multimeter
7. AC Clamp Meter

## 6. REQUIRED PARTS

1. Float Management Control Model 2CH-01B or Model 2CH-01C.
2. 2 Amp Fuse (2A, 3AG, 250V, Fast Acting, Round Glass, 0.25" x 1.25") (Included)
3. Two wire caps rated for two 8 AWG wires or one 10 AWG wire and one 8 AWG wire (Not included)
4. Four #10 x 1/2" Self-Tapping Screws (Not included)

## 7. INSTALLATION PROCEDURES

### 7.1 Unpackaging



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*Opening the Float Management Control Panel will void the warranty.*

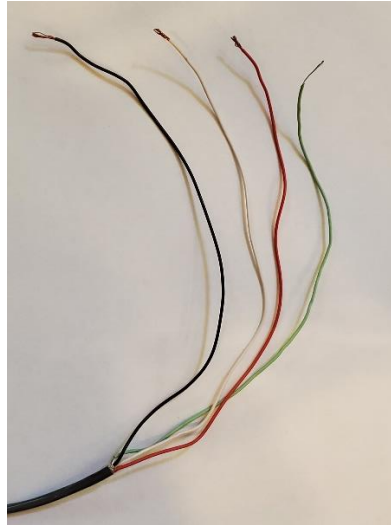


*The IUS Float Management Control Model 2CH-01B will only work on Grinder Pumps. It will not work on Centrifugal Pumps.*

1. Conduct a site inspection concentrating on hazard identification. Take note of hazards where the procedure will take place.
2. Open the box.
3. Remove the Float Management Control panel from the shipping container.
4. Remove any packing material.



5. Remove the zip ties and uncoil the wires.
6. Locate and identify the labels on each wire.
  - a. There will be two black 8AWG Motor 1 Wires.
  - b. There will be two black 8 AWG Motor 2 Wires.
  - c. There will be one Grey Control Relay Wire with a Green Ground Wire, a Red 18 AWG A1/A2 Wire, a White 18 AWG Neutral Wire, and a Black 18 AWG Line 1 Breaker Wire. Note that the Model 2CH-01B will have two Grey Wires that have been twisted together.

