

## RainSensor Series

### Bidding Specifications

Rain/Freeze Sensor(s) shall be the RainSensor Series: Wireless RainSensor, Wireless Rain/Freeze Sensor or Wired RainSensor models as manufactured under the brand name Irritrol Systems.

**Operation:** The rain and freeze sensor shall use hydroscopic fiber disks capable of expanding in the presence of moisture. These expanding disks shall have capability of triggering a switch that interrupts the common field wire return or activates the sensor within an irrigation control product. This "open" circuit prevents scheduled irrigation programs from initiating until the fiber disks dry and shrink, closing the switch and allowing programmed irrigation schedules to resume. The rain sensor shall have selectable shut-off points based on inches of rainfall with increments from  $\frac{1}{8}$ " to  $\frac{3}{4}$ ". These shut-off points may be adjusted at any time based on seasonal weather patterns or specific microclimates. The rain sensor shall be capable of operating with any Irritrol or competitive irrigation control product that interrupts programmed irrigation cycles utilizing normally open and normally closed protocol. The rain sensor and combination rain/freeze sensor shall have the ability to transmit a wireless signal from the rain or rain/freeze sensor to a receiver module that is wired into the controller. The wireless signal utilizes ultra-high frequency radio and does not require FCC licensure or notification, but shall be FCC part 15 approved. The sensor/transmitter shall have the ability to broadcast this signal for a maximum distance, equivalent to a line-of-sight transmission of 300 feet (91,4m).

**Construction:** The sensor transmitter shall be enclosed in a weather-resistant, PVC plastic case that is molded with UV inhibitors to prevent color fading and embrittlement over extended periods of time. The sensor transmitter shall have an internal and replaceable battery that is capable of operating for a period of 3-5 years. The battery shall be of the common, readily available, non proprietary type. The receiver module operates on a nominal 24 V ac in operating temperatures from -40 to 120°F consistently. The receiver module shall have an 18" length of jacketed 22-gauge color-coded wire for various control product connections. The maximum cable run from a receiver module to a controller shall not exceed limits specified by governing electrical codes. The sensor receiver shall also be enclosed in a weather-resistant, PVC plastic case with a cover of the same material. It shall have the ability to mount directly outside of a controller, then hard-wire into the controller. The sensor receiver shall have a removable cover to expose the signal strength reception from the sensor transmitter, low battery indication of the sensor transmitter, power on (indicating receiver function), and multifunction bypass button primarily used to mechanically override the sensor to resume normal irrigation cycles or manual operation. The sensor receiver shall also have the ability to maintain its status following loss of power to the receiver unit. It shall also incorporate a bypass switch that has the ability to reset automatically such that the sensor receiver cannot be permanently bypassed through operator error.

**Performance:** The sensor transmitter shall be located outdoor on a roof gutter, fence or other location that enables adequate RF communication between the transmitter and receiver (located directly adjacent to an irrigation controller) of a distance not exceeding 300 feet. Reception levels can be confirmed by reviewing the signal strength indicator on the receiver module to confirm proper functionality. Once installed the rain sensor and rain/freeze sensor shall operate automatically to interrupt and resume programmed irrigation schedules without any additional controller programming or human intervention.

The sensor modules shall also have the ability to adjust the nominal shut-off point in pre-defined increments from  $1/8$ " to  $3/4$ ". The receiver module shall be located directly adjacent to the controller, and mounting directly within metal enclosures may reduce reception quality and correct operation must be confirmed. The receiver module can be located outdoors; again in close proximity to the irrigation controller but at a distance no more than as specified in the appropriate electrical code before voltage loss will impact product performance and consistency. The rain sensor or rain/freeze sensor shall have the ability to bypass or manually over-ride the remote sensor at the receiver module. This module shall also indicate signal strength reception from the transmitter module as well as indicate when the transmitter battery requires replacement. The rain sensor shall also have an illuminated Power LED indicating connectivity to the adjacent control product.