

Guide to Heat Pump Accessories

ENERTECH GLOBAL | WHERE ENERGY MEETS TECHNOLOGY



YOUR GUIDE TO HEAT PUMP PRODUCTS

Your one-stop shop for geothermal and air-to-water heat pump needs.

FLOW CENTERS AND PUMPING SYSTEMS

Flow centers act as the connector between the ground loop field and the geothermal heat pump. Known as the “heartbeat” of the geothermal system, flow centers have one or more circulating pumps to move water or a water-based, antifreeze solution through the ground loop piping. As the fluid circulates, it absorbs or rejects heat energy to the ground. Correct flow center pump sizing is an essential step in a geothermal system design. If the solution moves too slowly through the ground loop field, energy fails to transfer efficiently to or from the ground. If the solution moves too quickly, energy is wasted.

There are two main categories of flow centers, pressurized and non-pressurized (also known as atmospheric). Pressurized flow centers are made up of one or more pumps and 3-ways valves to open and close the system for flushing and pressurizing. This flow center type requires a constant positive pressure for efficient pumping operation. Non-pressurized flow centers use the same pumps as pressurized flow centers but include a standing column of fluid in a container open to atmospheric pressure.

The container of fluid provides continuous positive pressure to the pumps for ongoing purging of air that may be trapped in the ground loop field. Flow centers are mounted inside on a wall near the geothermal heat pump, or in the case of Enertech’s unit-mounted flow center, are mounted directly on the geothermal heat pump for efficient use of space and shortened installation time.

THERMOSTATS

Thermostats are a vital piece of the heating and cooling puzzle. They measure the temperature in a space and compare it to the system’s set point using a variety of temperature-sensing components. Not all thermostats are created equal, but our heat pumps are compatible with most thermostat offerings.

ZONING CONTROLS

Zoning controls allow home and building owners to keep certain portions of their structure set at different temperatures. Each zone is typically controlled by its own thermostat or heat sensor, allowing occupants to be comfortable no matter where they are. Zoning allows unoccupied areas to go without heating or cooling or set at a higher or lower temperature for optimum energy savings, if desired. Zoning systems include a control panel, dampers, by-pass dampers (if necessary), and a dedicated transformer.

INDOOR AIR QUALITY (IAQ)

Geothermal heat pump technology improves air quality indoors because fossil fuels aren’t involved in the heating process. Home and building owners can take IAQ a step further by installing an indoor air quality system. There are two types, heat recovery ventilation (HRV) and energy recovery ventilation (ERV). HRV uses the heat from the outgoing air to pre-condition incoming fresh air, and ERV functions similarly but allows moisture transfer across the air streams so humidity levels are addressed based on the season. Enertech carries ERVs to pair with our geothermal heat pumps.



Flow Centers

Why we like them: Located in Bedford, Indiana, Geo-Flo has been building high quality products for over 30 years. Their line of pressurized and non-pressurized flow centers, HCT tanks, and other pumping system components ensure that our geothermal unit is operating at its absolute best.

RECOMMENDED PRODUCT(S)

Variable-speed pressurized and non-pressurized flow centers, Hydro-Connect Composite Buffer Tank systems



Zoning Controls

Why we like them: EWC Controls provides some of the most innovative and highest quality zoning solutions on the market. By using their damper systems, whether round, rectangular, by-pass, or retrofit, you can provide your customers with both energy savings and personalized comfort.

RECOMMENDED PRODUCT(S)

Ultra-Zone control board, dampers, by-pass dampers, retrofit dampers.



Indoor Air Quality (IAQ)

Why we like them: RenewAire offers a fantastic line of Energy Recovery Ventilators (ERVs) to provide increased indoor air quality to home and business owners alike. RenewAire ERVs help to improve people's health, cognitive function, and productivity; all while operating in an energy-efficient and cost-effective manner.

RECOMMENDED PRODUCT(S)

Variable-Speed ERV, 30-280 CFM



Thermostats

Why we like them: Emerson's line of thermostats enable home and building owners to control the temperature of their space, regardless of their location. With smart home solutions, smartphone apps, and GPS location-based settings, controlling indoor comfort has never been easier

RECOMMENDED PRODUCT(S)

Sensi Touch Wi-Fi enabled Thermostat



While system sizing varies from job to job, the components and accessories needed to install are typically the same, or at least very similar.



