



SMART SHOT CONTROLLER FLUID USERS GUIDE

Pg.

2	SMART SHOT CONTROLLER FEATURES
3	SMART SHOT CONTROLLER FEATURES
3	SMART SHOT CONTROLLER CONFIGURATIONS
4	FLOAT/SENSOR WIRING
5	TOP AND BOTTOM FLOAT/SENSOR WIRING
6	PUMP CONTROL WITH MONITORING
7	REMOTE/LOCAL BYPASS SWITCH

CAUTION: Never connect any voltage to the SMART SHOT Sensor Input terminals. The Smart Shot supplies the voltage needed for sensor switching (use dry relay contacts only). Make sure the float or sensor terminals do not have voltage from previously wired configurations.

ATTENTION: Depending upon the style of system that your are going to control with the Smart Shot Cellular Controller you may need to supply additional parts. Such as relays, step-down transformers, Murphy switches etc.

CELLULAR CARRIER

Each Smart Shot's data plans are for 1 year of Wireless Data service that starts on the date of install. The Wireless data plans are renewable for periods of 1 year through Hot Shot Systems Inc.

SMART SHOT POWER SUPPLY

The Smart Shot comes with a 120vac to 15vdc external power supply. The power supply comes with a 120vac power cord with a 3 prong plug. If there is no wall outlet available than the cord plug can be cut off and wired directly to 120vac terminals. NO power supply provided with SOLAR models.

OPTIONAL 12VDC BATTERY BACKUP

During a power outage, a gel cell rechargeable battery will supply power to the Smart Shot. This will allow the Smart Shot to send alerts when there is a loss of power. The Smart Shot comes with a battery saver feature that will turn off the Smart Shot if the voltage drops from 12vdc to 10vdc. This function will add years of life to the gel cell battery.

Important... When the battery has discharged, it will take approximately 15 to 20 minutes for the battery to charge enough to operate the Smart Shot in case of another power failure. The battery should be replaced every year for the best reliability during power outages. Call 785-623-1500 for replacement batteries.

OPTIONAL SOLAR POWERED SMART SHOT

The Solar Powered Smart Shot comes with a 10watt solar panel along with a larger 12vdc backup battery. Because of shipping the solar battery in not installed in the smart shot enclosure. After the Smart Shot enclosure is mounted the solar battery can be placed in the lower right corner. Connect he red battery wire lead to the positive terminal on the battery and the black battery wire to the negative terminal on the battery. The 10 watt solar panels comes with a pre installed mounting bracket that is designed to position the solar panel at an optimal 45degree angle upwards toward the sun. The solar panel needs to be installed facing south and in a location where it will be exposed to full sun all day.

