

# Cost Savings Starting from Purchase Date, and Continued Daily

The Thermolator® TW-P Series is designed as the top-of-the-line Thermolator package. The 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 controls and tool-free access panels for fast removal. The TW-P options include: rotary non-fused disconnect switch, C-UL508A industrial control panel construction, hand-held remote control panel, solid state relay heater controls, brazed plate heat exchangers in two sizes, 300°F {149°C} maximum operating temperature and vertical unit stacking rack.



## A Premium Control on a Premium Thermolator®

Units are available in direct injection or closed circuit cooling; single-zone and dual-zone configurations. Pump sizes to 10 Hp {7.46 kW} 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 TW-P Thermolator® is designed to offer every premium option available. Options can be included or excluded based on your desired configuration.

Dual-zone models can control two process temperatures at different locations in a mold. These units have common cooling water manifolds and electrical connections for convenience.

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.

### ▶ State-of-the-art controls

Microprocessor controls with adjustable tuning parameters offer uniform temperature control, regardless of external loading.

### ▶ Energy savings

The newest generation of TW Series Thermolators is much more efficient. Offering 50% increase in the pump operating envelope, an application that may have previously required a 5 Hp {3.73 kW} pump may now only require a 2 Hp {1.49 kW} pump.. PLUS, today's pumps use less energy than their predecessors. Average yearly operating cost savings of the new Thermolators is \$740 per unit. Conair sales can help you determine which Thermolator suits your needs.

### ▶ Higher-efficiency pumps

More efficient pumps— 36% wire to water to be exact. Sizes from 3/4 Hp to 10 Hp and feature silicon carbide seals and sediment traps for extended seal life. Cast iron impellers are standard; silicon brass impellers are optional.

### ▶ Incoloy heaters

Made to resist damage from high temperature and chemicals.

### ▶ "Casters up" warranty

Three full years on all Thermolator TW Series models.

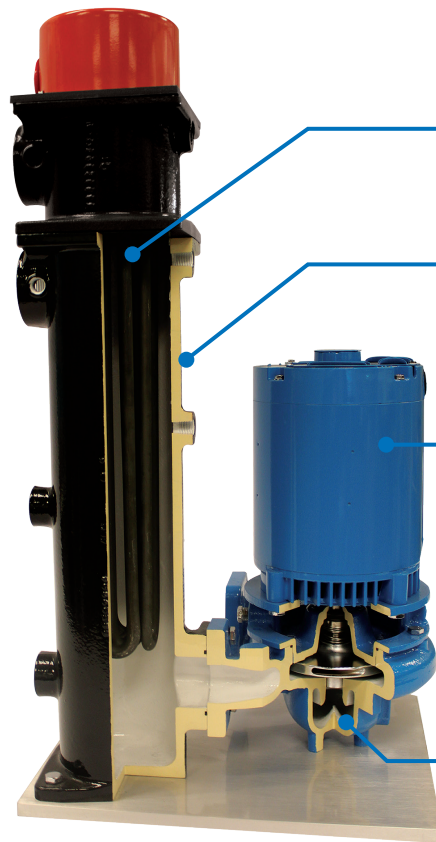


## Features



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

**Two-zone models** allow independent control of dual cooling zones with the convenience of common cooling water manifolds and electrical connections.



**Incoloy heaters** minimize chemical and high temperature damage.

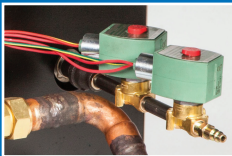
**Three-piece cast construction** eliminates potential leak points.

**High efficiency pumps** from 3/4 Hp {0.56 kW} to 10 Hp {7.46 kW}. Industry standard cast iron pump impellers on all models. Brass impellers available for non-ferrous applications.

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.

**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.



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

**Stacking Rack**  
Save floor space by stacking TCUs two-high. The stacking rack can be used only with single-zone models.