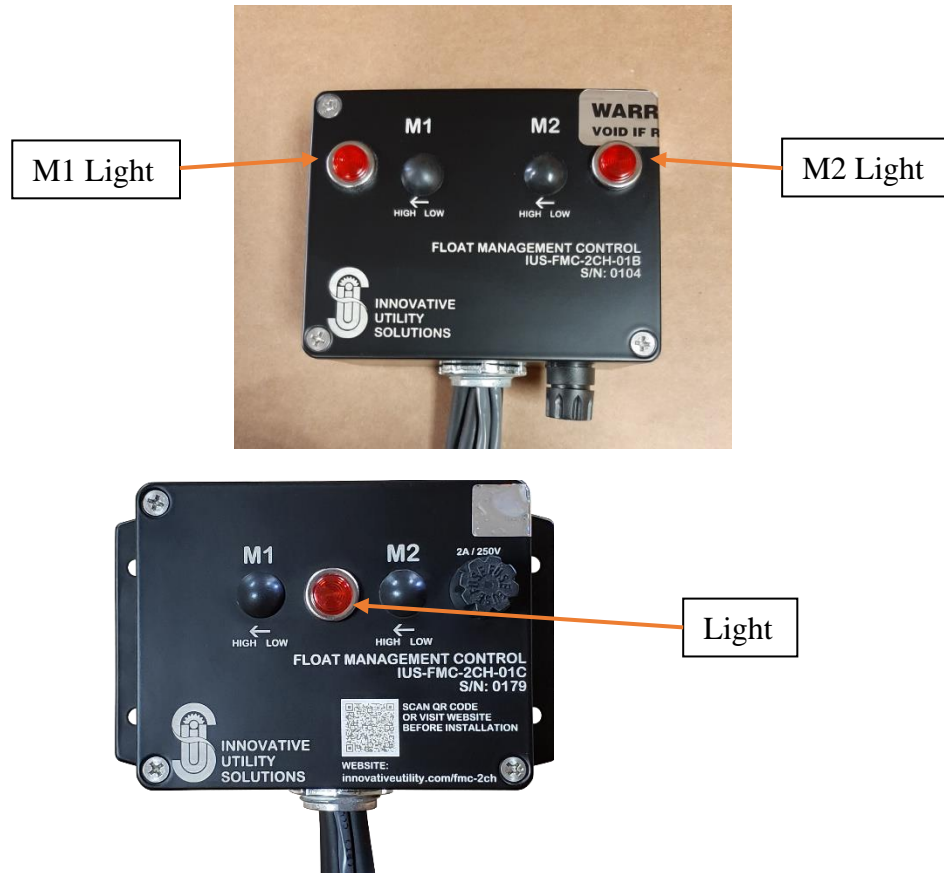


7. Note the Fuse Holder on the bottom of the panel next to where the wires exit the panel on the Model 2CH-01B. The Fuse Holder is on the right side of the face of the panel on the Model 2CH-01C. The Fuse Holder takes a 2 Amp Fuse (2A, 3AG, 250V, Fast Acting, Round Glass, 0.25" x 1.25"). Open the Fuse Holder and ensure that the correct Fuse is installed. Close the Fuse Holder.



Fuse Holder

8. There are two red lights on the face of the Panel on the Model 2CH-01B. The indicator lights are on when the FMC is actively overriding the Float Switch to keep the Grinder Pump operating. There is one red light on the face of the Panel on the Model 2CH-01C. Since the two pumps share the same Off-Float Switch and alternate operation, only one light is needed to indicate that the FMC is actively overriding the Float Switch.



9. There are two silicone buttons between the two indicator lights on the Model 2CH-01B and on either side of the indicator light on the Model 2CH-01C. Printed beneath each of the buttons are the words “High” and “Low” with an arrow pointing to the left between them. Underneath these silicone buttons are the two High-Low Adjustment Screws. The silicone buttons will be temporarily removed to allow access to the High-Low Adjustment Screws later in the procedures. Always ensure that they are replaced to keep the unit sealed.



## 7.2 Location and Mounting

1. Conduct a site inspection concentrating on hazard identification. Take note of hazards around the control panel where the procedure will take place.



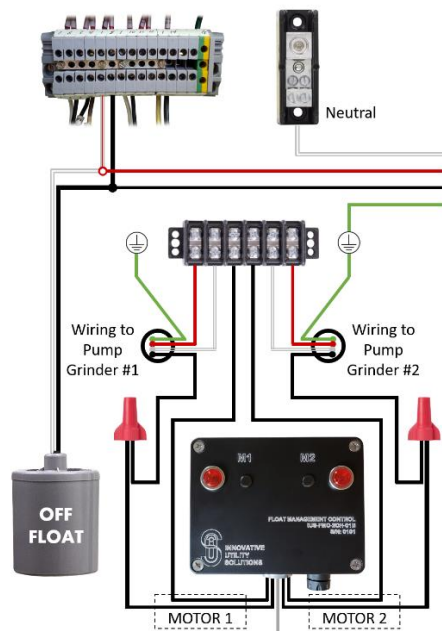


**Power being run into utility panels is sufficient to cause serious injury or death. Use Lock-Out Tag-Out protocol when applicable.**



**Power being run into utility panels is sufficient to cause serious injury or death. When it is necessary to work on equipment that is powered up, take all necessary and prudent safety precautions. Always assume that circuits are live until proven otherwise.**

2. Open the Motor Control Panel.
3. Inside the control panel locate an area to mount the FMC Panel. It can be attached to the back wall. Ensure that all the leads will reach the locations needed. Refer to Section 8 Applicable References on page 17 for Single-Phase and Three-Phase Wiring Diagram.