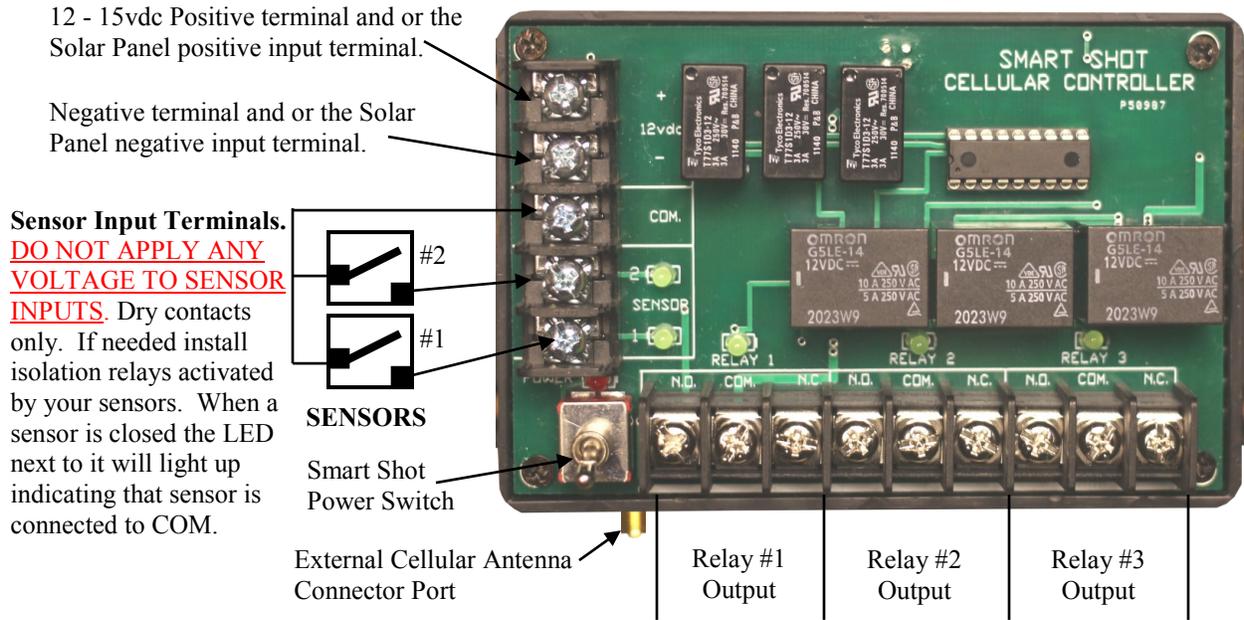
SMART SHOT CONFIGURATIONS

The Smart Shot can be configured to operate in three different ways:

- 2 INPUT SENSORS AND 1 RELAY OUTPUT CONTROL.
Input Sensors #1 and #2, Relay Output #3 are operational.
- 1 INPUT SENSORS AND 2 RELAY OUTPUT CONTROLS.
Input Sensors #1, Relay Output #2 and #3 are operational.
- 3 RELAY OUTPUT CONTROLS.
Relay Output #1, #2 and #3 are operational.

A Smart Shot can only be configured in one of these three ways. These configurations are best set up at the factory upon ordering of the Smart Shot. If the Smart Shot must be configured differently than how it left the factory it can be changed once installed and powered up. If changing the configuration is needed please call Hot Shot Systems Inc. service department at 785-623-1500.

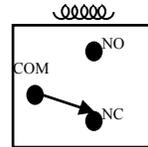
SMART SHOT CONTROLLER FEATURES



RELAY OUTPUTS

The Smart Shot's relay outputs can switch up to 250vac at 10amps (*5amps continuous loads*). The Smart Shot's relay contacts are dry (*no originating voltage from the relay*). Use the Smart Shot's relays to switch the voltage going to any device to control it. The LED above the relay will light up indicating that relay is engaged (*COM is connected to N.O.*).

The Smart Shot's relays start in N.C. mode upon power up. If the backup battery option is not being used and power is lost while the relay is engaged to N.O. the Smart Shot's relay will revert back to the N.C. position.



The relay outputs can be configured to be latching or momentary. This is done from the Smart Shot online Dashboard. When configured this way the Mobile Dashboard will have different buttons for controlling the relays.

Listed below are the output relay button choices to pick from.

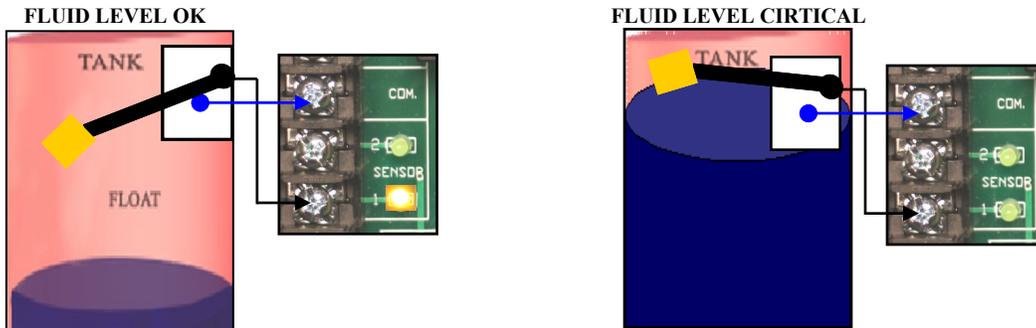
- Momentarily energizes the output relay #3 for 8 seconds.
- Momentarily energizes the output relay #2 for 8 seconds.
- De-energizes the output relay. Can be used on any output relay.
- Energizes the output relay. Can be used on any output relay.
- Momentarily energizes the output relay for 8 seconds. Can be used on any output relay.

SMART SHOT CONTROLLER FLOAT/SENSOR WIRING

N.C. TOP FLOAT/SENSOR

Wire the sensor as per the diagram below. With this style of operation the Smart Shot's sensor LED will be on when the fluid is low since the float/sensor is closed. The status will be displayed as **NORMAL**.

