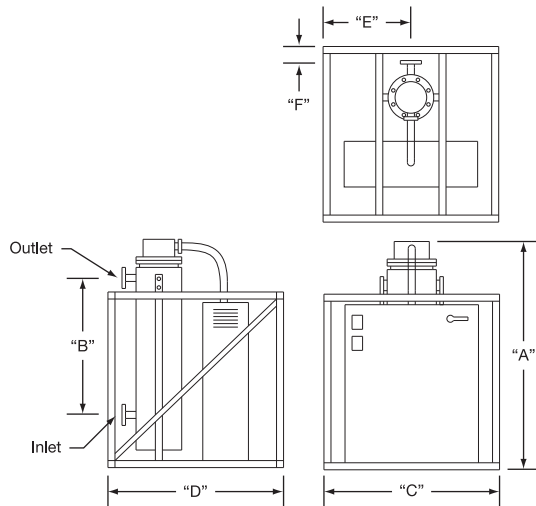


### Process Circulation Heating Systems

**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/in<sup>2</sup> (2.3 watts/cm<sup>2</sup>)
- \* NEMA 12 Control Panel with Main Fused Disconnect, Door Interlock and FM High Limit Cutout



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

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

KW	Heater Flange Size	In-Out Pipe Size	"A"		"B"		"C"		"D"		"E"		"F"		Part Number	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	240V-3Ph	480V-3Ph
10	5"	2"	46	1168	25	635	39	991	13	330	8	203	43	1092	CHS02076	CHS02077
15	5"	2"	58	1473	37	940	39	991	13	330	8	203	57	1448	CHS02078	CHS02079
20	5"	2"	71	1803	50	1270	39	991	13	330	8	203	70	1778	CHS02080	CHS02081
25	5"	2"	83	2102	62	1575	39	991	13	330	8	203	82	2083	CHS02082	CHS02083
30	8"	2½"	52	1321	25	635	42	1067	14	356	13	330	45	1143	CHS02084	CHS02085
40	8"	2½"	65	1651	37	940	42	1067	14	356	13	330	59	1499	CHS02086	CHS02087
55	8"	2½"	77	1956	50	1270	42	1067	14	356	13	330	72	1829	CHS02088	CHS02089
70	8"	2½"	90	2286	62	1575	42	1067	14	356	13	330	84	2134	CHS02090	CHS02091
90	10"	4"	108	2743	75	1905	44	1118	19	483	14	356	102	2591	CHS02092	CHS02093
110	12"	5"	96	2438	62	1575	46	1168	19	483	15	381	89	2261	—	CHS02094
150	14"	6"	97	2464	62	1575	48	1219	19	483	16	406	89	2261	—	CHS02095
180	14"	6"	110	2794	75	1905	48	1219	19	483	16	406	102	2591	—	CHS02096

**NOTE:** Dimensions are approximate

#### Ordering Information

##### Catalog Heaters

Order by Part Number for catalog heaters.

**Standard lead time is 6-7 weeks.**

##### 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:

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

**WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).



#### 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.

### Turnkey Power Control and Circulation Heating Systems Fuel Circulation Heating System

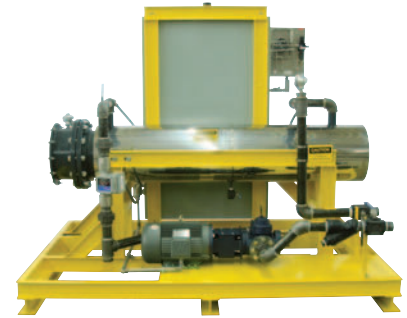


#### Control Panel

- \* 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

#### 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



#### Rear View

- \* 10HP TEFC Motor
- \* Double Positive Displacement Internal Gear Pump



### 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