

## Installation Guide

### Introduction:

The Isoflow Model 302 has been developed to allow two (2) irrigation controllers or other control devices to share one (1) flow sensor by electrically isolating its flow outputs. Additionally, two control inputs are provided allowing the flow output signals to be switched off by an external signal. The ISO2 is compatible with all CST flow sensors and many other sensors producing a square wave output proportional to flow rate. It is not compatible with Hunter HFS sensors.

### Example of Control Input Use:

Smart irrigation controllers monitor flow continually to check for leaks or stuck valves. If two controllers are sharing a sensor and one starts an irrigation cycle, the other controller may interpret the flow input as unscheduled flow and trigger an alarm. Connecting the master valve outputs of both controllers to the Isoflow control inputs, will allow the active controller to block the flow signal to the inactive one preventing a nuisance alarm.

### Applications:

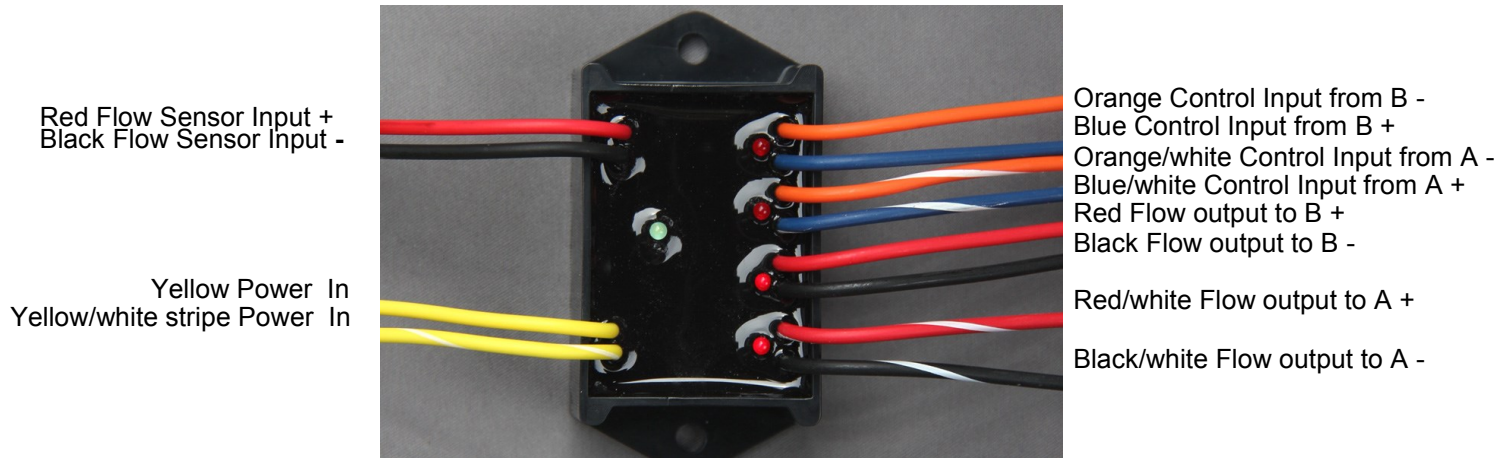
- ◆ Share one flow sensor between two irrigation controllers
- ◆ Share one flow sensor between an irrigation controller and pump controls
- ◆ Share one flow sensor between pump controls and a fertigation system

### Mounting Instructions:

The Isoflow circuitry is fully encapsulated in a watertight epoxy. The preferred location is indoors or inside a controller pedestal. The enclosure may be attached to any flat surface, vertical or horizontal, using the mounting tabs or double sided adhesive tape, where the LEDs are visible to assist in set-up or troubleshooting.

## Wiring Instructions:

Typically, the Isoflow is mounted in the pedestal or enclosure of one irrigation controller and powered by the same. Four conductors are necessary to connect the flow output and control input from the other controller to the Isoflow. If the two controllers are not close together, install appropriate communications cable between the two.



All connections are made to the 20 AWG color coded conductors as shown.

