

# App Note



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## Connecting Multiple EtherRain Units



Multiple EtherRain-8 units can be attached to the same network to provide control of virtually unlimited number of irrigation zones. This app note shows how to set up two or three units to provide control for up to 16 to 24 valves while sharing one Rain Sensor and, optionally, one 24VAC transformer.

A Multi-Unit Connection Kit is required in order to share resources between controllers. The kit contains a rain sensor inter-connection cable and a power inter-connection cable. One kit is available for connecting 2 units and one for connecting 3 units.



### Sharing a Power Transformer

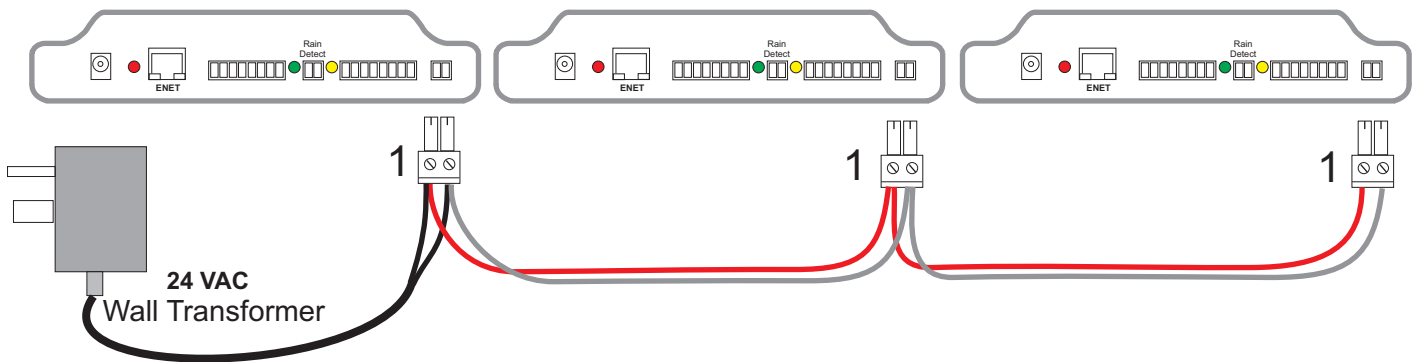
A single 24VAC power transformer can be used to provide power for multiple EtherRain controllers. When using a single transformer to power multiple units, two issues arise:

1. Transformer Power Capacity
2. Proper Wiring



Each controller is capable of running one valve at a time. If multiple controllers are in use, then it is possible for multiple valves to be open at one time (one per controller). So the power transformer must have the capacity to power multiple valves (potentially 2 or 3 valves at the same time). A standard 24VAC transformer, like the RainBird UT-1 may be able to supply enough power to open two valves at the same time, though this could be dependent on the length of the valve wires. An extra duty transformer might be required.

When connecting multiple units to the same transformer it is important to ensure that signal polarity is maintained, otherwise it is possible to short circuit the power transformer. (This will result in the power transformer warming up and the controllers failing to operate). The diagram below shows how to connect power to multiple units. NOTE: Make sure that the Red wire from the kit is connected to the same terminal on each controller.



### Sharing a Rain Sensor

One Rain Sensor can be shared by up to three units by using the rain sensor interconnection cable supplied with the multi-unit connection kit. The rain sensor interconnect cable, shown in the diagram below, provides two or three plugs. Each plug can be connected to the rain sensor input of an EtherRain controller. One plug, (the middle in the 3 Unit Kit) provides a spring-loaded connector into which the leads from the rain sensor should be inserted. To remove the leads, simply push down on the small buttons on the connector. NOTE: The cable comes pre-connected, however, if the cables are disconnected for shortening, then, when reconnecting, the Green wire must always be connected to terminal position labeled 1 in the diagram below.

