



WHERE ARE ENERGY PRICES HEADING?

	1999-2000 Actual	2000-2001 Actual	2001-2002 Actual	2002-2003 Base Forecast
Natural Gas - Midwest*				
Consumption (MCF)	81.70	99.10	81.30	91.30
Avg. Price (\$/MCF)	6.69	9.54	7.33	7.67
Expenditures (\$)	546.00	945.00	596.00	700.00
Heating Oil - Midwest				
Consumption (Gallons)	675.00	813.00	673.00	653.00
Avg. Price (\$/Gallon)	1.09	1.30	1.03	1.25
Expenditures (\$)	736.00	1,057.00	693.00	816.00
Propane - Midwest*				
Consumption (Gallons)	807.00	979.00	803.00	902.00
Avg. Price (\$/Gallon)	1.02	1.37	1.10	1.19
Expenditures (\$)	824.00	1,344.00	887.00	1,076.00
Electric - Midwest				
Consumption (kW)	19,471	23,621	19,375	21,764
Avg. Price (\$/kW)	.032	.034	.034	.034
Expenditures (\$)	623.00	803.00	658.00	739.00

Notes: Consumption is based on typical per household use for the regions noted. Prices shown are national average delivered-to-household prices.

*Winter home heating fuel history/forecast. Illustrative consumer consumption, prices, and expenditures. (Source: DOE's Energy Information Administration.) LP, 90%; Nat 77%; Oil 70%.

This heating season will be an especially interesting one. With rising fossil fuel prices and our many heating equipment options we can be faced with the daunting task of choosing the most comfortable, economical and aesthetically pleasing system.

With the outlook for this winter being colder than the last unfortunately we can look forward to higher fuel prices with higher energy bills. Higher than expected crude oil prices can account for most of the projected price hikes (\$8.00 per barrel which is a 19 cents per gallon increase over last year).

The Energy Information Administration (EIA), a division of the Department of Energy (DOE), published fossil fuel data listed in the chart above. The EIA shows fossil fuel prices rising across the board; a 17% increase from \$596 to \$700 above a year ago for natural gas and a 21% increase from \$887 to \$1076 for propane.

We can ill afford to be unprepared for upcoming changes in fuel prices. Looking for stable electric energy and having the "Power of Choice" of energy sources is no doubt where customers and heating contractors benefit the most.

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Recently Added Electro-Boiler Accessories

Electro has continued to add to the accessories available to assist you in making installations easy. There are now two plumbing kits for each of the two boiler pipe sizes - **basic** and **preferred**. The preferred has enhanced air separator system with an improved piping arrangement. Also the pump kits now include a shutoff valve built into the flange plates. New literature sheet BL001 provides additional details and photos.

Technical Updates

WarmFlo News

Our goal is to keep the WarmFlo product line as stable as possible and to further build on the Generation II upgrade (June '01). However, we've recently added an enhancement allowing **lower gas furnace air volume** during warmer outdoor temperatures. Typically this relates to heat pump applications where heat pumps in heating mode can operate with lower air volume. At this time this is a special factory direct order only. Detailed installation drawings are in the process of being worked out for various manufacturers' HP/variable gas furnace combinations. Example - York Twin Single, Hot Pump.

WarmFlo Boiler - Fast Becoming Model of Choice

Comparing EB-R series and EB-W series (WarmFlo), 46% of the units purchase since April 1st are WarmFlo.

Dual Heat - Furnace Variable Speed Wiring

Both the Electro-Mate DFC models and all furnace WarmFlo models include wiring arrangements for basic variable speed gas furnace requirements. Do not overcomplicate these new systems, including 2-stage gas. See enclosed documents EH001 and HD319.

Forced Air - Zone Dampers

WarmFlo/Electro-Mate is the answer for zone duct systems. Controlling the amount of heat energy based upon outlet temperature removes any concern relating to reduced airflow, variable back pressure on blower, etc. Order EM-WU series with appropriate furnace interface module and appropriate program chip code.

Geo Heat Pump/WarmFlo - Sensing Loop Temperature

A special WarmFlo package has been put together, with some temperature reprogramming, to control the Electro-Duct stages and supply outlet temperature based upon loop water temperature. Request information sheet HC321.

