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1.0 INTRODUCTION

Rain Master's Rainfall Sensor is an optional sensor interface for the EV2000 Central Control System. These devices allow sensor connectivity between the EV2000 Central Control Computer and Rain Master's Evolution DX2 irrigation controllers, using existing communications capability.

The sensor consists of an anodized aluminum collector funnel with a knife edge that diverts the rain water to a tipping bucket mechanism. The tipping bucket mechanism is designed that one alternate tip of the bucket occurs for each 0.01 inch of rainfall. A magnet is attached to the tipping bucket, as the bucket tips, the magnetic activates a switch. The closure of the switch is sensed by the Evolution DX2 field irrigation controller, the controller continues to accumulate each 0.01 inch of rainfall, as it occurs. Periodically the count total is requested by the EV2000 Central Control System.

Based on user defined rainfall parameters, the EV2000 Central Control System will evaluate the total rainfall accumulated; compare the count received from the Evolution DX2 field irrigation controller, to the rainfall values set by the operator and initiate appropriate system shutdown as required.

The spent water from the rainfall sensor drains out the bottom of the housing. A picture of the mechanism is depicted in Figure 1 - Rainfall Sensor Mechanism. A picture of the entire assembly is depicted in Figure 2 - Rain Sensor Assembly.



Figure 1 - Rainfall Sensor Mechanism



Figure 2 - Rain Sensor Assembly

2.0 INSTALLATION

There are special installation requirements to be considered. The devices must be mounted in an outdoor environment, in a clear and unobstructed mounting location to obtain accurate rainfall readings. Mount the rainfall sensor in an open area where rain fall can be freely collected and be measured by the device.

The rainfall sensor must be mounted in a level position and in a location free from vibration. If mast mounted, make sure the mast is properly guyed so that vibration in high wind is kept to a minimum.



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All the necessary cabling is provided as a part of the kit. The maximum cable length from the rainfall sensor to the Evolution DX2 field irrigation controller is 60 feet.

3.0 MAINTENANCE

Once per irrigation season the funnel, filter screen, and the tipping bucket mechanism should be cleaned of any debris. Examine the mechanical mechanism for wear by tipping the arm assembly; it should freely tip without binding.

There are special installation requirements to be considered. The devices must be mounted in an indoor environment, all the necessary cabling is provided as a part of the kit. The maximum serial cable length from the Ethernet Interface Device to the controller is 100 feet. Rain Master does not warranty the Ethernet Interface Devices when used outside their specified operating parameters.

Specifications

Supported Protocols	Magnetic Switch Closure
Resolution	0.01 inches
Accuracy	1.0% at 1 inch/hour or less
Maximum Bounce Settling Time	0.75 msec
Average Switch Closure Time	135 msec
Maximum Switch Rating	30 VDC @ 2 A, 115 VAC @ 1 A
Environmental	Operating Temperature 0 to 51.67°C (32 to 125°F)
Humidity Limits	0 to 100%
Cable Length	60 Feet, 2-conductor
Physical Dimensions Attachment Arm (L x H x W)	7.0 x 6.03 x 1.265 in (17.78 x 15.32 x 3.21 cm) Weight: 0.73 lbs (330g)
Physical Dimensions Rainfall Sensor (H x D)	10.125 x 6.185 in (25.72 x 15.71 cm) Weight: 2.5 lbs (1.14kg)