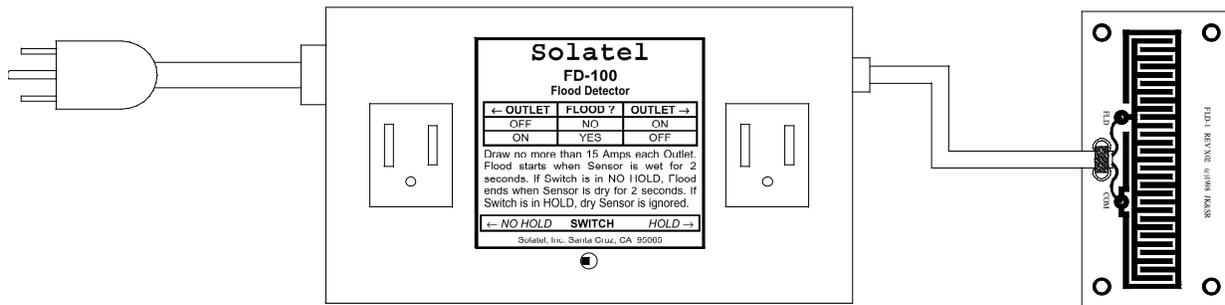


SOLATEL FD-100 FLOOD DETECTOR



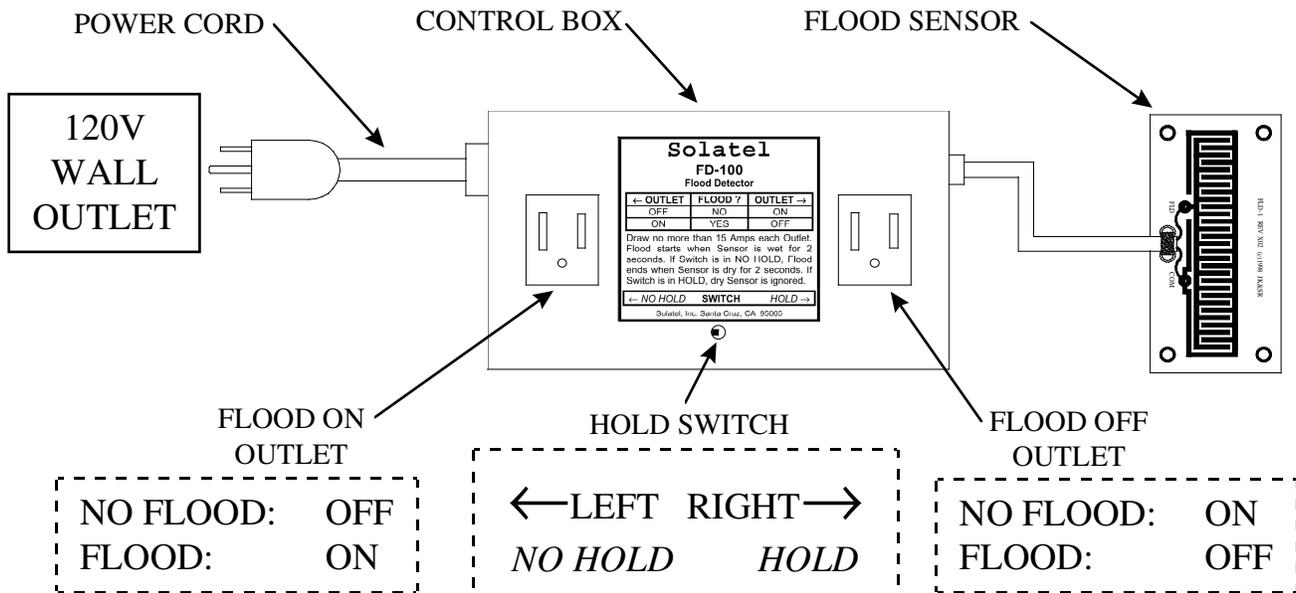
THE FD-100 FLOOD DETECTOR

The Solatel FD-100 Flood Detector is based on Solatel's proven Flood Sensor technology used in the Solatel Plant Pro. The FD-100 is used to detect a spill or overflow of water or nutrient solution. It is not used to control normal pumping such as in a flood and drain system. Many hydroponics systems are located in locations where considerable water damage can result if a pipe breaks or drain lines become plugged with roots or fallen leaves. The FD-100 system includes a Flood Sensor and a Control Box connected by a 10 ft. cable. The Flood Sensor is located on the floor near the nutrient reservoir where it will get wet in an overflow. The Control Box is located where it will not get wet and can control the desired equipment. The Control Box has two 120V outlets on it. The Flood On Outlet (left outlet) is OFF when there is no flood and turns ON when there is a flood. This could turn on an alarm in case of flood. The Flood Off Outlet (right outlet) does the opposite - ON when no flood, OFF during a flood. This could turn off a pump timer. Should overflow flooding occur, in approximately 2 seconds the FD-100 will respond and the outlets will change. The 2 second delay reduces the chance of a false alarm.

The FD-100 has a Hold Switch that selects No Hold or Hold operation after a flood has occurred. In the No Hold position, when the sensor dries out, in approximately 2 seconds the outlets change back to the No Flood condition. If the sensor gets wet later, then a new flood will be detected. However, if the switch is in the Hold position, then the dry sensor is ignored and the outlets stay in the Flood condition. The user should then correct the flood problem and move the switch from Hold to No Hold and leave it there for approximately 2 seconds. If the Flood Sensor is dry, the FD-100 will change back to the No Flood condition. Then move the switch to the Hold position to be ready to hold the next flood.