SERVICE BULLETIN LIST

1079 09/24/02	WarmFlo sensor, now 50-foot max. length.
1077 05/08/02	Blower post run or shut down problem - Janitrol or Goodman gas furnace.
1076 04/16/02	Standby 5-minute safety reset - Analyzer can disable function - need chip version 2.21 and up, Analyzer version 3.1, Palm version 1.1.
1075 01/23/02	Mini-Boiler WarmFlo, EMB-W-9, stage 1 did not load control interrupt, move yellow wire.
1074 01/02/02	WarmFlo boiler, interface board (center compartment) cut diode if using standby.
1073 10/16/01	WarmFlo boiler, EBA chip disabled SOT (previously 99 minutes).
1072 10/04/01	WarmFlo boiler -23 and -27, need for phased wiring hookup.
1070A 03/14/01	WF I, persistent duct sensor problems, Analyzer error, 0°F or 30°F - chip version 3.6 corrected these issues.



Electro Industries' boilers now have ASME "H" and "R" stamp approved vessels!

As of July 18, 2002 both the Electro-Boiler™ and the Mini-Boiler™ are now approved for both residential and commercial installations.

Older Electro-Mates, New Furnace

Old Electro-Mates never die! Quite often we get calls for hookup wiring information for converting line voltage blower type original arrangement to new gas furnace. Information sheet ED108 and kit EM-OLD-B take care of these situations.

Sales Tools

New Digital Stat *(pictured on page 1)*

With the introduction of our new digital stat a few months ago, we are very pleased with the initial responses we have received from our installers and users. The average homeowner is willing to pay extra for the outdoor temperature readout. The new digital slab stat includes three sensors – indoor, outdoor, and floor/slab remote. It can be programmed for outdoor temperature offset differential and/or room temperature override.

Which boiler model is best for my application?

Many installers are asking the question whether they should use the WarmFlo EB-W-** or the Radiant EB-R-** and what is the difference? In answering this question it is important that you understand the function difference between the boiler models.

EB-R- series** has a 160° 1st level hi-limit with an internal aquastat that controls the 1st stage of the boiler. With these two functions it is important to understand that you will not use this boiler for any temperature requirements above 160°. If there is not adequate water flow or dissipation (example: small loop) this boiler will always hi-limit. Applications that are ideal: systems with 1 to 2 zones that are somewhat equal, typical radiant only systems (no temperature needs above 160°), and no backup gas/oil boiler.

EB-W- series** has a 185° 1st level hi-limit with a water sensor that constantly monitors boiler output temperature and is adjustable. No matter the water flow or number of zones calling for heat, the boiler responds accordingly. If you prefer to sense outdoor temperature to offset heating requirements this is also possible. Applications that are ideal: systems with multi-temperature needs, multi-zones (especially more than 3-4 zones and small in size), and a desire to offset boiler temperature based on outdoor temperature.

Contractor Training

Training on products and applications is a very important part of being able to put together a full functioning heating system. With many training options available, we encourage you to take advantage of the seminars that are available through Electro Industries. Please inquire on dates and availability by visiting us online at <http://www.electromn.com/deal/training.htm>.



Picture provided by Renville-Sibley, Lyon-Lincoln Cooperatives

Electro-Mate Helps

We have recently updated the Electro-Mate 6-page Application Helps. Most of you have given this document positive comments and it is a very helpful tool when trying to figure the correct model and configuration for your specific application. Request EL002.

Literature Updates

Heating Price Sheet, 0256, 6/1/2002

Controls/Disconnect Price Sheet, 0213, 6/1/2002

Replacement Parts List, 0270B, 10/18/2002

Mini-Boiler Spec. Sheet, 4-color*, BL301, 7/1/2002

Electro-Boiler Spec. Sheet, 4-color*, BL401, 7/1/2002

Boiler Accessories, BL001, 8/1/2002

Electro-Mate Helps (totally updated, all models), EL002, 9/1/2002

WarmFlo Controller, HL310, 7/19/2001

Main Lug Disconnects, 0173, 10/18/2002

Demand Monitor, display only, TC105, 8/28/2002

*Quantity requests are at \$0.38 each



Providing Comfort Through Efficient Energy Solutions

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INSTALLER/DEALER SIGN-UP OCTOBER 31ST DEADLINE



**SIGN-UP NOW FOR A CHANCE TO WIN AN
ELECTRO MINI TOOL KIT**

10 GIVEN AWAY!!

As of January 2003, Electro Industries, Inc. will have a policy regarding sale of products to the end user (homeowner). In an effort to protect our contractors from price undercutting and other issues associated with homeowner sales, we have chosen to eliminate sales to homeowners. It is and has always been our desire to get equipment installed properly and we view this policy as a method to do exactly that.

