

RADIANT APPLICATIONS

Hydronics Radiant Floor, Emphasizing Electric Boiler

	<u>EMB-S</u>	<u>EMB-H</u>	<u>EB-S</u> <u>EB-MS</u>	<u>EB-WA</u> <u>EB-MA</u>	<u>EB-WO</u> <u>EB-MO</u>
1. Lower level, 1 zone - warm floor, also has forced air heating system	✓				
2. Lower level, small and large zones - warm floor, also has forced air heating system		✓			
3. Garage, residential, 1,000 sq. ft. max.	✓				
4. Lower level, large, unequal and many zones - warm floor, also has forced air heating system				✓*	
5. Slab on grade - only heating system, one zone			✓		
6. Slab on grade, unequal and many zones - only heating system				✓*	
7. Whole house, zones - all radiant, two temp. requirement				✓*	
8. Whole house hydronics, zones - air handler coil, etc. - two temp. req.					✓*
9. Large building, multi-boilers, large and many small zones - add EB-C-STG5				✓*	✓*
10. Dual heat, standby gas boiler					✓

*Suggest zone controller board with the units noted in the above chart.

Slab Stat

Sensing and controlling the system based upon radiant floor surface temperature or the concrete mass has very positive benefits. Radiant floor air stat in the same area as a forced air roomstat presents serious control problems. A remote sensing slab stat for the radiant floor removes this issue.

Remote sensing slab stat is required for storage applications.



ES-24-BR

Zone Controller*

This will simplify your wiring and make zone applications much easier. In addition to wiring convenience and troubleshooting, the Electro units include intelligence to **stage** the electric boiler based upon connected **zone capacity**.

Pumps, Actuators, Valves

EB-ZTA-1 - install within boiler cabinet

EB-ZEA-1 - with enclosure and 40VA transformer

EB-ZEA-2 - add additional 4, enclosure and 40VA

Pumps

EB-Z2P - two pumps with priority and dual temp.

Zone Valves

EB-ZTS-1 - install within boiler cabinet, encl. option

EB-ZTS-2 - add additional 4, enclosure and 40VA

EB-ZES-1/-2 - with enclosure and 40VA transformer

Two Supply Water Temperature Requirement

- Handled as the priority zone on multi-zone (EB-ZEA-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

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.)



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Tube Placement & Spacing

Depending upon the electric rate requirements, off-peak rates, length of on-peak interrupt, etc.; tube placement and spacing needs to be a prime consideration. Electro Industries has various training tools or insulation guides relating to length of interrupt and ETS storage requirements. The following is a summary of various diagrams, other installation possibilities are also available.

If application is ETS daily interrupt, boiler needs to be oversized accordingly and tube spacing may need to be 9”.

