



THE SMART SOLUTION FOR ENERGY EFFICIENCY

SCHOOLS



THE WATER SOURCE HEAT PUMP ADVANTAGE - FOR SCHOOLS

THE IDEAL SOLUTIONS FOR EDUCATIONAL FACILITIES

Geothermal heating and cooling systems, and the more traditional water loop heat pump systems that use a cooling tower and boiler, are intelligent choices for today's schools. They lower operating costs, and in many cases installation costs, while creating a quiet, comfortable learning environment. In addition, you get reliable, safe operation with the added benefit of individual room control.

THE GEOTHERMAL ADVANTAGE

Geothermal systems take special advantage of the consistent underground temperature of 50°F to 70°F. Using an underground loop system, they exchange energy between the school and the earth as needed for heating, cooling, and hot water generation. They require no chiller or boiler – and less ductwork and complicated controls than a VAV system. The result of this streamlined, proven design is greater cost efficiencies on four vital levels:

- Lower installation, retrofitting and expansion costs.
- Superior energy efficiency for lower operating costs.
- Lower maintenance costs.
- Longer system and component life for the lowest life cycle costs.

THE KEY TO LOWERING MAINTENANCE COSTS

Both ClimateMaster® geothermal and water loop heat pump systems are designed to be easy and affordable to maintain. Should a unit need to be shut down for service, only that classroom is affected – not the entire school, as with other systems. For routine maintenance, individual heat pump units are easy to access without disrupting classes at all.

- No single point of failure of central equipment that can shut down the entire system if it stops operating.
- No chemical or other costs associated with the prevention of scaling and bacterial growth.
- No year-round tower operation (geothermal systems only).
- No boiler to maintain (geothermal systems only).
- Convenient standard parts availability.

WATER LOOP HEAT PUMPS

With no costly chiller equipment to maintain, ClimateMaster® water loop heat pump systems reduce maintenance and personnel costs significantly. Year after year, season after season, they offer superior efficiency for less.

GEOTHERMAL HEAT PUMP SYSTEMS

The U.S. Environmental Protection Agency ranks geothermal systems as the most cost-effective space conditioning systems available. Lower operating and maintenance costs together with the systems' long life give geothermal systems the lowest life cycle cost on the market.

AFFORDABLE INSTALLATION AND RETROFITTING

ClimateMaster® geothermal systems are the affordable choice for retrofitting because of the reduced space and duct work requirements. Geothermal system installations simply eliminate these costly needs:

- Large-scale complex duct work.
- Chillers.
- Boilers.
- Operating engineers.
- Complicated controls.
- Holes in exterior walls.
- Large mechanical rooms.



| TRADITIONAL SYSTEM COMPARISONS | ANNUAL MAINTENANCE EXPENSE | ANNUAL OPERATING EXPENSE | TOTAL ANNUAL COST | INSTALLATION COST |
|---------------------------------|----------------------------|--------------------------|-------------------|-------------------|
| FAN COIL, CHILLER/BOILER 4-PIPE | .14 | 1.40 | 1.54 | \$12.00 |
| VARIABLE AIR VOLUME | .14 | .94 | 1.08 | \$9.00 |
| GEOTHERMAL HEAT PUMP | .07 | .62 | .69 | \$10.00 |
| WATER LOOP HEAT PUMP | .10 | .94 | 1.04 | \$8.00 |

PER SQUARE FOOT OF BUILDING SPACE

ClimateMaster® meets the unique needs of today's schools and educational facilities – and their students. Perfect for multi- or single story school buildings with large common areas and/or hallways, and buildings with repeating floor plans.

SAFE AND ENVIRONMENTALLY FRIENDLY

ClimateMaster® geothermal heat pump systems operate without flames or combustible gas which can release carbon dioxide or other gasses into the building's central duct system. This is particularly important in earthquake-prone regions. Because of their superior energy efficiency geothermal systems are endorsed by the U.S. Department of Energy and the Environmental Protection Agency.

Schools are also faced with the issue of indoor air quality standards that require fresh air to be introduced into classrooms at a substantial rate. ClimateMaster® systems offer solutions that economically condition 100% of the fresh air as a part of the heating and cooling system.