Our new web site will allow homeowners to search for an installing contractor online. If you would like to have your name listed as an approved dealer and would like to have referrals, please go to our web page under dealers and sign-up by 10/31/2002.

Hydronic Updates

New Zone Controls

Introducing our new line of zone controllers - offered in three different styles.

EB-ZC-4 With radiant systems in mind this zone control box offers a central wiring location for up to 4 zones, plus a built-in transformer to power all your zoning needs. It provides a connection point for T-stats and zone valves, along with LED indicators. Priority zone and pump relay connection.

EB-ZR-4 Same as above, with direct harness connection to our EB-R-** style boilers. Allows sizing the output of the boiler to the Btu/h needs of the individual zone. During setup, a dial switch is set specifying the radiation capacity of each zone. Eliminates the need for extra controls and aquastats.

EB-ZS-4 Designed to interface with Brand X boilers. Provides built-in load control, Brand X boiler staging, same LED and wiring connections, and priority zoning. It also is used as multiple boiler staging control. Number of stages and kW size per stage is needed for ordering.

Additional Boiler Accessories



EE-5051 Pump Relay - as a help to assist you in pump/thermostat/boiler wiring, this pump relay provides a DPDT 24-volt coil (AC or DC) switching relay that can bring both the pump and boiler on (120V, 10-amp, contact sets). It is easy to wire and nicely packaged, and includes application drawings for a number of installation possibilities.

Snow Melt



Courtesy of Rehau Inc.

With winter upon us it's easy to start thinking about the inevitable effects of winter – snow and ice. Running warm water through PEX pipe is a often used and effective means of preventing snow and ice accumulation. From carwash aprons, to sidewalks, helicopter pads, driveways, animal ramps, truck loading/unloading ramps, this can be an effective way to provide a dry and safe outdoor panel. A snowmelt installation can be simple and inexpensive using an Electro-Boiler, tubing, and slab stat. By figuring the Btu/h capacity required and “pick-up” time available, you can size your equipment to perform at its optimum.

For example, let's say we are to melt a concrete slab that is 20' x 15'. We can figure our equipment if we know the design criteria for your particular area. We'll use St. Cloud, Minnesota as an example. We can assume the outdoor design temperature of 0° F and a wind speed velocity of 10mph, we can then figure for a Class I residential system a heat requirement of 95 Btu's per square foot. With the total square footage - 300 at 95 Btu's per sq. ft., our heat loss calculation is 28,500 Btu's per hour. By looking at our Weather Bureau records we see that 90% of snowfall happens when the outdoor temperature is between 10° F and 35° F. With these facts we can conclude that we will melt snow 98% of the time, experiencing some accumulation but still melting over time. The Electro Industries' 9 kW Mini-Boiler accompanied by slab temperature thermostat control, properly sized circulator pump, and hydronic heating components could no doubt provide a safe, salt free, attractive, and convenient walkway for customers or homeowners.

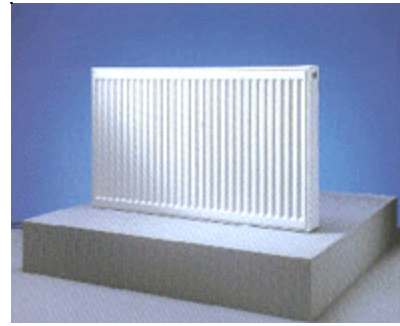
If you have further inquiries or are looking for more information on snow melting possibilities contact us via email at sales@electromn.com



