



## tN2 House Control 406

*Heat Pump & Backup, Four Zone Valves*

### Leading the way in Heat Pump Control

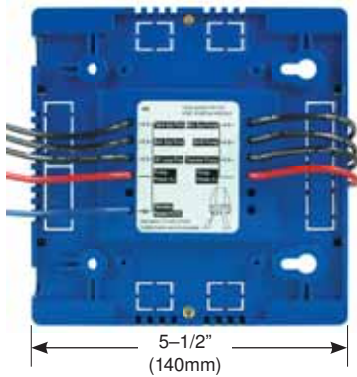
The tekmarNet<sup>®</sup>2 House Control 406 is designed to operate the equipment in a 2-pipe, single tank, hydronic heating and cooling system. It operates two heat pump stages (water-to-water or air-to-water) with a backup heat source (boiler or electric resistance). The heat pump provides either hot or chilled water to a storage tank loop and optional mixed temperature loop. For radiant heating, the water temperature is calculated using outdoor temperature reset.

For radiant cooling, the chilled water temperature is maintained at an adjustable setpoint, or is adjusted using dew-point reset with a humidity sensor. A backup boiler can provide an outdoor reset water temperature as well as domestic hot water and setpoint water temperatures. The 406 operates 4 on-board heating and cooling zones and is expandable up to 52 zones on the boiler, tank, and mix water temperatures.

### Bringing Boilers & Heat Pumps Together

- Optimize heat pump & backup operation
- Controls on/off or modulating boiler
- Intelligent heat/cool switchover
- Improves system performance
- tekmarNet<sup>®</sup> communication
- Radiant floor heating & cooling
- Domestic hot water priority
- Automatic differential for heat pump and boiler
- Outdoor temperature reset
- Indoor temperature feedback
- Zone synchronization
- Away/vacation mode
- Remote system access
- Home automation integration