GEOHERMAL HEAT PUMP

In most residential forced-air installations, our YT or VT are the right fit for the job. Internal options when ordering a geothermal heat pump include:

- **Capacity/Size**
 - » Options: 2-tons to 6-tons
 - » Typical selection: 3-ton or 4-ton systems
- **Voltage**
 - » Options: Commercial or Residential
 - » Typical selection: Residential
- **Hot Water Configuration**
 - » Options: Include a desuperheater (hot water assist) or not
 - » Typical selection: Desuperheater included
- **Return Air Position**
 - » Options: Left, right, or in the case of the YT, multi.
 - » Typical selection: Left
- **Discharge Air Position**
 - » Options: Top, side, or back
 - » Typical selection: Top
- **Blower Options**
 - » Options: PSC or ECM
 - » Typical selection: ECM
- **Coax Options**
 - » Options: Copper or cupronickel
 - » Typical: Copper (cupronickel is used for open loop applications)
- **Standard**
 - » Options: To include a soft start or not
 - » Typical selection: Non-soft start

AUXILIARY HEATER

Enertech's residential geothermal heat pumps have optional auxiliary (backup) heaters. The auxiliary heaters we offer have an automatic high limit and auxiliary limit switched for over-temperature protection to keep homes, buildings, and equipment safe.

FLOW CENTER

Pressurized or non-pressurized, the flow center connects the ground loop field and the geothermal heat pump and is necessary in any installation.

HIGH DENSITY RUBBER PAD

While Enertech heat pumps are exceptionally quiet, we recommend putting a pad underneath the system to ensure the vibration from the unit doesn't radiate into the floor slab. It's also a protective mechanism in the event something happens to the floor around the unit.

FILTER

Enertech offers three filter types: electronic dynamic filters, electrostatic filters, and disposable filters. Filter selection is based on owner and installer preference along with sizing availability.

THERMOSTAT

With various thermostat options such as wi-fi thermostats and programmable and non-programmable, installers and owners can select the best option to fit their needs.

FERNOX F1 ALPHI-11 ANTIFREEZE AND PROTECTOR

Fernox F1 Alphi-11 Antifreeze and Protector is recommended with all geothermal heat pump installations to prevent corrosion and limescale formation.

FILTER RACK

The filter rack, adjustable for 1" or 2" filters, connects the heat pump to the ductwork and holds the air filter in place. It contains all components necessary for assembly and connection to the heat pump.

ZONING CONTROLS

While every project won't require zones, many home and building owners are opting for the ability to at least split their structure into two zones. If that's the case, you'll need to include zoning controls in the system build.

COMPRESSOR DEFENDER

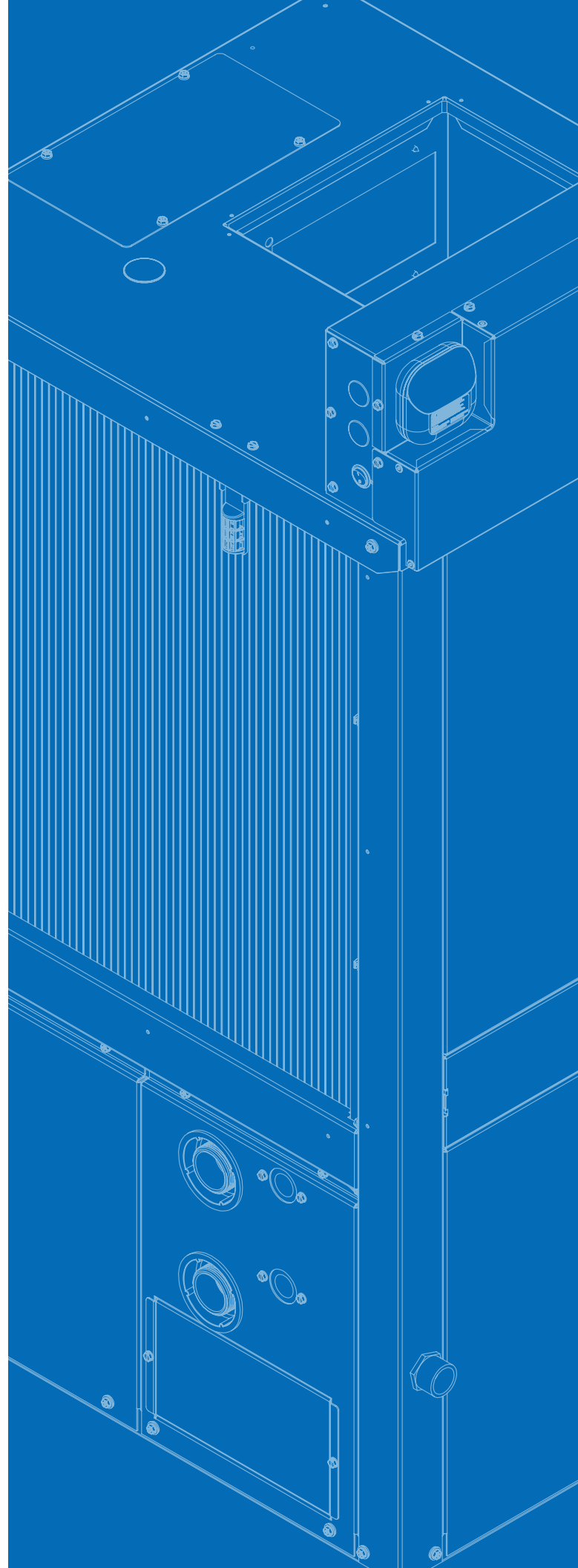
In rural areas that experience frequent electric supply issues, storms, and power surges, a Compressor Defender should be included in the installation. All Enertech units purchased with a factory installed or field installed soft start kit require a Compressor Defender. The Compressor Defender protects HVAC compressors and the electronics inside. It is designed to protect from under/over voltage conditions, surge events and system short cycling caused from AC power interruptions.