Having two outlets that operate in the opposite manner allows the use of a variety of devices. The Flood On Outlet could have an alarm plugged into it. This could be an alarm bell, flashing light or a loud radio that comes on when power is applied. It could also have a device that would try and correct the problem, such as a pump to remove the flooded liquid. The other outlet, the Flood Off Outlet, typically has devices that if turned off will reduce further flooding or some other hazard. In a flood and drain system, the pump timer could be plugged into this outlet. An electrically controlled valve that supplies water to the growing area could be turned off and hence shut off the water. Electrical equipment in the flooded area that could be damaged or present danger to users could also be turned off.

FD-100 INSTALLATION



- Mount the Flood Sensor where it will get wet if there is an overflow problem. Put it where it will not be stepped on. Place it with the shiny metal side up. It can be screwed down using the mounting holes or taped down. Don't block liquid from reaching the shiny metal pattern because this is what detects the flooding.
- Mount the Control Box where it will not get wet. Put Hold Switch in desired position. Plug the Power Cord into a 120V wall outlet or power strip. Route Power Cord where it will not get wet.
- Plug 120V devices to be controlled into the FD-100 outlets. Each outlet can provide 15A maximum. If the circuit breaker for the wall outlet also supplies current to other devices, this may reduce the available current. Use devices with the correct plug, NEMA 1-15P (ungrounded) or 5-15P (grounded). Route cords where they will not get wet.
- If more than 15A needs to be controlled, a Solatel Power Expander (PWX) can be used. Plug the PWX trigger cord into the appropriate FD-100 outlet. Plug the PWX power cord into a wall outlet that is on a different circuit breaker than the FD-100. Plug additional devices into the PWX outlets.
- The FD-100 powers up in the No Flood condition. If a flood is present, it will be detected in a few seconds. If there is a flood and then a power outage, it will take several seconds to recognize the flood again when power returns. If operation during a power outage is a requirement, consider plugging the FD-100 into an Uninterruptable Power Supply (UPS). These are commonly used for computer equipment and are readily available. The size needed depends on the total current load and maximum outage time.

Flood Sensor Specifications:

Conductivity type, threshold at approximately 1 μ Siemens.

Continuous conductivity / nonconductivity for approximately 2 seconds required for response.

Safe low voltage / low current operation, maximum of 5 volts DC and 0.000003 Amps.