1. Connect flow sensor wires from the field to the solid Red and Black flow input leads adjacent to the two Yellow power leads. Observe correct polarity.
2. Connect the solid Red and Black leads on the opposing side of the Isoflow to flow inputs on controller B. Again observe polarity.
3. Connect Red/White and Black/White flow output leads to flow inputs on controller A. Observe polarity.
4. Connect the Yellow and Yellow/white leads to the 24 VAC auxiliary power supply of either irrigation controller. If the controller is not equipped with auxiliary power terminals, provide a separate 24 VAC power supply.

**Isoflow will now provide isolated flow signals to two controllers.**

**Both controllers will receive the same flow signal whether or not they are actively operating zone valves.**

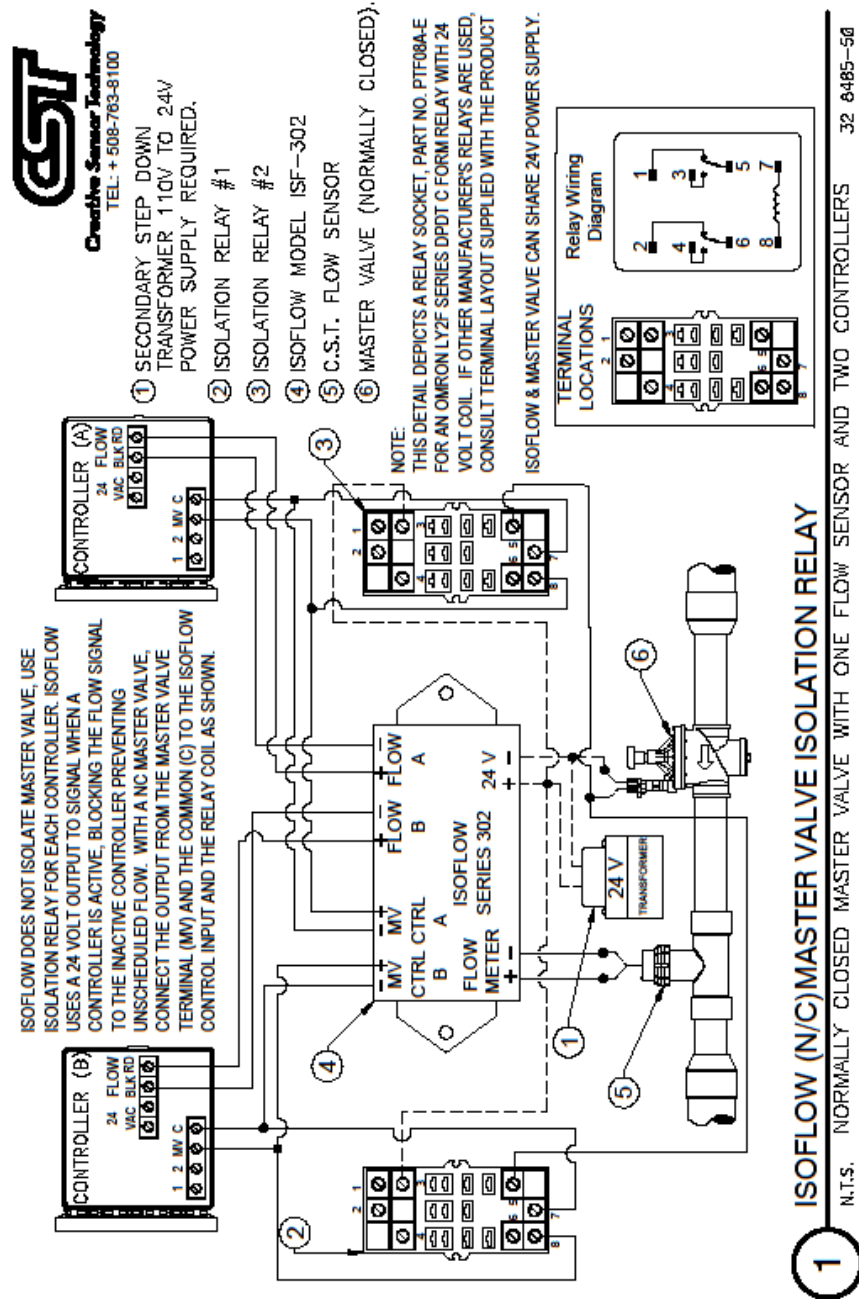
**To prevent a controller in the off mode from issuing an "unscheduled flow" alarm, see below.**

