TEMPCO Circulation Systems include a circulation heater and power control panel skid mounted in a compact package to use minimal floor space. Heater vessel is carbon steel and can be vertically or horizontally mounted.

The pre-wired panel contains a process temperature control and a manual reset over-temperature control. The Zero Cross SCR power controller provides proportional power to the heater load for precise temperature control.

### Design Features
- 150-lb Flanged Heater Sizes
- Steel Sheath Heating Elements
- NEMA 1 Terminal Housing
- Watt Density of 15 watts/in² (2.3 watts/cm²)
- NEMA 12 Control Panel with Main Fused Disconnect, Door Interlock and FM High Limit Cutout

### Catalog Heaters
Order by Part Number for catalog heaters. **Standard lead time is 6-7 weeks.**

### Standard (Non-Stock) Vertically Mounted Process Circulation Heating Systems

**Typical Heating Applications:** Medium Weight Oils • Heat Transfer Oils

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<th>KW</th>
<th>In-Out Pipe Size</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
<th>&quot;C&quot;</th>
<th>&quot;D&quot;</th>
<th>&quot;E&quot;</th>
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### Ordering Information

**Custom Engineered/Manufactured Heaters**
For sizes and ratings not listed, TEMPCO will design and manufacture a Circulation System to meet your requirements. **Please Specify** the following:

- Maximum temperature rise and operating pressure
- Inlet-Outlet size and type
- Vertical or horizontal mounting
- Element sheath material (Steel, Incoloy®, or Copper)
- Vessel material (carbon steel or stainless steel)
- Element Watt density
- Wattage (up to 600KW), Voltage, Phase

**WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

(800) 323-6859 • Email: sales@tempco.com

11-71
Rev 2 (8-18)
Floor-Mount, Double-Door Panel
This 2-zone, SCR power control unit with 8 output heater circuits in a NEMA 12 enclosure is used to control trim heaters in a paper pulp mill.

Deep Tank/Sump Immersion Heater with Electrical Enclosure

Electrical Enclosure
- NEMA 4 housing
- TEC-4100 PID Temperature Controller
- Liquid Level Sensor

Immersion Heater
- 10KW, 480V, 3-Phase Heater
- Incoloy® 800 Heating Elements
- 316 SS for all other wetted parts
- Overall Length: 172 inches

See page 11-82 for additional information.

Panel with Air Conditioner Cooling
This 304 SS, NEMA 4X control panel features a thermostat-controlled, side-mounted air conditioner that maintains safe interior temperatures for the electrical components while operating in high outdoor ambient temperatures.
Circulation Heater
- 90KW, 480V, 3-Phase Heater
- NEMA 4 Terminal Housing
- Flow Rate: 80 GPM
- Operating Pressure: 0-150 PSIG
- Maximum Operating Temperature: 300°F/148°C

Control Panel
- NEMA 4 Control Panel
- Purge & Pressurization Enclosure Protection System
- TEC-4100 PID Temperature Controller
- TEC-410 FM High Limit Control
- PPR-1800 Videographic Data Logger
- Safety Contactors for Over-Temperature, Over-Pressure and Low-Flow Conditions
- Intrinsically Safe Sensor Barriers

Fluid Circulation Heating System

Control Panel
- NEMA 12 enclosure
- TEC-4100 PID Temperature Controller
- TEC-410 FM High Limit Control
- 300A SCR Power Controller
- Six Heating Circuits
- Cooling Fan & Filter Kit

Process Heater
- 200KW, 380V, 3-Phase Heater
- NEMA 4 Terminal Housing