



ThermElect Hydronic

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Electric Thermal Storage System for Central Heating

ThermElect Hydronic is an electric central heating system that uses off-peak power to store large amounts of heat and to release it during peak periods.

ThermElect Hydronic was developed by Hydro-Québec in partnership with the manufacturer, Steffes Corporation.

Central thermal storage unit

Electric thermal storage (ETS) is an effective technique for substantially reducing a customer's heating bill. This technology is new on the market and is growing in popularity among commercial, institutional and industrial customers.

ThermElect is particularly well suited to customers who use electric space heating and want to reduce their billing demand. The technology will also be attractive to customers who have chosen to convert to electric heating or who have invested in a new heating system.

One or more ThermElect units can be installed in the same building, as needed. They can be used alone to heat the building or, more often, combined with other heating systems.

Safe, reliable, cost-effective operation

ThermElect stores a large amount of heat per unit volume: 15 times that of water at 100°C. A mass of high-density ceramic bricks forms ThermElect's core. During off-peak hours or when building electricity demand is low, electric elements heat the bricks to the appropriate temperature based on the outdoor temperature and heating needs. The maximum storage temperature is 900°C.

During peak periods, power to the electric elements automatically turns off but the unit continues to meet building heating needs by releasing the heat stored during low-consumption periods. ThermElect can be storing and releasing heat simultaneously, covering heating needs 24 hours a day.

With ThermElect Hydronic, the stored heat is released into a hot-water or water/glycol heat transfer system. The temperature of the heat transfer fluid at the unit's outlet may be either constant or automatically adjusted based on the outdoor temperature, and may be as high as 85°C, suitable for most heating applications.

Built-in demand management control

ThermElect Hydronic has a built-in controller that regulates thermal storage based on the building's available off-peak energy. It is thus a turnkey solution for customers having no energy management system. It is equipped with controls to adjust the building's metered demand. The controller can also regulate up to 16 other loads in the building.

If the customer already has an energy management system, ThermElect can be controlled by that system through special input channels. The unit is also BACnet-compatible and thus can be remotely controlled by the building automation control network.

Key advantages

- > Lower billing demand
- > Easy interfacing with the existing heating system
- > Multiple heating applications (space, water, pool and make-up air)
- > Compact design
- > Stable, predictable heating costs
- > Short payback period (generally less than five years)
- > Low maintenance cost

For information:

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