HOSE KIT

Enertech offers hose kits for easy connection of the unit to the flow center of your choice. Rubber hose kits come with 8' - 12' of hose, plus a set of fittings for connection to the flow center, and to the unit. Enertech recommends using a hose kit with the unit to provide quiet operation and an easy union in case the unit needs to be disconnected for service work.

ERV

RenewAire ERV's can be installed in both new construction and retrofit applications. The best fit is new construction, but they make sense in any tight constructed home to help control humidity/mold. It also helps meet ventilation code requirements. When installed in new construction, it's in a "central exhaust" setup. For retrofit, it's a "general exhaust" setup.



A sample list of items to order include:

- **Item: Geothermal heat pump**
 - » Item Number: YT048E11MT1CSS
 - » Item Description: 4Ton (Vertical), 2Stg, 208-230/60/1, w/ HWG, Multi-Position, Top Dis, ECM, Copper w/Factory-Installed Soft Start Kit, D/O Fittings, P&P FC Ready 4Ton (Vertical), 2Stg, 208-230/60/1, w/ HWG, Multi-Position, Top Dis, ECM, Copper w/Factory-Installed Soft Start Kit, D/O Fittings, P&P FC Ready
- **Item: Compressor defender**
 - » Item Number: CD1-024R
 - » Item Description: Compressor Defender, Intermatic, 120/208 240 VAC, 1-Phase
- **Item: Auxiliary Heater**
 - » Item Number: AHTR151D
 - » Item Description: 15kW Single Phase Internal Heater
- **Item: Pad**
 - » Item Number: AP2836R
 - » Item Description: High Density Rubber Equipment Pad, 28" x 36" x .75"
- **Item: Filter**
 - » Item Number: APAF2830C
 - » Item Description: Filter, Air 28x30x1 Pleated
- **Item: Condensate Drain Trap**
 - » Item Number: ACDT1A
 - » Item Description: EZ-Trap Condensate Drain Trap - .75 in. Kit
- **Item: Thermostat**
 - » Item Number: ATSWE42C
 - » Item Description: Emerson Sensi Touch Wi-Fi Thermostat 4ht/2cl
- **Item: Flow Center**
 - » Item Number: AGFC20
 - » Item Description: Two Pump Pressurized Flow Center – Composite Cabinet/Brass Valve – UPS26-99U-230V
- **Item: Filter Rack**
 - » Item Number: AFR2830A
 - » Item Description: Galvanized Filter Rack Kit with Assembly Instructions & Mounting Hardware (Field Configurable for 1" or 2" Filters Sold Separately), 28" x 30" x 1" or 2"
- **Item: Hose Kit**
 - » Item Number: AGHK5E
 - » Item Description: Hose Kit 1 in. Double O-Ring Elbow x Double O-Ring w/dual PT taps & plugs
- **Item: Fernox F1 Protector**
 - » Item Number: F-59700
 - » Item Description: Fernox F1 Protector, 2.6 gallon, (treats 500 gal)
- **Item: Fernox Alpha-11**
 - » Item Number: F-155738-005
 - » Item Description: Fernox Alpha-11 Propylene Glycol, w/ protector, 5 Gal

Air-to-Water Heat Pump

Enertech's Advantage air-to-water heat pump is an all-in-one, turnkey, energy-efficient solution. It's the first system in North America to include all the components necessary, which makes ordering a breeze. Additional pieces of the system, not included in a standard order, could be zoning and an ERV system.