**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.

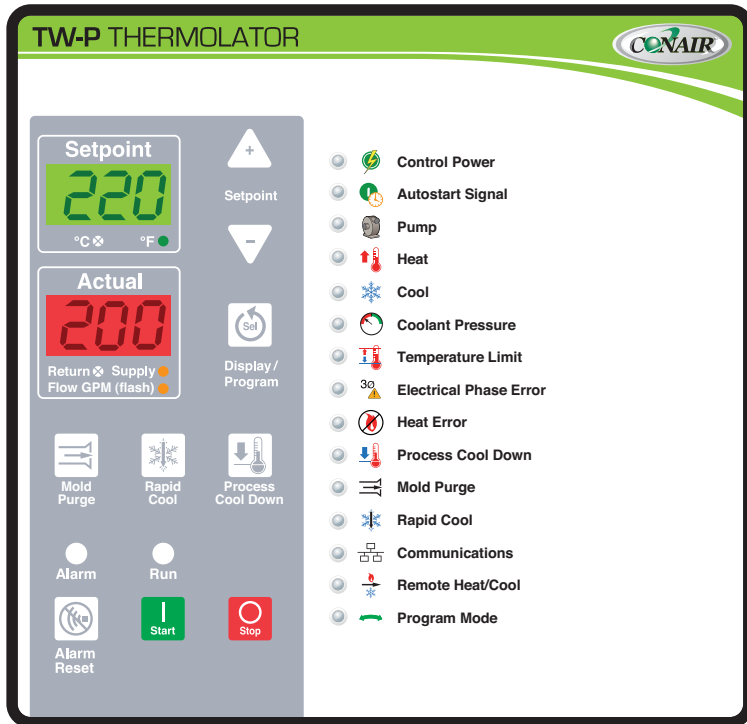
**Closed Circuit with Two Brazed Plate Heat Exchanger Sizes**  
Offers greater performance, greater capacity, and less pressure drop.

**300°F {149°C} Construction**  
Used in high-temperature applications such as medical and packaging.

**SSR Heater Controls**



# Control



The TW-P Control

## Control features on the TW-P Series Thermolators

Model	TW-P
Direct Injection	●
Closed Circuit - Common Source	○
Closed Circuit - Separate Source	○
Construction	
Standard Pump Range	3/4 to 10 Hp {0.56 to 7.45 kW}
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.

## Control features on the TW-S and TW-V Series Thermolators

Model	TW-S	TW-V
Direct Injection	●	●
Closed Circuit - Common Source		
Closed Circuit - Separate Source		
Construction		
Standard Pump Range	3/4 to 10 Hp {0.56 to 7.45 kW}	3/4 or 2 Hp {0.56 or 1.49 kW}
Standard Heater Range	0 to 48 kW	12 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	7 LEDs	1 LED
Panel Mounted Alarm Lights	3 LEDs	1 LED
Audible Alarm	●	
Strobe Light	○	



WATER TEMPERATURE CONTROLLER

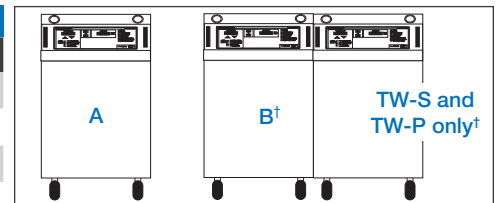
# Specifications

Models	TW-P (direct injection) <sup>‡</sup>	TW-P (closed circuit) <sup>§</sup>
<b>Performance characteristics</b>		
Minimum setpoint temperature °F {°C}	40 {4}	
Maximum setpoint temperature °F {°C}	250 {121}, (300 {149} optional <sup>†</sup> )	
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/cm <sup>2</sup> } <sup>††</sup>	20 {1.4}	25 {1.7}	30 {2.1}	32 {2.2}	46 {3.2}	56 {3.9}	65 {4.5}