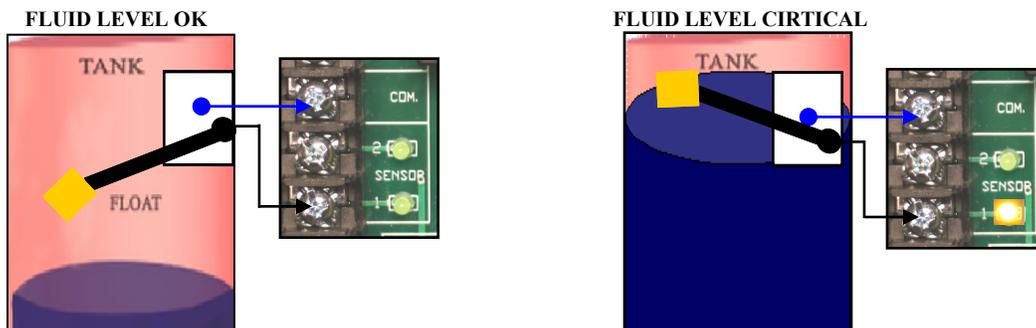
When the tanks fluid becomes high, the Smart Shot's sensor LED will be off and the status will be displayed as **CRITICAL**. This is also when the Smart Shot will send out text and email alerts to all the authorized users set to receive them.



N.O. TOP FLOAT/SENSOR

Wire the sensor as per the diagram below. With this style of operation the Smart Shot's sensor LED will be off when the fluid is low since the float/sensor is open. The status will be displayed as **NORMAL**.

When the tanks fluid becomes high, the Smart Shot's sensor LED will be on and the status will be displayed as **CRITICAL**. This is also when the Smart Shot will send out text and email alerts to all the authorized users set to receive them.



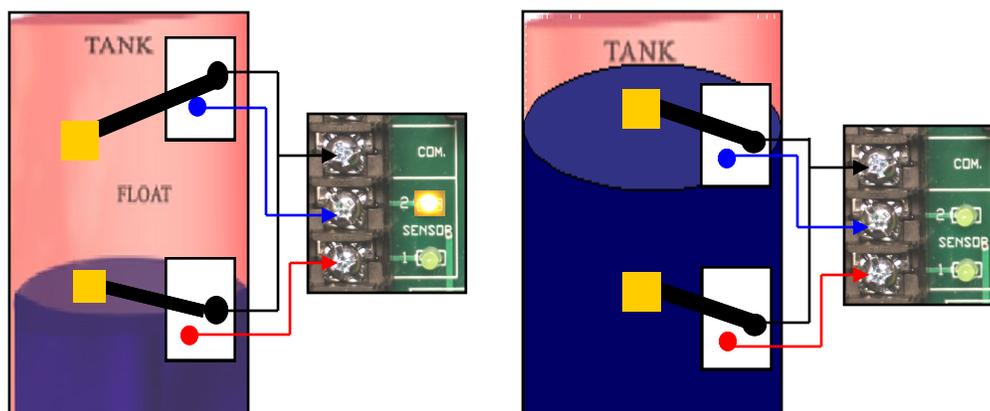
The Smart Shot's sensor 2 can be wired the same way as shown above with sensor 1 above and used to monitor another float/sensor.

N.C. TOP AND BOTTOM FLOAT/SENSOR

Wire the sensor as per the diagram below. With this style of operation the Smart Shot's sensor 1 and 2 LED will be on when the fluid is below the bottom sensor. The status will be displayed as **NORMAL**. Both of the float/sensors are closed.

When the tanks fluid is between the float/sensors, the Smart Shot's sensor 2 LED will be on and the status will be displayed as **WARNING**. *If needed text and email alerts can be sent out to all the authorized users set to receive them at this level.*

When the tanks fluid becomes high, the Smart Shot's sensor 1 and 2 LED will be off and the status will be displayed as **CRITICAL**. This is also when the Smart Shot will send out text and email alerts to all the authorized users set to receive them.