4. Use self-tapping screws and the holes on the flange on the FMC Panel to mount the FMC Panel to the back wall.

### 7.3 Identification of Constant Hot on OFF-FLOAT Switch Connections



***It is very important to identify and make certain each 18-3 Black and Red Wire are on the same phase. Failure to do so will result in damage to the unit and void the warranty.***

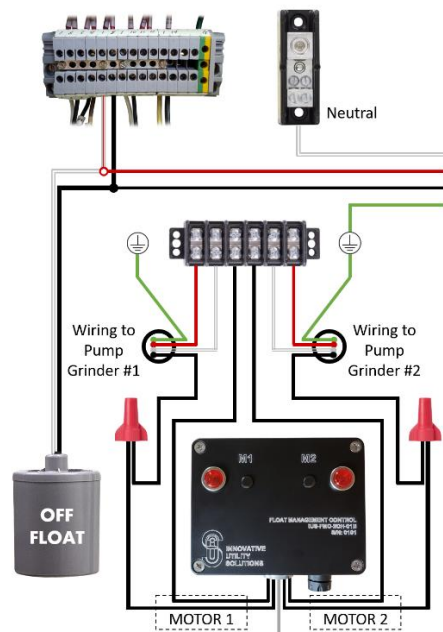


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*This procedure is required for single-phase and three-phase powered pumps.*

1. When identifying the constant hot on the OFF-FLOAT Switch connection on single-phase and three-phase pumps, the Control Panel must have power turned on and the pump should not be running.



2. Before working on anything, identify which float is the OFF-FLOAT and the location of the OFF-FLOAT's wires inside control panel. These wires will not be removed but the location of these wires will determine the location of the Grey Wire's Red 18-3 and Black 18-3 Wires.
3. It will be necessary to identify the constant hot on the OFF-FLOAT connection wires. This will determine the location of the Black 18-3 Wire.
4. Set the Multimeter to AC Voltage.
5. To locate the constant hot on the OFF-FLOAT Switch connection, put the black test lead on the Neutral Bar in the Control Panel.
6. Place the red test lead from the meter on one post of the OFF-FLOAT switch lead wire and read the voltage. If Zero, then this is the post the Red 18-3 Wire will go along with the OFF-FLOAT wire already in place. If it reads 120V, then

this is the location for the Black 18-3 Wire, which is the constant hot, along with the already existing OFF-FLOAT switch wire.

7. Place the red test lead on the other post of the OFF-FLOAT Switch to verify the accuracy of the identification. One post should be at zero and the other at 120V.



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#### 7.4 Installation of Wiring



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**Turn off power before proceeding. Power being run into utility panels is sufficient to cause serious injury or death.**

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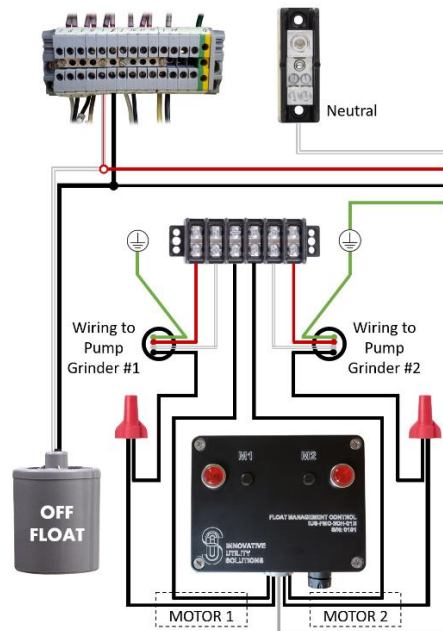


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**Power being run into utility panels is sufficient to cause serious injury or death. Use Lock-Out Tag-Out protocol when applicable.**

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1. Turn off power to the two Motors.
2. Check and verify that power has been turned off before proceeding. Conduct Lock Out/Tag Out as applicable.



3. Remove the M1 Black Motor Lead from the Control Panel Terminal Block and attach it to one of the FMC Motor 1 Black 8 AWG Wires with a wire nut.
4. Attach the remaining FMC Motor 1 Black 8AWG Wire to the Control Panel Terminal Block in the spot the M1 Black Motor Lead was taken from. It may be necessary to bypass the Terminal Block if the Terminal Block will not accommodate the Black 8 AWG Wire. Alternatively, it may be possible to splice an appropriately sized piece of wire to the Black 8 AWG Wire and run it to the Terminal Block.
5. Remove the M2 Black Motor Lead from the Control Panel Terminal Block and attach it to one of the FMC Motor 2 Black 8 AWG Wires with a wire nut.
6. Attach the remaining FMC Motor 2 Black 8AWG Wire to the Control Panel Terminal Block in the spot the M2 Black Motor Lead was taken from. It may be necessary to bypass the Terminal Block if the Terminal Block will not accommodate the Black 8 AWG Wire. Alternatively, it may be possible to splice an appropriately sized piece of wire to the Black 8 AWG Wire and run it to the Terminal Block.
7. Take the Grey Wire and locate a clean path to install the wire neatly in the Control Panel reaching the final location for each wire. Note the length needed and skin the grey jacket as necessary to achieve the desired length. Be careful not to skin the Red, Black, or White Wires.
  - a. Red 18-3 Wire to the OFF-FLOAT Switch return post depending on the identification determined earlier.
  - b. Black 18-3 Wire to the OFF-FLOAT Switch constant hot post depending on the identification determined earlier.
  - c. White 18-3 Wire to Neutral.

