



NEW LARGE TS SERIES BOILER, INCLUDING 480-VOLT - AVAILABLE NOVEMBER 2004

With the continued expansion of electric hydronic heating systems, Electro introduces two new TS Series larger output boilers to handle the light commercial and large residential homes.

FEATURES

- Larger physical size than our standard TS Series boiler
- ASME and CSA/UL listed
- Wall-mounted
- Vessel boasts a large 12-gallon capacity
- Outside temperature sensing
- TS Series style cabinet
- Disconnect circuit breaker included

480-VOLT THREE PHASE MODELS

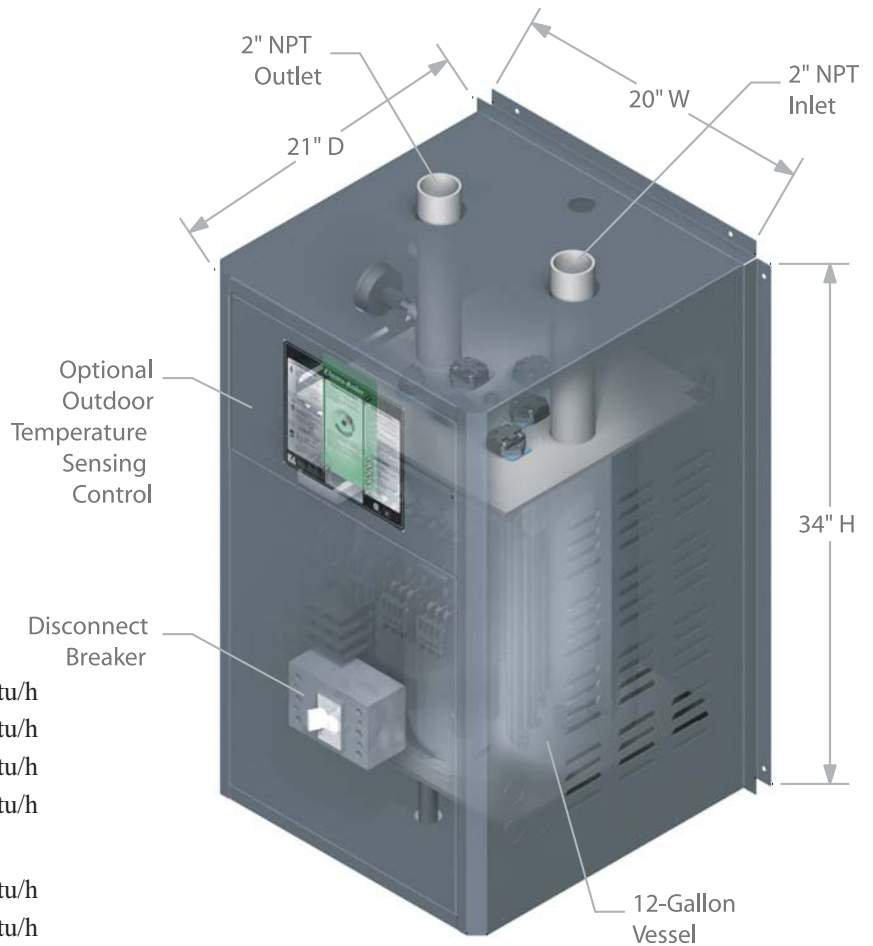
- EB-C-18-4 18 kW 61,500 Btu/h
- EB-C-27-4 27 kW 92,000 Btu/h
- EB-C-36-4 36 kW 123,000 Btu/h
- EB-C-54-4 54 kW 184,000 Btu/h

208-VOLT THREE PHASE MODELS

- EB-C-27 27 kW 92,000 Btu/h
- EB-C-40 40.5 kW 138,000 Btu/h

240-VOLT SINGLE PHASE MODELS

- EB-C-31 31.5 kW 107,500 Btu/h
- EB-C-36 36 kW 123,000 Btu/h



Hot Water Heating/Hydronics, Two Temperature Requirement

Where you have an Electro-Boiler requirement with a high temperature zone combined with low temperature radiant floor, Electro Industries now has a special controller which can be added to the TS Series boilers.

- Handled as the priority zone on multi-zone (EB-ZTS-1) or two pump (EB-Z2P) controllers
- Priority switch on, zone 1 active - TS boiler automatically changes to 150° (or selection 176°) supply water setting
- All other zones are held off
- With zone 1 satisfied or 60-minute timeout, the boiler automatically returns to the preset temperature and reacts to the other zones

Possible applications:

Low Temp	High Temp
Radiant, slab	Radiant, staple up
Radiant, slab	Baseboard
Radiant, slab	Fan coil
Radiant, slab	Water heater, side arm
Radiant, slab	Hanging unit heater (garage, shop, etc.)