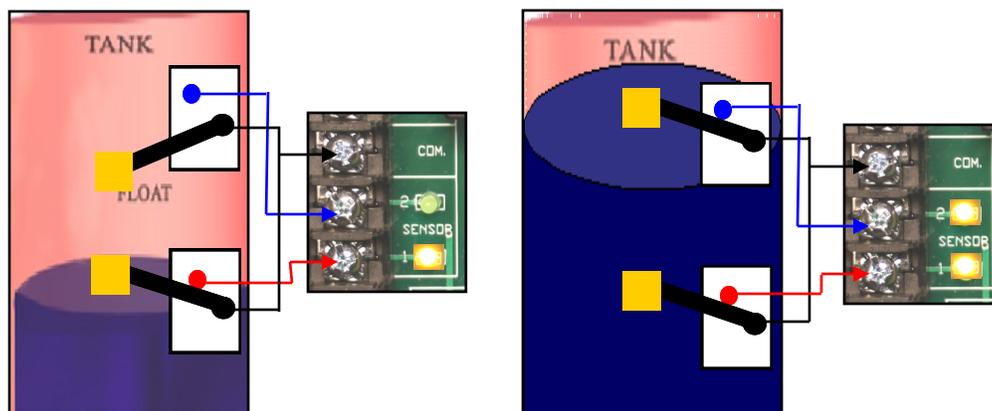


N.O. TOP AND BOTTOM FLOAT/SENSOR

Wire the sensor as per the diagram below. With this style of operation the Smart Shot's sensor 1 and 2 LED will be off when the fluid is below the bottom sensor. The status will be displayed as **NORMAL**. Both of the float/sensors are open.

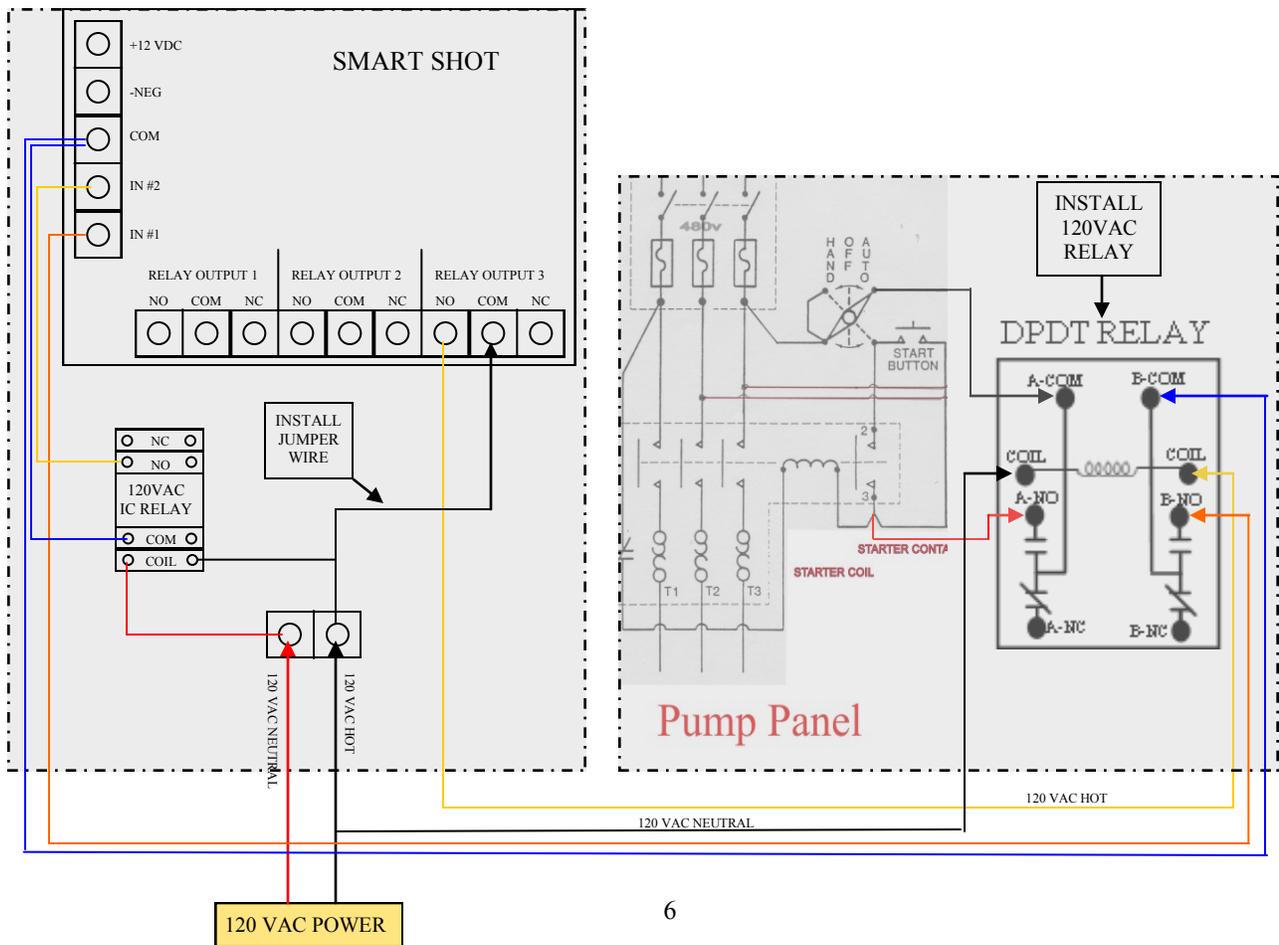
When the tanks fluid is between the float/sensors, the Smart Shot's sensor 1 LED will be on and the status will be displayed as **WARNING**. *If needed text and email alerts can be sent out to all the authorized users set to receive them at this level.*