- d. Ground Wire to the Ground Bar.
8. Take the Black 18-3 Wire and install on previously located OFF-FLOAT Switch constant hot post in the Control Panel.
9. Install the White 18-3 Wire under the previously located Neutral Bar in the Control Panel.
10. Install the Ground Wire under the previously located Ground Screw in the Control Panel.
11. The Red 18-3 Wire will go to the OFF-FLOAT Switch return post that was previously tested earlier in the process.



CAUTION

*Verify all wiring is correct and properly connected.*

## 7.5 Calibration of FMC



WARNING

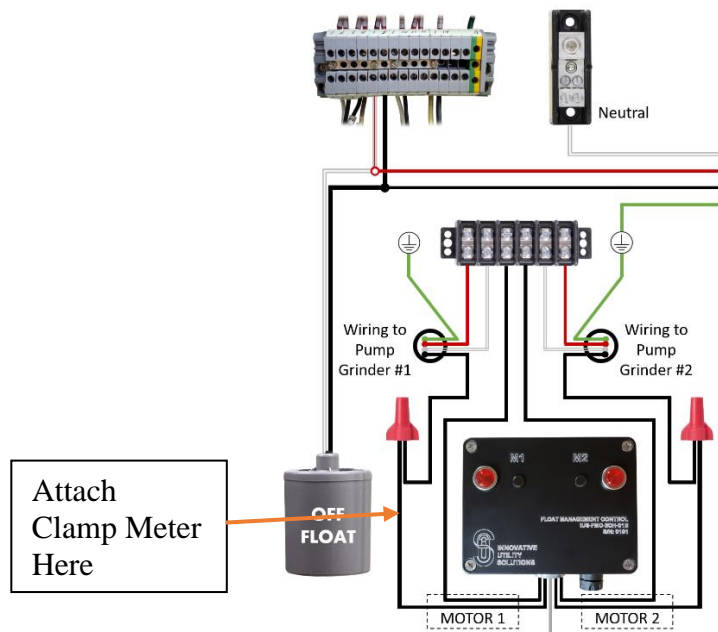
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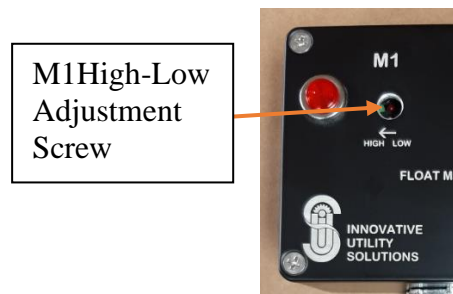
CAUTION

*Ensure the floats for the motors give the motor an adequate amount of water around the motor to keep it cool while running. It is recommended that the final normal operating level of the water is to be no more than 2" below the top of the motor.*

1. Attach the AC Clamp Meter to the M1 8 AWG Black Wire.



2. Turn on power to the M1 Circuit. If necessary, manually turn on the M1 Pump.
3. Watch the current draw on the Clamp Meter.
4. Allow the M1 Pump to run for 10 to 15 seconds to get the current down to a stable, steady state level.
5. Remove the silicone button covering the M1 High-Low Adjustment Screw. Set it aside and do not lose it.