Plenum Heater Installation Guide

There are multi page sheets, called APPLICATION HELPS, for both the complete Electro-Mate product line and the new HeatChoice plenum heater. These provide model number concept charts, electrical requirements, physical dimensions, basic diagrams for mechanical installation, and simplified control wiring diagrams. These HELPS sheets can often prevent phone call questions and are very helpful when first visiting a home for sizing and “decision making”. They are the basis for all of our training sessions. Specify documents EL002 and EL203.

Radiant Applications

This sheet has helped many installers select the recommended model series for various applications and zone combinations plus provides diagrams for proper pipe installations relating to the various electric rate strategies. If this is not in your notebook, request BL002.

Zone Systems

Electro-Boiler/Hydronics - the typical zone controller has three selling features: easy wiring/installation, troubleshooting LED's, and priority zone arrangement. Electro Industries' zone controllers also have these features, plus utility load control interface, but the models EB-ZTS-* and EB-ZS-* have a **major** additional feature. The zone controller board has intelligence which actually communicates to the electric boiler control board and only stages in the necessary elements for the capacity required by specific zones (or combination of zones) which are calling at any instant of time. This means the boiler is sized correctly to meet the capacity of each connected zone, eliminating relay cycling which can lead to premature failure. Example, there is no such thing as full 27 kW coming on for perhaps a 5 kW zone requirement.

All Electro-Boiler installations considering zone controller should be **matched** with Electro Industries' zone controller.

Also, the EB-ZTS-4 can be installed within the boiler cabinet, mounting space is already provided. The EB-ZS-4 can apply to non-Electro Industries or any Brand X boiler having 3 or 4 sequencers.



We have you covered, order and install Electro Industries' zone controllers.

Two-Speed Heat Pump

Several new two-stage or two-speed air source heat pumps have added another level of installation concern with these Dual Heat combinations. There have been semi-successful attempts to add a relay to the WF-LGR3.

Realizing the future these will play with upper Midwest Dual Heat, we are in the process of completing a new WarmFlo interface module. Although this is a universal module, and eventually could replace WF-LGR3 and WF-EZ3, its initial intent is to solve all known wiring and control requirements for all known heat pump manufacturers/brands. The design intent is simplified installation with terminal block points for all wires (as many as 9 for a roomstat, 8 for outdoor unit, 7 for variable furnace). It also has some setup pin jumper features to accommodate different functions relating to different manufacturers/roomstats and in some areas it is actually programmable so the basic unit can be updated for future requirements and future heat pump functions not known today. The front panel has 8 indicator lights plus the traditional Dual Heat override switch.

One of the first functional decisions and somewhat controversial issue is whether or not the Electro-Mate/WarmFlo should be activated with roomstat/heat pump stage 1. At this time there probably isn't enough experience to decide exactly how the Electro-Mate/WarmFlo should step in and preheat associated with heat pump speed 1 or speed 2. The good news for this issue is that we are attempting to design the WF-HP2 with a setup jumper labeled “2HEAT/1HEAT”. This allows flexibility for field choice and for changing the control decision as this application matures. The installation manual will have discussion points and pros and cons for selecting the operating point plus Electro Industries' recommendation.



We hope this new WF-HP2 is universal to the point of where it can be used with any room thermostat (including basic 4-wire heat/cool for all these functions), all manufacturers heat pumps (1-speed and 2-speed), and adequate variable speed furnace control.

Currently this is in pre-production status, we're offering special pricing and some installation assistance for 1 or 2 units on each manufacturer's system.

Technical Updates Sheet

Prior to the last Monticello Factory Product School, Bill put together a 4-page fold-out listing a multitude of topics and issues which many times require an additional drawing or procedure. This can also be easily requested, document XX010.

Technical Updates

Electro-GenConnect, Enhancement Upgrade

Both the semi-automatic and automatic models logic boards have been updated to include additional delays and automatic reset functions to make sure there is no hang-up or failure to go back to utility after the outage. Depending upon the circuit board version and age of the Electro-GenConnect unit, this can be as simple as updating the plug-in integrated circuit chip or cycling out your control board. Various kits and descriptive documentation are available. This is also detailed in Service Bulletins 1085 and 1086.