When the tanks fluid becomes high, the Smart Shot's sensor 1 and 2 LED will be on and the status will be displayed as **CRITICAL**. This is also when the Smart Shot will send out text and email alerts to all the authorized users set to receive them.



SMART SHOT CONTROLLER PUMP WIRING INSTRUCTIONS WITH OPTIONAL POWER MONITOR RELAY

- Wire the 120v **NEUTRAL** to the first or left terminal, 120vac input of the Smart Shot.
- Wire the 120v **Hot** to the second or right terminal, 120vac input of the Smart Shot.
- Add a jumper from the second 120vac terminal to the Smart Shot's relay **COM**. Terminal.
- Wire the **N.O.** terminal on the Smart Shot to one side of the 120v relay coil of the relay that is to be installed in the pump panel. Connect the other side of the relay's coil to the 120vac Neutral of the 120vac power supply. When the Output Relay #3 is energized (*On button is pushed on the Smart Shot Online Controls*) the 120vac relay in the pump panel will be energized allowing the 480 vac to energize the starter contacts on the pump to start it. When the Output Relay #3 is de-energized (*Off button is pushed on the Smart Shot Online Controls*) the 120vac relay in the pump panel will be de-energized removing 480 vac from the starter contacts stopping the pump.
- Run a wire from the A-COM terminal on the relay that was installed in the pump panel to the Auto terminal on the Hand/Off/Auto switch. Run a wire from the A-NO terminal on that relay to the Starter Contacts going to the pump. Run a wire from the Smart Shot Sensor COM terminal to the B-COM terminal on the relay in the pump panel. Run a wire from the B-NO terminal on that relay to the SENSOR #1 terminal on the Smart Shot. This will now monitor when the pump is on or off and send text and or email alerts to all selected users when needed.
- Install 120 VAC IC relay in the Smart Shot cabinet to monitor power to the system. Run a jumper wire from the 120vac hot terminal to one side of the relay's coil and the 120vac neutral terminal to the other coil terminal for the relay. Run a wire from the COM terminal on the relay to the SENSOR COM terminal on the Smart Shot. Run a wire from the NO terminal on the relay to the SENSOR #2 terminal on the Smart Shot. When there is power to the Smart Shot the sensor will be activated. If power is lost to the Smart Shot the sensor will be deactivated and text and or email alerts will be sent to all selected users.



Smart Shot Remote/Local bypass Switch

If you are using the Smart Shot's relay output to supply power or kill power to the pivot panel, (*Hot Restart*) then use the Remote/Local switch that is supplied in your Smart Shot cabinet to allow for manual or Local operation from the pivot panel.

Connect the Remote/Local switches wires to the COM and NO relay 3 output terminals on the Smart Shot circuit board. This switch will now bypass the Smart Shot's relay (*enabling Local Control*) so you can manually or Locally apply voltage to the pivot panel. Set the Remote/Local switch to the Remote position when using the Smart Shot controller to control the pivot panel. If you do not intend to use this switch, (*if using momentary start and stop relays instead*) you can easily remove it from the cabinet.