A sample list of items to order include:

- **Item: Air-to-Water Heat Pump (Outdoor Module)**
 - » Item Number: EAV060A1AAABTSS
 - » Item Description: 5 Ton Enertech Air to Water System, Variable Speed, 208-230/60/1, BPHE, F&T AC
- **Item: Air-to-Water Heat Pump (Indoor Module)**
 - » Item Number: EME000A1AAA
 - » Item Description: Enertech Indoor Module; Electric Heat Backup, 208-230/60/1
- **Item: Hot Water Tank**
 - » Item Number: 01P002-02NN
 - » Item Description: Tank, Hot Water, 65 Gal., w/Thermistor
- **Item: Stand**
 - » Item Number: 19K104-02NN
 - » Item Description: Kit, A-W Stand Alum 12"
- **Item: Controls**
 - » Item Number: ZON-0600
 - » Item Description: HBX Zone Control
- **Item: Valves**
 - » Item Number: 28K092-01NN
 - » Item Description: Insulated Pump Kit
 - » Item Number: ATEBV5C
 - » Item Description: Taco Geo-Sentry Valve, 2-way, NC, 1" FPT

- **Item: Thermostat**
 - » Item Number: THM-0600
 - » Item Description: HBX
- **Item: Air Handler**
 - » Item Number: MPH036AIMMIS_
 - » Item Description: 3Ton Enertech, Air Handler
- **Item: Internal Heater**
 - » Item Number: AHM101MA
 - » Item Description: A/H Heater, Internal, 10kW, 1Ph, 240V
- **Item: Filter Rack**
 - » Item Number: AFR2020A
 - » Item Description: Galvanized Filter Rack Kit (Filed Configurable for 1" or 2" Filters Sold Separately), 20" x 20" x 1" or 2
- **Item: Filter**
 - » Item Number: APAF2020C
 - » Item Description: Filter, Air 20x20x1 Pleated

Additions to consider for both geothermal and air-to-water:

- **Item: ERV**
 - » Item Number: EV-Premium-L
 - » Item Description: RenewAire ERV, Variable Speed Fan, 30-280 CFM
 - » Item Number: VW106
 - » Item Description: RenewAire Wall Vent, Louvered, 6", white vinyl
 - » Item Number: PBL
 - » Item Description: RenewAire Push Button Point-of-use Timer
 - » Item Number: PTL
 - » Item Description: RenewAire Percentage Timer
- **Item: Zoning**
 - » The best option for zoning controls is dependent on project and application (forced air and/or hydronic). We recommend consulting with our design services team, particularly when zoning with the Advantage air-to-water.
 - » Item Number: AZUZC-4
 - » Item Description: 4 Zone Control Board
 - » Item Number: AZSBD-10
 - » Item Description: 10" Smart By-Pass Damper – Round
 - » Item Number: AZND-10X08
 - » Item Description: 10 x 8 Side Mount Damper

Ordering an entire system, a few accessories, or parts is seamless with our Customer Service department.

To place an order or ask a question, email our team at customerservice@enertechusa.com or give us a call at (618) 690 - 3351.

DESIGN SERVICES PROCESS

Enertech offers a custom design service for air-to-water and geothermal installations, or you can use GeoAnalyst, GeoSelect Pro or EnerSketch Pro to assist with your design of choice. If you'd like the assistance of our design team, simply fill out the design request form on the Enertech Support Site.

Here's how the process works:

- The design request form gives us relevant information to properly size the heat pump, suggest the ground loop field parameters, and select the necessary accessories.
- We take the design and craft a list of materials for the installer along with a PDF to present to the end user. The PDF includes savings information and comparisons to the other HVAC systems they may be considering. At this point, you work with the homeowner to finish the sale of the system, although your Territory Manager is happy to jump in for assistance if need be.
- Depending on volume, our design services department can complete a design within 10 business days.



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