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SH-INS01

Screw Plug Immersion Heaters for Liquids and Gases

All Bucan **screw plug immersion heaters** incorporate a conservative design approach, use premium quality raw materials and are made by a highly skilled staff. You can expect top performance and by following these instructions you will benefit from many years of trouble-free service.

Installation:

1. Only qualified personnel are to install **industrial electric heating equipment** and must meet all national and local codes.
2. Ensure the power connections match the **voltage, phase and wattage** data on the nameplate.
3. You must allow adequate space for thermal expansion of the heating elements.
4. Liquid heaters must be fully immersed when the heater is energized.
 - a. In the event that your system generates sludge, mount the heater above the sludge level.
 - b. In the event that scale or other matter may build up on the element surface, clean as required.
5. Gas heaters must have a positive and adequate gas flow over the elements when the heater is energized.
6. Threads must be clean, free of burrs and free of surface damage.
7. Installation in wet or outdoor locations, or subject to drips and spillage, require a Class 4 (CSA designation), NEMA 4 (UL designation) terminal box. The heater nameplate will have the suffix "R".
8. Your heater may have a built-in thermostat; this control can be either a pilot duty device or under certain load conditions be directly connected to carry the full load at the rated voltage.

Operation:

1. Before heater energization, ensure liquid heaters are fully immersed and gas heaters have the required flow rate.
2. Heaters sheath material has a maximum recommended operating temperature; do not exceed the temperature shown in Table 1.
3. Sheath material selection depends on the application; check Table 1 for sheath material recommendations.
4. A General Purpose (NEMA 1) terminal box is standard. Special terminal boxes are required for environments containing:
 - a. Water or water vapours
 - b. Oil, oil vapours or grease
 - c. Corrosive vapours or gases
 - d. Reactive or noxious gases
 - i. use the Class 4, NEMA 4 enclosure in these environments
 - e. Hazardous Locations
 - i. use the Hazloc, NEMA 7 enclosure in these environments

Maintenance:

1. Solutions may create scale and/or sludge build-up on the sheath, frequently inspect and clean as required.
2. Inspect and tighten the electrical connections as required.
3. Look for contamination inside terminal enclosure and seal properly to prevent potential leakage.

Table 1

Heater Sheath	Maximum Sheath Temp.	Used to heat
steel	750°F (400°C)	oil, hydraulic oil
copper	360°F (180°C)	water, tap/municipal only
Incoloy 800®	1500°F (815°C)	water, alkaline solutions, air, gases, radiant
Incoloy 840®	1400°F (760°C)	air, radiant
Inconel 600®	1600°F (870°C)	strong alkaline solutions, high temperature gases
stainless steel	1200°F (650°C)	De-ionized, de-mineralized, process water, some mild acids