The Isoflow will actively control (switch off) either flow output if 24 volt power is applied to the Orange and Blue control circuit leads. Use the master valve (or pump start) circuit of an active controller to signal the Isoflow to block flow to an inactive controller. The output must produce 24 Volts when the controller is active. So, if a Normally Open Master valve is used, connect the control lead to the Pump Start. To block the flow signal on output B, apply 24 volt power across the Orange and Blue leads of Control Input A.

5. Connect Blue lead to Master Valve terminal (or Pump Start terminal) on controller B.
6. Connect Orange lead to MV Common terminal (or Pump Start terminal) of controller B.
7. Connect Blue/White lead to Master Valve terminal on controller A.
8. Connect Orange/White lead to MV Common terminal on controller A.

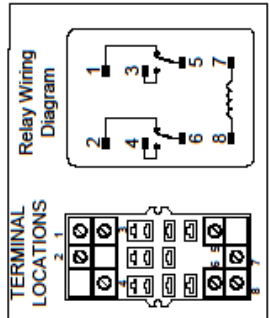
When both controllers are inactive- the flow signal is directed to both controllers. When controller A is active and B is not, the flow signal is blocked to controller B preventing unscheduled flow alarms. When controller B is active and A is not, the reverse condition occurs. When both controllers are active, the flow signal is directed to both.

The Isoflow will not isolate the master valve.  
 It uses the mv (or pump start) circuitry for a control input only.  
 If the master valve will be operated from controllers with two different power supplies,  
 use isolation relays as diagrammed below.