6. Run M1 Pump while using a Precision 5/64" Flathead Screwdriver on the M1 High-Low Adjustment Screw to make the adjustments.
7. Turn the High-Low Adjustment Screw counterclockwise slowly until you see the red light come on and stop. It may take several turns before the light comes on. If the light is on initially, proceed to step 8.
8. Slowly turn the High-Low Adjustment Screw clockwise until the red light goes off.
9. Again, slowly turn the High-Low Adjustment Screw counterclockwise until red light comes on and note this location.
10. Again, slowly turn the High-Low Adjustment Screw clockwise until red light goes off and note this location.
11. Turn the High-Low Adjustment Screw counterclockwise to the halfway point between the two positions and the red light should be off which will set the calibrated position of the FMC High-Low Adjustment Screw.
12. Remove the AC Clamp Meter.
13. Replace the silicone button that covers the M1 High-Low Adjustment Screw.

M1 High-Low  
Adjustment  
Screw



M1  
Silicone  
Button

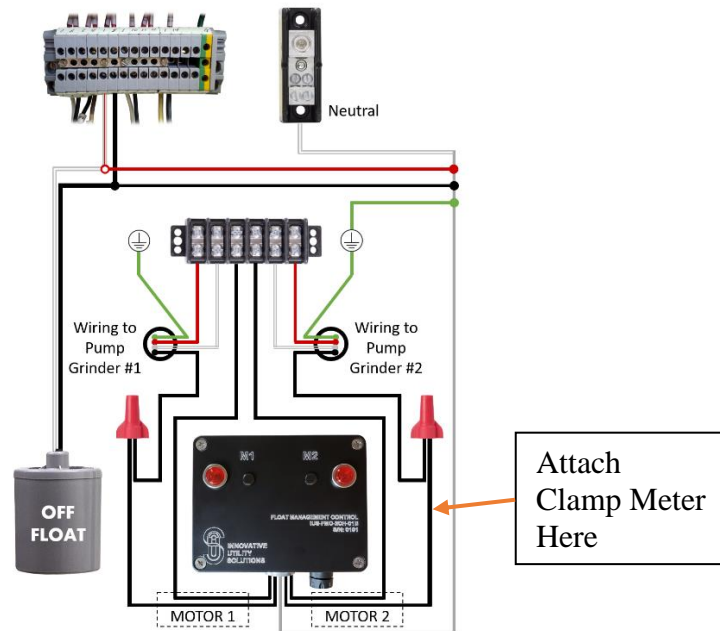


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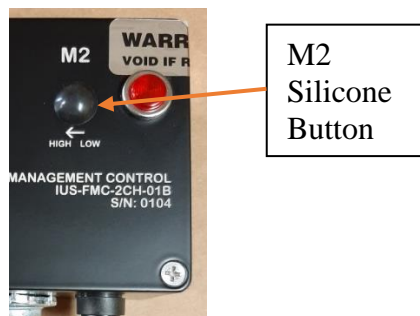


*Ensure the floats for the motors give the motor an adequate amount of water around the motor to keep it cool while running. It is recommended that the final normal operating level of the water is to be no more than 2" below the top of the motor.*

14. Attach the AC Clamp Meter to the M2 8 AWG Black Wire.



15. Turn on power to the M2 Circuit. If necessary, manually turn on the M2 Pump.
16. Watch the current draw on the Clamp Meter.
17. Allow the M2 Pump to run for 10 to 15 seconds to get the current down to a stable, steady state level.
18. Remove the silicone button covering the M2 High-Low Adjustment Screw. Set it aside and do not lose it.





19. Run M2 Pump while using a Precision 5/64" Flathead Screwdriver on the M2 High-Low Adjustment Screw to make the adjustments.
20. Turn the High-Low Adjustment Screw counterclockwise slowly until you see the red light come on and stop. It may take several turns before the light comes on. If the light is on initially, proceed to step 21.
21. Slowly turn the High-Low Adjustment Screw clockwise until the red light goes off.
22. Again, slowly turn the High-Low Adjustment Screw counterclockwise until red light comes on and note this location.
23. Turn the High-Low Adjustment Screw clockwise to the halfway point between the two positions and the red light should be off which will set the calibrated position of the FMC High-Low Adjustment Screw.
24. Remove the AC Clamp Meter.
25. Replace the silicone button that covers the M2 High-Low Adjustment Screw.



