

Auxiliary Cooling Module

Dissipating excessive heat in soils that have low thermal conductivity can be a challenge for any geothermal heat pump. The flexibility of EarthLinked's proprietary Adaptiv™ refrigerant flow controls enables a uniquely simple solution: the Auxiliary Cooling Module. The module consists of a small outside refrigerant-to-air heat exchange coil and fan. No compressor is needed because the ACM becomes part of the heat pump circuit.

When the ambient temperature is highest, the module turns on to reject a portion of the heat, known as "superheat," to the outside air. The remainder is dissipated in the earth. The module only operates for supplemental heat dissipation, and only when it is needed. The process saves more energy than it consumes to operate the small fan, thus it increases overall system efficiency.

The ACM was developed by EarthLinked Technologies as a supplemental means of rejecting heat in hot areas of the Southwestern U.S. and the Mojave Desert that have hot, dry soil conditions. It has been used in cooling the electronics of radio telescopes in the Australian desert and where outdoor temperatures have exceeded design temperature for an extended period of time in areas with soil conditions consisting of light dry soil, dry sand, organic materials or clay hard pan.

September 13, 2010

