ELECTRIC TANKLESS FOR MULTI-FAMILY HOUSING

Seisco is the only electric tankless water heater- providing *electric load shedding control*: A must for multifamily projects in order to allow adequately sized tankless units without expensive electrical service upgrades: The *Load Shedding Relay* has been provided standard for over 15 years with Seisco multifamily models. This is critical as most multifamily projects use electric resistance space heating or electric back up heating. Load shedding provides the means to prevent electric space heating from activating when domestic water heating is used, avoiding the coincident electric load. Installation is easy (see schematic). The input end is connected to the Seisco Water Heater circuit board and the output is a normally closed low voltage connection. The output is wired to the low voltage thermostat leads or energy management connection of a resistance-heating load to be controlled. Convenient access points are at the thermostat or the heater (including strip heat, forced air electric/heat pump furnace or PTAC)

Seisco adds *no net increase in electrical load* when the space heating or back up space heating is from electric resistance heaters: The electric space heating load is considered a continuous electric load and is typically greater than the Seisco calculated electric load for water heating use. Since the electric resistance-heating load has already been included, and the load-shedding relay eliminates the possibility of simultaneous use, there is no net increase in service load with the addition of the Seisco. (In any case where the Seisco's calculated load was greater, only the difference would be added). Seisco electric tankless water heaters are considered non-continuous appliances under the National Electric Code Sections 410 and 411. An appliance load that is less than 3 hours is considered non-continuous. With the diversity of hot water use in the home, the contribution from the Seisco can be calculated using NEC 220.82 or 220.83. Under these methods the Seisco load is calculated at 40% of its nameplate rating for service load contribution. The resulting calculated water heater load @ 40% is virtually always less than the space-heating load calculated at 100%. Specify an optional Load-Shedding Relay to avoid expensive upgrade in main service when electricity is used for home heating as well as water heating.

Seisco 22kW Model provides all the hot water most homes need: A 22kW electric tankless provides 129 gallons of hot water in the first hour at a 70°F temperature rise. A 50-gallon electric tank water heater only provides 64 gallons in the first hour. Tankless water heaters are a great advantage for bathtub lovers, because they can produce **enough hot water to fill more than 3 standard bathtubs each hour**. *The only consideration is that some single handle tub valves are designed for a quick fill from a tank style water heater with no way to reduce the flow, possibly* ***exceeding the capacity of the 22kW heater in the colder water times of the year resulting in lukewarm water****. So* when selecting a tub valve for use with any tankless water heater, we recommend the use of a ***valve that controls volume (flow rate) as well as the standard temperature selection. See reference below.***

Seisco Tankless do NOT require a T&P valve: Under the National Electrical Code 422-47 Water Heater Controls, Seisco electric tankless do not require the installation of a T&P valve. Local plumbing and electrical codes must be consulted for final determination.

Installation Planning Checklist:

- ☐ Specify Prewire if load calculation requires load shedding relay
- ☐ Specify Drain Pan with 1" opening
- ☐ Specify shower/tub valve with both volume and temperature control
- ☐ Specify *Water Sense* fixtures
- ☐ Consider all local plumbing and electrical codes
- ☐ Consider any special circumstances that affect heater sizing (Soaker tub/Multi-Showerheads)

Reference:

Load Shedding Relay Prewire:

- Use minimum 24 gauge – two wire cable or thermostat wire.

Example Volume & Temperature Control Tub/Shower Valves:

- American Standard R120
- Delta R10000-UNBX with 17 Series Trim
- Moen Models: 3320, 3330

Drain Pan:

- Specify a drain pan with a minimum 1" drain hole.

Plumbing:

- A single shut-off valve is required on the inlet for maintenance ease
- Standard ¾" NPT Connections

Interlock Relay Connection Instructions and Schematic:

1. With the power off to the heater, remove the cover and connect the black connector block from the relay module to the pin header at position J3 on the circuit board of the heater.
2. Find a convenient location to secure the relay inside the heater using a nylon tie wrap
3. Route the interlock wire outside the case through the inlet grommet
4. Splice and extend the wire as necessary to reach the Thermostat wire (or low voltage dry contact connection) for the device you wish to disable.
5. Typically this is the WHITE wire labeled (W), (W1), (W2) White, "Heat" (gas burner, oil burner, electric heat, (auxiliary heat on a heat pump including defrost output from the outdoor unit to activate electric heat and turn on the AUX. heat lamp). Note: some thermostats require a jumper from "W" to "Y" for heat pump operation. Alternatively connect to the energy management connection of the heater (if available). *Relay is normally closed; a normally open relay is available by special order.*
6. To activate the load shedding feature, cut the appropriate wire and connect one each of the two low voltage wires from the relay to each of the cut ends. Seal the connections to prevent short circuit.
7. To test the relay, restore power and activate the heater by opening a nearby hot water valve. After a short delay the red light should illuminate on the relay indicating that the relay interlock is active.
8. Verify all heating functions.
9. Replace the cover on the Seisco with the power off
10. Restore power to the Seisco.