M2 High-Low Adjustment Screw



M2 Silicone Button

26. Close the Motor Control Panel.



CAUTION

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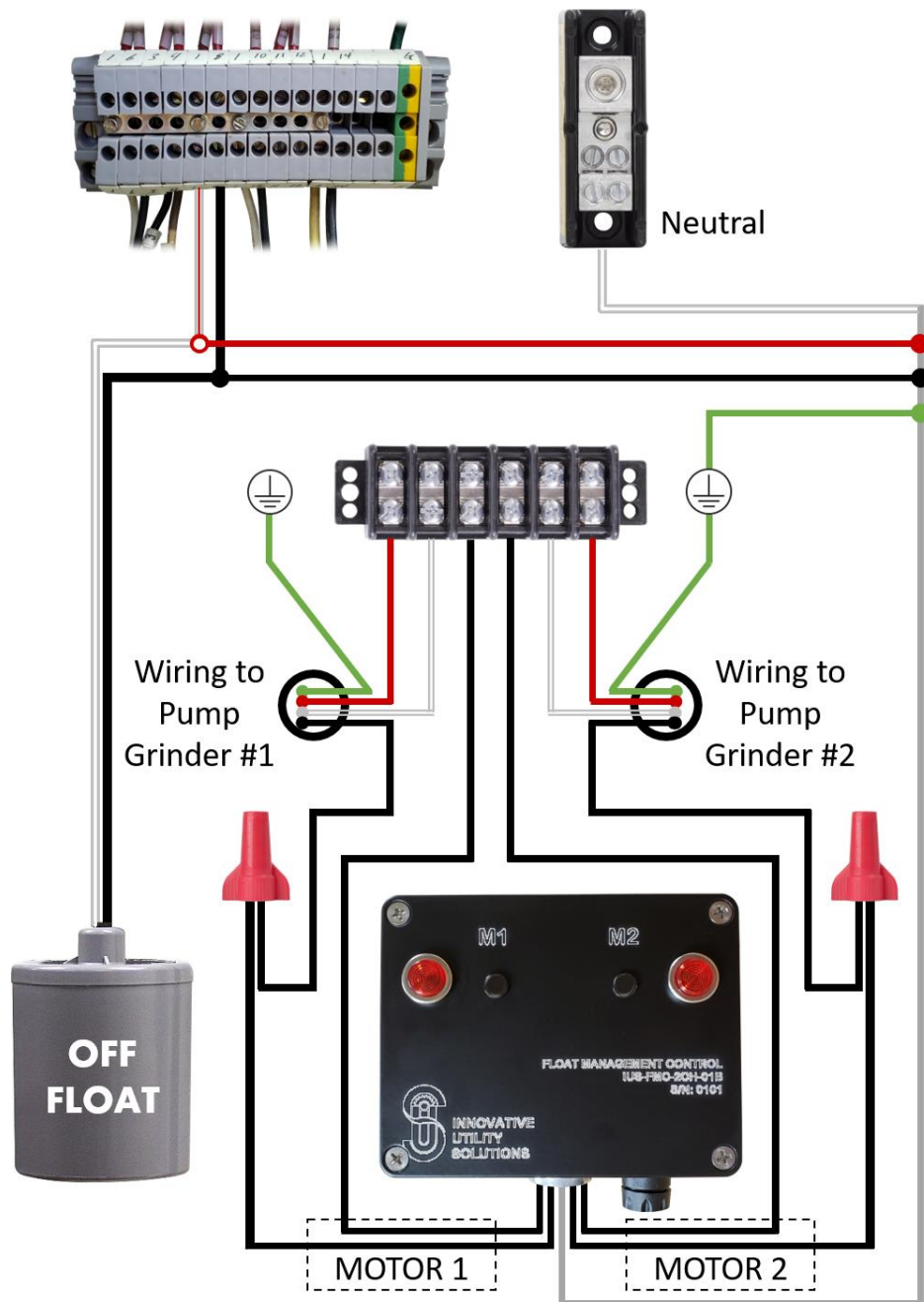


WARNING

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## 8. APPLICABLE REFERENCES

### 1. Single-Phase and Three-Phase Wiring Diagram



Single-Phase and Three-Phase Power Wiring Diagram