Radiant Panels

By Jim Ingledue
Radiant Sales Engineer

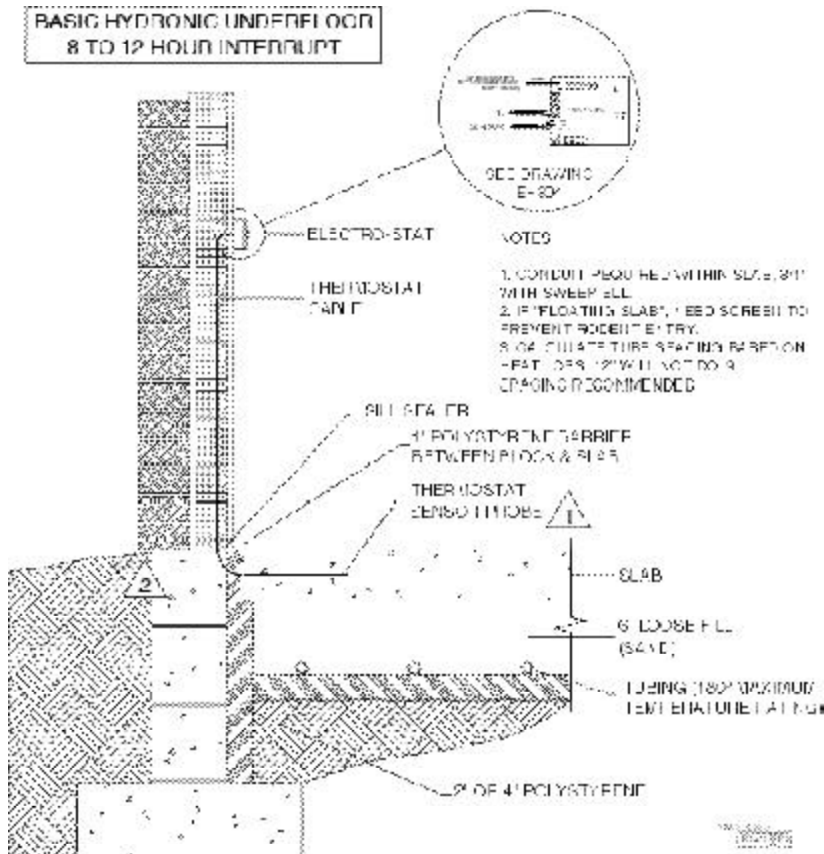
Not at all a new concept, but one that has been recently re-introduced to me, is using a newer, sleeker hydronic radiant panel as your heat emitter. If hydronic radiant under-floor heat is out of the question, this can be a viable option for supplying even, comfortable heat. Using PEX tubing that can be easily routed through a joist space or pulled into a wall can make installation fairly simple. Once routed and stubbed out your supply and return risers can be quickly adapted to your radiant panel. It is often desirable to use a manifold to tie your tubing together. The Electro-Boiler is a perfect fit as a stand alone heat source or when used in conjunction with a standby boiler. We are also given the ability to use the electric boiler as a stand alone heat source or allow for a fossil fuel standby or backup boiler. This system will not provide the magic of warm floors, but it will give you the next best step towards comfortable and efficient radiant heat. Radiant panels are available from your local plumbing and heating wholesaler or visit one manufacturers' web site at: www.buderus.net.



Buderus Panel Radiators combine art and science to deliver heating comfort at a reasonable price.

- Individual room temperature control made simple with adjustable thermostatic operators
- Pearl white enamel finish
- Wall or floor mounted
- Steel panel construction with convectors
- Outputs from 800 - 2500 Btu/h per linear foot
- Available in many different sizes
- Flow Setter included

Off-Peak Radiant Storage Using Tubing



What about putting tubes in the sand to achieve an off-peak rate?

Many electric utilities continue to offer great Off-Peak rates and, it seems to us, radiant heat installers are missing the boat by not thinking ETS with tubing installations.

Does installing radiant tubes in the sand really work for a storage system?

Yes, using our past experience plus monitoring our own building installations, both point to using the Off-Peak storage system as a great way to get low cost radiant heat plus take advantage of the low rates available.

Do tubing manufacturers still warranty their product in the sand?

Yes, we have not found any tubing manufacturer that will not warranty their product in the sand.

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