QUIET COMFORT - INDIVIDUAL CONTROL

ClimateMaster® systems are unsurpassed in fostering a quiet, comfortable learning environment. Simply put, they are among the quietest systems ever designed, operating smoothly and efficiently. In addition, the systems offer the ultimate in individual control with the ability to heat and cool separate classrooms simultaneously upon demand. This unique feature gives teachers the freedom to meet the comfort needs of their own classrooms. The units also provide superior dehumidification as they cool for added comfort – especially beneficial in southern states.

LONGEST LIFE ON THE MARKET

Because ClimateMaster® geothermal heat pump units are installed indoors and the loop systems are installed underground, they are not exposed to theft, vandalism or environmental conditions that can shorten the life of other systems. In addition, the heat-fused, high-density polyethylene pipe used underground is warranted for 50 years. No other heating and cooling system provides a more attractive life cycle cost.

TRUST THE EXPERTS AT CLIMATEMASTER

Lower start-up and operating costs. Quiet comfort and control. One smart solution does it all. ClimateMaster®. The intelligent choice for energy efficiency in schools.





UNIT FEATURES

| Product Series | Standard Features | | | | | | | | | | | Factory Installed Options | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------------------|-------------------------------|-------------------------|---------------|--|----------------------|--------------------------|-----|---|--|--|---------------------------|--|--------------------------------|----------------------------|--------------------|----------------------|----------------------------|--|----------------------------|-----------------------|------------------------|--------------------|----------------|------------------|-----------------|-------------------------|---------------|------------------|-----------------------------|-------------------------------------|---|---|---|
| | EarthPure® (HFC-410A) Refrigerant | Microprocessor CMM Controls * | iGate™ Advanced Control | ECM Fan Motor | Extended Range Capable Refrigerant Circuit (20°F to 120°F) | Copper Water Coil ** | Modulating Water Valve † | TXV | Dual Level Compressor Vibration Isolation | Field Convertible Discharge (Horizontal Units) | Multiple Access Panels for Installation and Service Ease | Scroll Compressors | Factory Installed Hanger Brackets (Horizontal Units) | Condensate Overflow Protection | Remote Reset at Thermostat | High Static Blower | Cupro-Nickel Coil ** | UltraQuiet (Multi) Package | Extended Entering Water Temperature Insulation *** | Auto-Flow Water Regulation | Two-Way Control Valve | Downflow Configuration | Desuperheater Coil | DDC Controller | DXM Controller * | Coated Air Coil | Internal Secondary Pump | ECM Fan Motor | ClimaDry® Reheat | Internal Service Disconnect | vFlow™ Internal Variable Water Flow | | | |
| Tranquility® 30 Two-Stage Digital (TE) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® 30 Two-Stage (TT) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® 20 Single-Stage (TS) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® High Efficiency Two-Stage (TZ) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® 22 High Efficiency Two-Stage (TY) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® High Efficiency (TR) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® 16 Compact (TC) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® Vertical Stack (TSM) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® Console (TRC) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | |
| Tranquility® Compact Belt Drive (TC) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Tranquility® Large (TL) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Tranquility® Modular Water-to-Water (TMW) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Rooftop (TRE) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Rx Energy Recovery Ventilator (ERV) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Vertical Dedicated Outdoor Air (TOV) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| Horizontal Dedicated Outdoor Air (TOH) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

Some exceptions may apply to standard features and options, consult product submittal materials to determine availability.

* Control for TO Series is DDC with modulating HGR. Control for TMW 360-600 is DDC.

** Water coil construction for TO Series and TMW 360-600 is stainless steel.

*** Standard on TMW Series.

† Extended Range = 35°F–95°F EWT.

‡ Low system pressure drop valve is a standard feature, high system pressure drop valve is optional.



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ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time for order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-405-745-6000 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products.

The management system governing the manufacture of ClimateMaster's products is ISO 9001:2008 certified.

We are a proud supporter of the Geothermal Exchange Organization - GEO. For more information visit geoexchange.org

ClimateMaster is a company of LSB Industries, New York Stock Exchange Symbol: LXU