

## Multi-Disciplinary

### Project Title:

**Electronically Controlled Expansion Valve for Use in a Geothermal Heating and Cooling System**

### Team Members:

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**Area: Multi-disciplinary**

**Sponsored by:** *WaterFurnace, International*

WaterFurnace International of Fort Wayne, Indiana wishes to control an electronic expansion valve (EEV) for a heat pump in a geothermal system. An electronic control board must be designed to interface with temperature and or pressure sensors located in the geothermal system. The control must use the output of the sensors to control the EEV. The valve must control the mass flow rate of the refrigerant in order to obtain a control of +/- 2°F of super heat at specified exit temperatures throughout the heat pump. Failure to meet the temperature specification could cause damage to system components.