A Thermolator Designed for Medical Applications

The MedLine® Thermolator TW-P Series is designed as the top-of-the-line Thermolator package. The MedLine TW-P offers extensive options for maintaining the process temperature with circulated water that has been heated or cooled to the required setpoint.

All models offer incoloy heaters; silicon carbide pump seals; pressure gauges; easy-to-use microprocessor controls and tool-free access panels for fast removal. The MedLine TW-P offers options including: process line purge, a choice of temperature control points, auto re-start capability, a variety of communications options, cool down mode, remote start/stop, stainless steel exterior panels and a disconnect switch.

**MedLine®
TW-P Thermolator**

Meets ISO Standards for Cleanroom Use

Units are available in direct injection or closed circuit cooling; single-zone and dual-zone configurations. Pump sizes to 10 Hp per zone. Heaters to 48 kW per zone. Standard process temperatures to 250°F {121°C}, with a high-temperature option which increases the unit's capacity to 300°F {149°C}.

The MedLine® TW-P Thermolator is designed to offer every premium option available. Options can be included or excluded based on your desired configuration.

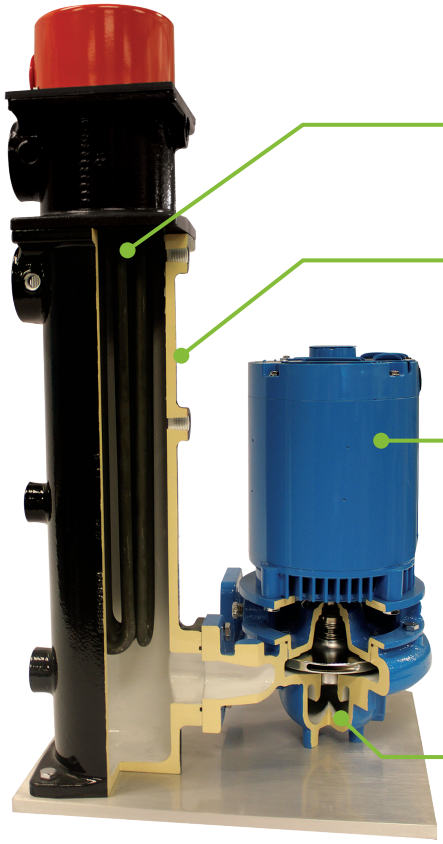
Closed circuit units keep the process fluid separated from the cooling water, eliminating cross-contamination and allowing for the use of two different fluid sources.

- **Calibrated to ISO standards**
  The MedLine® TW-P Thermolator includes a quality and regulatory compliance package aligned with ISO, ICH, and FDA requirements. The Thermolator features RAL 9003 paint or stainless exterior construction, with materials suitable for ISO 14644 cleanrooms and associated controlled environments. RTD's calibrated to ISO 17025 standards.
- **Energy savings**
  Now with a 50% increase in the pump operating envelope, an application that may have previously required a 5 Hp pump may now only require a 2 Hp pump. PLUS, today's pumps use less energy than their predecessors. Average yearly operating cost savings of the new Thermolators is $740 per unit.
- **Higher-efficiency pumps**
  More efficient pumps— 36% wire to water to be exact. Sizes from 3/4 Hp to 10 Hp, featuring silicon carbide seals and sediment traps for extended seal life. Pump volute and motor adapter have a 10 mil. powder coated Halar ECTFE finish with silicon brass impellers.
- **Incoloy heaters**
  Standard on all models, incoloy heaters resist damage from high temperature and chemicals, and are provided with a stainless steel flange plate.
- **"Casters up" warranty**
  Three full years on all MedLine Thermolator TW-P models, and a four-year warranty on the control.

Features

Built-in pressure gauges
are standard for all Conair TW Series Thermolators.

Corrosion Resistance Package
Protect components from damage with bronze or stainless external fittings, non-ferrous pump impellers, stainless steel heater flanges and corrosion-resistant coating on all interior fluid surfaces, including heater tanks and pump volute.



Incoloy heaters
minimize chemical and high temperature damage.

Three-piece cast construction
eliminates potential leak points.

High efficiency pumps
from 3/4 to 10 Hp. Industry standard cast iron pump impellers on all models. Brass impellers for fluid path.

Silicon carbide pump seals are standard on all models.

Built-in sediment trap
settles contaminants away from the pump seals.

Options

Compressed Air Purge Valve
Quickly evacuates fluid from the process circuit, allowing for faster, cleaner disconnection of the temperature controller from molds and hoses.

Modulating Cooling Valve
Fully modulating cooling valve provides consistent temperature control while eliminating water hammer issues.

Stainless Steel
Stainless steel exterior panels are available.

Stacking Rack
Save floor space by stacking TCUs two-high. Optional stainless steel construction available.

Alarm Packages
Call attention to alarm conditions with red alarm strobe light.