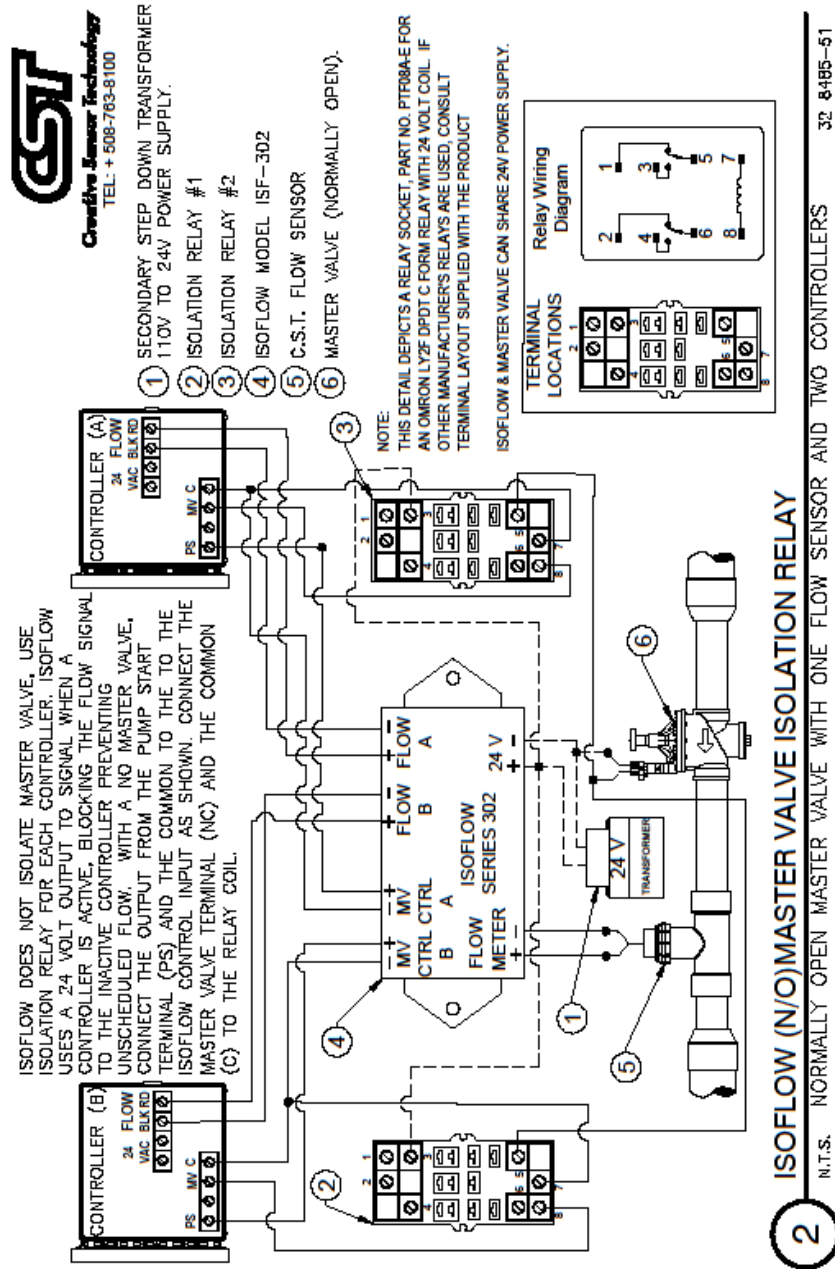


**CST**  
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- 1 SECONDARY STEP DOWN TRANSFORMER 110V TO 24V POWER SUPPLY REQUIRED.
- 2 ISOLATION RELAY #1
- 3 ISOLATION RELAY #2
- 4 ISOFLOW MODEL ISF-302
- 5 C.S.T. FLOW SENSOR
- 6 MASTER VALVE (NORMALLY CLOSED).



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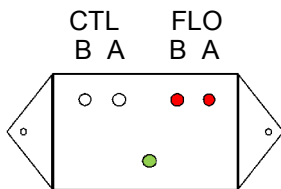
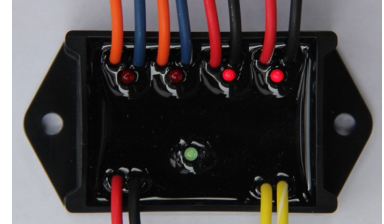


## LED Operation:

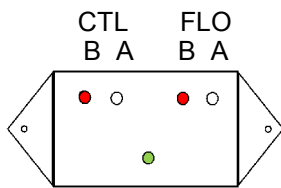
LEDs have been added to the Isoflow to assist in set-up and troubleshooting..

When power is applied initially, the green Input LED and the two red Flow Output LEDs will blink three times then remain ON.

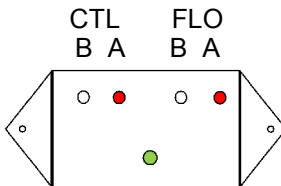
This indicates that the circuit is powered and the processor is active.



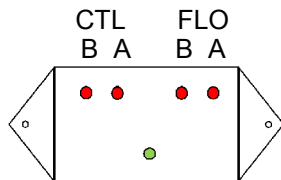
When a flow signal is received the green Input LED will blink at a steady rate regardless of flow rate. The two Flow Output LEDs will remain ON indicating that both flow outputs are active and flow data is being transmitted..



If Control Input A is powered, the LED adjacent to its leads will illuminate and the LED adjacent to Flow Output B will go off, indicating that the flow signal is blocked.



If Control Input B is powered, the LED adjacent to its leads will illuminate and the LED adjacent to Flow Output A will go off, indicating that the flow signal is blocked.



If both controllers are on, both Control Input A and B will be powered . In this case, both flow outputs will be active and this will be indicated by all four red LEDs will be illuminated.

Caution: If controllers are equipped with “Learned Flow” feature, make sure to adjust for increased flow when controllers operate together.

When Troubleshooting, observe LEDs to check flow status, wiring and control inputs.

## Warranty Statement:

The Creative Sensor Technology Warranty Statement is available on our website under the **About Us** tab. Click this link or paste this address into your browser to view.