The versions now released:

- Semi-automatic - 1.60 dated 6-3-04, non-display or 1.70 dated 6-14-04, with display features
- Automatic - 5.20 dated 1-16-04

Coincident with this upgrade there is now a new logic board containing an additional remote communication feature which can apply to an in-house readout display or potential phone dialer. There is an information sheet on this readout display (called *GenTrac*) which may be of interest to you, request LL401.

WarmFlo/Car Accelerator Pedal

This is the title of an easy to read information article comparing a “bang/bang” normal duct heater or electric boiler to your car if it only had an on/off switch, without the accelerator pedal. The accelerator pedal is the WarmFlo controller for electric heat.

You may find this informational article adaptable to a newsletter or simply used for homeowner contacts. Request HC322.

Wisconsin Energy Code

Wisconsin minimum insulation building code which penalizes electric heat is continuing to be source of conflict for off-peak electric heat potential and savings. However, apparently it does not address or clearly define “Dual Heat”. At this point, at the local level, there seems to be some success communicating with the local inspectors allowing the gas furnace to represent the code requirement and the Electro-Mate or Mini-Boiler warm floor should not be considered. It is our understanding in some areas this approach is working, we’re not sure how effective this argument is statewide. With the Dual Energy Furnace, having it represented as a gas furnace, some think this is an easier sell.

Other states, you may want to be aware that there are political organizations out there with an agenda to penalize electric energy. Requiring a higher level of insulation for electric heat is one technique.

Electro-Mate - Manual Reset - Unpredicted or Unexplained

From last heating season experience our conclusions seems to indicate two possibilities - elements hot during power outage (blower dies, it appears the same as detecting a bad blower) or a non-purge cycle from newer gas furnaces.

The gas furnace purge cycle issue was handled by an update to all Electro Industries’ control modules delaying the W to the furnace by 1-minute. This update was early Fall 2003. Manufacturing date and ARL numbers for specific models can be requested. Earlier units can be handled by a swap-out of the DFC/WarmFlo chip or installing delay relay at the gas furnace W.

In case of the power outage, the Electro-Mate metal rod elements simply have too much “storage” heat which radiates to the 200° manual reset limit without blower running. This spring we submitted the Electro-Mate back to certification test using 250° manual reset. It passed the UL1996 specification tests and effective June 28, 2004 all production units now have 250° reset. Based on our tests this should prevent this false reset from power outage “hot” elements.

There are several solutions for earlier units:

- Change-out the hi-limit probe, EM5729
- Add audible alarm, EM-5728
- Add SOT module, SOT-EM-60, which conditions the DFC to gas furnace until someone is home to reset
- WarmFlo controller, after 1-15-04, has 90-minute pre-programmed SOT-S which automatically energizes gas furnace after 90 minutes (Version 2.23)

“Power Robbing” Room Thermostat

Typically all control products should be capable of operating with non-replaceable battery solid state thermostats. However, there have been marginal situations where the voltage will drop below operational limits on updated DFC between approximately Sept. 2003 and Jan. 2004, HeatChoice models up to approximately January 2004, and a few of the first Dual Energy Furnaces. Any units manufactured after approximately February 1st have additional circuitry to make sure this marginal condition is removed. If necessary request Field Service Bulletins 1082, 1081, and 1083.



WarmFlo, How To Order

There is often confusion on how to configure and specify WarmFlo units for Dual Heat. There is a 2-page sheet, HC323, which attempts to condense or summarize the basic ordering requirements.

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Product School

The opportunity for contractor installation/troubleshooting training seems to be building each year. This is good and we want to encourage as many meetings as possible. However, the difficult part of training schedule is that everyone would like to have this happen in February and March. We are reaching a practical limit on how many events can actually be scheduled during those prime time months.

We would encourage you to begin planning your training meetings and perhaps consider possibilities for early December and January. Contact Bill or Jon so we can compare calendars.

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Debbie Brager was honored Friday, May 21st for 25 years of service. We appreciate the great service and dedication Debbie has brought to Electro and many of our customers for the past 25 years. The next time you are placing an order with Debbie let her know you appreciate the service she has been providing to you.

Thanks for 25 years, Debbie!

Help Wanted

Heating Product Sales - Electro is looking for a salesperson for our heating product lines. Knowledge and experience in hydronic radiant, electric and gas forced air systems, low voltage wiring, and air make-up systems a plus. This position will include some traveling (2 days per week, home most nights), product training, and some product troubleshooting. If interested please send resume to: PO Box 538, Monticello, MN 55362.