**Get the entire system working together to improve system efficiency, reliability & energy savings.**



HVAC Systems



Multi-Staging



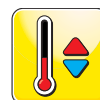
Alternative Energy



Zoning



Snow Melting



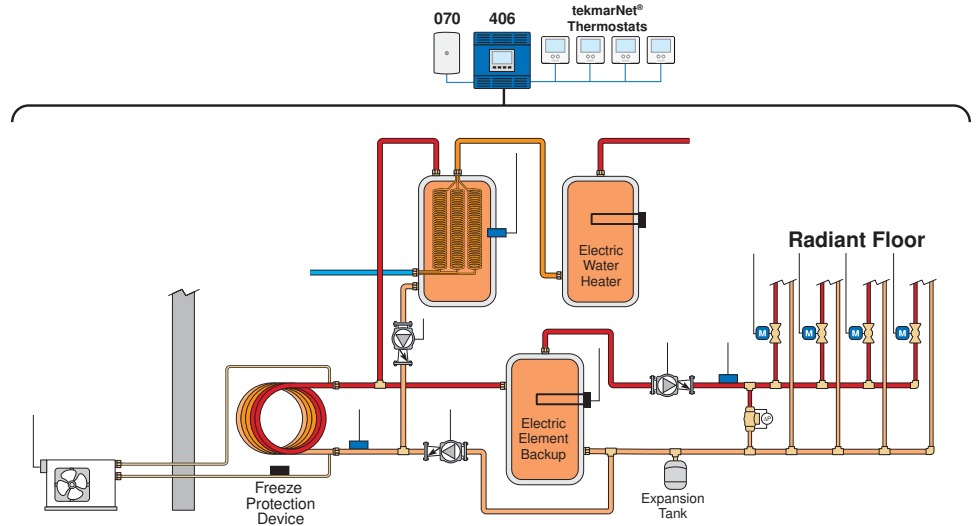
Setpoint



## Sample Application Drawings

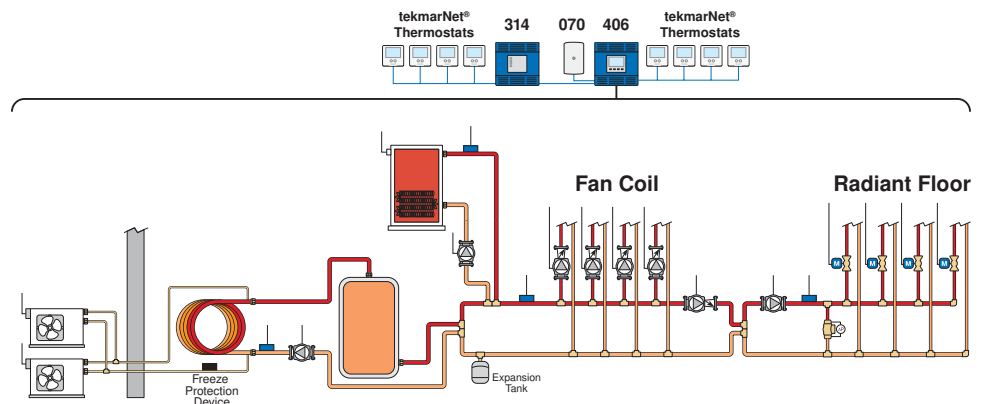
### Radiant Floor with Domestic Hot Water Preheat & Auxiliary Backup

The control operates a two-stage air-to-water heat pump to provide heating or cooling to four radiant floor zones with auxiliary backup electric element in the storage tank. Domestic hot water preheat uses the heat pump to satisfy a portion of the load.



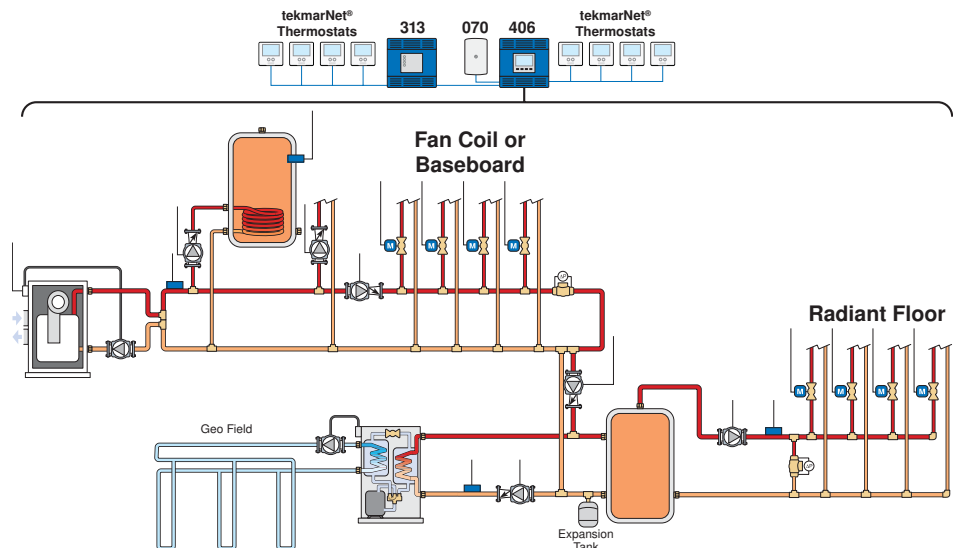
### Fan Coil & Radiant Floor with Boiler Backup

The control operates two air-to-water heat pumps with rotation to provide heating or cooling to four radiant floor zones & four fan coil zones. A boiler is used to provide backup to the heat pump.



### Radiant Floor with Boiler Backup Heating & Domestic Hot Water

The control operates a water-to-water heat pump to provide heating or cooling to four radiant floor zones. A boiler provides heat to the domestic hot water tank, fan coil or baseboard zones, as well as, backup to the radiant floor zones.



For more information on our product line,  
visit: [www.tekmarcontrols.com](http://www.tekmarcontrols.com)