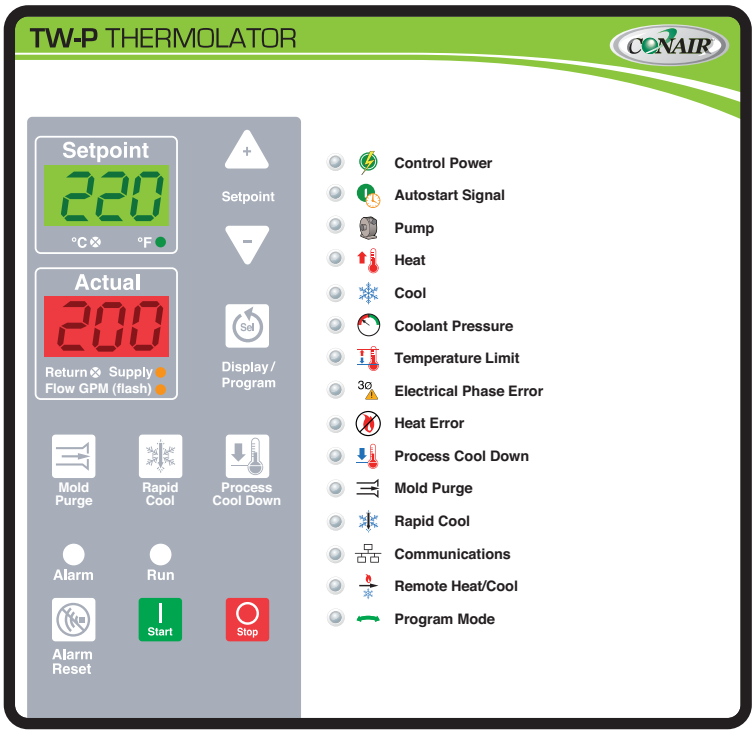
Communications Options
Autostart/Remote start, Remote dry alarm, Remote temperature sensor, 4-20mA supply output, ModBUS RTU & SPI RS-485 communication.

Closed Circuit with Two Brazed Plate Heat Exchanger Sizes
Offers greater performance, greater capacity, and less pressure drop.

300°F Construction
Used in high-temperature applications such as medical and packaging.

SSR Heater Controls

Control Features



Model	TW-P
Direct Injection	●
Closed Circuit - Common Source	○
Closed Circuit - Separate Source	○
Construction	
Standard Pump Range	3/4 to 10 Hp
Standard Heater Range	0 to 48 KW
Cast Heater /Pump	●
Incoloy Heaters	●
Silicon Carbide Seals	●
Pressure Gauges	●
250°F Setpoint Range	●
300°F Setpoint Range	○
Controls	
PID Control	●
Setpoint / Actual display	●
Password Protection	●
Modbus RTU via RS-485	○
SPI via RS-485	○
Retransmit Process Temp (4-20mA)	○
Hand Held Remote	○
Auto Restart Capability	●
High Temperature Safety	○
Mold Purge	○
Phase Detection Circuit	●
Heat Error for Heater Malfunction	●
Remote Start/Stop	●
120°F Air Purge Cancel	●
Quick Access Cool Down Mode	●
Status / Alarm Lights	
Panel Mounted Status Lights	12 LEDs
Panel Mounted Alarm Lights	5 LEDs
Audible Alarm	●
Strobe Light	○

● Standard ○ Optional

* 4-20mA

PID Control

Purge On/Off button included on control.

Phase detection indicates incorrect pump rotation or an open electrical leg.

Remote Start/Stop works with external timers or switches for convenient preheating of molds.

Specifications

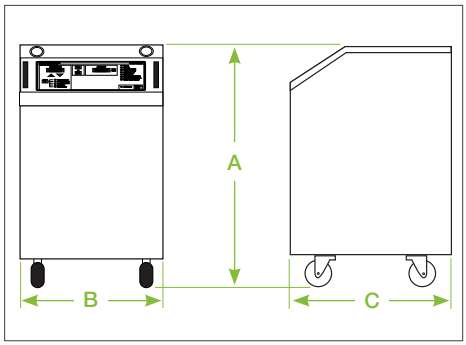
Models	TW-P (Direct Injection)‡	TW-P (Closed Circuit)§
Performance Characteristics		
Minimum setpoint temperature °F {°C}	40 {4}	40 {4}
Maximum setpoint temperature °F {°C}	250 {121}, (300 {149} optional)	250 {121}, (300 {149} optional)
Minimum operating temperature °F {°C}	Approximately 20° {11°} above the cooling water inlet temperature*	
Standard cooling valve size inches {mm}	1/4 {6.35}	3/4 {19.05} (varies)
Available pump sizes	0.75, 1, 2, 3, 5, 7.5, 10 Hp {0.56, 0.75, 1.49, 2.24, 3.73, 5.59, or 7.46 kW}	
Available heater sizes	6, 9, 12, 18, 24, 36 or 48 kW	9, 12, 18, 24, or 36 kW
Connections to/from process NPT (female)	1.50 inches	
Connections in/out cooling water NPT (female)	1.00 inches	

Pump Performance - Consult your Conair representative for pump performance characteristics at other operating points.