Dimensions inches {mm}		
Cabinet style	Single Zone (A)	Dual Zone (B) <sup>†</sup>
Height	28.43 {722}	29.00 {734}
Width	14.00 {356}	28.34 {720}
Depth	25.75 {654}	26.06 {662}



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

Pump	Single Zone				Dual Zone			
	Minimum	Maximum	Minimum	Maximum				
0.75 Hp {0.56 kW}	240 {109}	280 {127}	491 {223}	576 {261}				
1 Hp {0.75 kW}	245 {111}	290 {132}	499 {226}	584 {265}				
2 Hp {1.49 kW}	248 {113}	298 {135}	515 {234}	590 {268}				
3 Hp {2.24 kW}	259 {118}	299 {136}	538 {244}	623 {283}				
5 Hp {3.73 kW}	302 {137}	352 {160}	629 {285}	699 {317}				
7.5 Hp {5.59 kW}	317 {144}	362 {164}	649 {294}	729 {331}				
10 Hp {7.46 kW}	329 {149}	379 {172}	683 {310}	763 {346}				

**Total full load amps per zone \*\***

Heater	9 kW						12 kW						18 kW					
	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
<b>Pump size</b>																		
0.75 Hp {0.56 kW}	26.0	15.4	13.4	10.5	33.5	19.7	17.2	13.4	48.6	28.4	24.7	19.5						
1.0 Hp {0.75 kW}	26.9	15.6	15.7	13.8	34.4	19.9	20.0	17.6	49.5	28.6	28.7	25.1	19.6					
2.0 Hp {1.49 kW}	29.0	17.0	17.1	14.8	36.5	21.3	21.4	18.6	51.6	30.0	30.1	26.1	20.6					
3.0 Hp {2.24 kW}	31.8	18.5	18.4	15.9	39.3	22.8	22.7	19.7	54.4	31.5	31.4	27.2	21.5					
5.0 Hp {3.73 kW}	36.4	21.1	18.6	18.2	43.9	25.4	22.9	22.0	59.0	34.1	31.6	29.5	23.1					
7.5 Hp {5.59 kW}	42.2	25.3	20.9	20.8	49.7	29.6	25.2	24.6	64.8	38.3	33.9	32.1	25.3					
10.0 Hp {7.46 kW}	50.4	29.3	25.2	24.6	57.9	33.6	29.5	28.4	73.0	42.3	38.2	35.9	27.9					

**Total full load amps per zone \*\***

Heater	24 kW						36 kW						48 kW					
	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
<b>Pump size</b>																		
0.75 Hp {0.56 kW}	63.6	37.0	32.2	25.5	93.8	54.4	47.3	37.5	N/A	62.3	49.6							
1.0 Hp {0.75 kW}	64.5	37.2	37.3	32.6	94.7	54.6	54.7	47.7	37.6	N/A	62.7	49.7						
2.0 Hp {1.49 kW}	66.6	38.6	38.7	33.6	96.8	56.0	56.1	48.7	38.6	N/A	63.7	50.7						
3.0 Hp {2.24 kW}	69.4	40.1	40.0	34.7	99.6	57.5	57.4	49.8	39.5	N/A	64.8	51.6						
5.0 Hp {3.73 kW}	74.0	42.7	40.2	37.0	104.2	60.1	57.6	52.1	41.1	N/A	67.1	53.2						
7.5 Hp {5.59 kW}	79.8	46.9	42.5	39.6	110.0	64.3	59.9	54.7	43.3	N/A	69.7	55.4						
10.0 Hp {7.46 kW}	88.0	50.9	46.8	43.4	118.2	68.3	64.2	58.5	45.9	N/A	73.5	58.0						

**Specification Notes**

- \* Lower operating temperatures can be obtained with larger cooling valves.
  - † Available in TW-S and TW-P models only.
  - ‡ 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.
  - ††300°F units require 65 psi minimum inlet cooling source pressure.
- Specifications may change without notice. Consult with a Conair representative for the most current information.