Pump	3/4 Hp {0.56 kW}	1 Hp {0.75 kW}	2 Hp {1.49 kW}	3 Hp {2.24 kW}	5 Hp {3.73 kW}	7.5 Hp {5.59 kW}	10 Hp {7.46 kW}
Nominal flow gpm {lpm}	50 {189}	55 {208}	75 {284}	85 {322}	100 {379}	120 {454}	150 {568}
Pressure@ nominal flow psi {kg/cm²}	20 {1.4}	25 {1.7}	30 {2.1}	32 {2.2}	46 {3.2}	56 {3.9}	65 {4.5}

Dimensions inches {mm}

Standard cabinet, not including any connections	
A - Height	28.43 {722}
B - Width	14.00 {356}
C - Depth	25.75 {654}



Shipping weight ranges lb {kg} Weights vary depending on cabinet size, options,and cooling type (DI or CC).

	Single Zone	
Pump	Minimum	Maximum
0.75 Hp {0.56 kW}	240 {109}	280 {127}
1 Hp {0.75 kW}	245 {111}	290 {132}
2 Hp {1.49 kW}	248 {113}	298 {135}
3 Hp {2.24 kW}	259 {118}	299 {136}
5 Hp {3.73 kW}	302 {137}	352 {160}
7.5 Hp {5.59 kW}	317 {144}	362 {164}
10 Hp {7.46 kW}	329 {149}	379 {172}

Total Full Load Amps per zone **

Heater	9 kW						12 kW						18 kW					
Voltage	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60
Pump size																		
0.75 Hp {0.56 kW}	25.9	25.9	15.0	15.0	12.9	10.5	33.4	33.4	19.3	19.3	16.7	13.5	48.5	48.5	28.0	28.0	24.2	19.5
1.0 Hp {0.75 kW}	26.8	26.8	15.2	15.3	13.3	10.6	34.3	34.3	19.5	19.6	17.1	13.6	49.4	49.4	28.2	28.3	24.5	19.6
2.0 Hp {1.49 kW}	28.9	28.9	16.6	16.7	14.3	11.6	36.4	36.4	20.9	21.0	18.1	14.6	51.5	51.5	29.6	29.7	25.6	20.6
3.0 Hp {2.24 kW}	31.7	31.7	13.4	18.0	15.4	12.5	39.2	39.2	22.4	22.3	19.2	15.5	54.3	54.3	31.1	31.0	26.7	21.5
5.0 Hp {3.73 kW}	36.3	36.3	20.7	18.2	17.7	14.2	43.8	43.8	25.0	22.5	21.5	17.2	58.9	58.9	33.7	31.2	29.0	23.2
7.5 Hp {5.59 kW}	42.1	42.1	24.9	20.5	20.3	16.3	49.6	49.6	29.2	24.8	24.1	19.3	64.7	64.7	37.9	33.5	31.6	25.3
10.0 Hp {7.46 kW}	50.3	50.3	28.9	24.8	24.1	18.9	57.8	57.8	33.2	29.1	27.9	21.9	72.9	72.9	41.9	37.8	35.4	27.9

Total Full Load Amps per zone **

Heater	24 kW						36 kW						48 kW					
Voltage	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60	208/3/60	230/3/60	380/3/60	400/3/50	460/3/60	575/3/60
Pump size																		
0.75 Hp {0.56 kW}	63.6	63.6	36.6	36.6	31.7	25.6	93.7	93.7	54.0	54.0	46.8	37.6	N/A	N/A	N/A	N/A	61.9	49.7
1.0 Hp {0.75 kW}	64.5	64.5	36.8	36.9	32.1	25.7	94.6	94.6	54.2	54.3	47.2	37.7	N/A	N/A	N/A	N/A	62.3	49.8
2.0 Hp {1.49 kW}	66.6	66.6	38.2	38.3	33.1	26.7	96.7	96.7	55.6	55.7	48.2	38.7	N/A	N/A	N/A	N/A	63.3	50.8
3.0 Hp {2.24 kW}	69.4	69.4	39.7	39.6	34.2	27.6	99.5	99.5	57.1	57.0	49.3	39.6	N/A	N/A	N/A	N/A	64.4	51.7
5.0 Hp {3.73 kW}	74.0	74.0	42.3	39.8	36.5	29.3	104.1	104.1	59.7	57.2	51.6	41.3	N/A	N/A	N/A	N/A	66.7	53.4
7.5 Hp {5.59 kW}	79.8	79.8	46.5	42.1	39.1	31.4	109.9	109.9	63.9	59.5	54.2	43.4	N/A	N/A	N/A	N/A	69.3	55.5
10.0 Hp {7.46 kW}	88.0	88.0	50.5	46.4	42.9	34.0	118.1	118.1	67.9	63.8	58.0	46.0	N/A	N/A	N/A	N/A	73.1	58.1

Specification Notes

* Lower operating temperatures can be obtained with larger cooling valves.

† Direct Inject (DI) cooling injects cooling water directly into the process loop upon demand.

§ Closed Circuit (CC) cooling injects cooling water into the process loop only during the initial filling or when make-up water is needed.

** FLA data for reference purposes only. Does not include any options or accessories on equipment. For full FLA detail for power circuit design of specific machines and systems, refer to the electrical diagrams of the equipment order and the nameplate applied to the machine.

Specifications may change without notice. Consult with a Conair representative for the most current information.