

# Re-Engineered for Energy Savings; Increased Performance

The new Thermolator® TW-S Series takes everything that you loved about Conair's reliable Thermolators of the past, and improves upon performance and available options. The TW-S offers a wide variety of options and features to make maintaining the process temperature at your required setpoint simple.

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-S 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.



## Save Money Up Front and in the Long Term

Units are available in direct injection, 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-S Thermolator® was designed to be flexible for your needs. Add as many or as few options as you need.

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.

### ▶ State-of-the-art controls

Microprocessor controls offer uniform temperature control regardless of external loading. Status lights, process supply and setpoint values are displayed on the control simultaneously. Built-in features include: cool down sequence, pump running hours count, temperature deviation alarms & warnings, adjustable alarm delay times, toggle to process return temperature, alarm horn & silence switch, error diagnostics and independent start and stop buttons.

### ▶ Energy savings

This new generation of Thermolators is much more efficient. Offering a 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 determine which Thermolator suits your needs.

### ▶ Higher-efficiency pumps

More efficient pumps— 36% wire to water to be exact. Sizes from 3/4 Hp {0.56 kW} to 10 Hp {7.46 kW} 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.



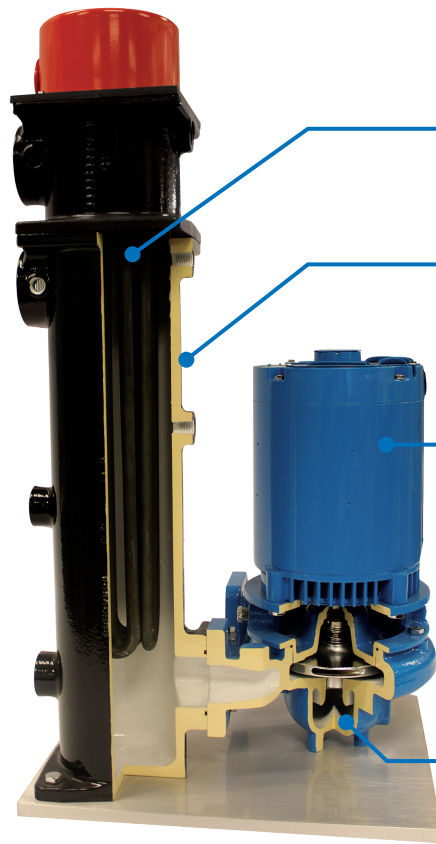
WATER TEMPERATURE CONTROLLER

## 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

### 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.



### Alarm Packages

Call attention to alarm conditions with red alarm strobe light.

### 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.

### Closed Circuit with Two Brazed Plate Heat Exchanger Sizes

Offers greater performance, greater capacity, and less pressure drop.

### Communications Options

Autostart/Remote start, Remote alarm dry contact, Remote temperature sensor.

### SSR Heater Controls

### 300°F {149°C} Construction

Used in high-temperature applications such as medical and packaging.

# Control



The TW-S Control

## Control features on the TW-S Series Thermolators

Model	TW-S
Direct Injection	●
Closed Circuit - Common Source	●
Closed Circuit - Separate Source	●
<b>Construction</b>	
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	○
<b>Controls</b>	
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	●
<b>Status / Alarm Lights</b>	
Panel Mounted Status Lights	7 LEDs
Panel Mounted Alarm Lights	3 LEDs
Audible Alarm	●
Strobe Light	○

● Standard  
○ Optional

→ PID Control

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

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

Model	TW-P	TW-V
Direct Injection	●	●
Closed Circuit - Common Source	○	○
Closed Circuit - Separate Source	○	○
<b>Construction</b>		
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	○	○
<b>Controls</b>		
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	●	○
<b>Status / Alarm Lights</b>		
Panel Mounted Status Lights	12 LEDs	1 LED
Panel Mounted Alarm Lights	5 LEDs	1 LED
Audible Alarm	●	○
Strobe Light	○	○



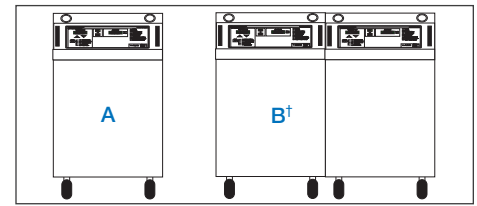
# Specifications

Models	TW-S (direct injection) <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*
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	9, 12, 18, 24, 36 or 48 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}	Single Zone (A)	Dual Zone (B) <sup>†</sup>
<b>Cabinet style</b>		
Height	28.31 {719}	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 and options.**

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 {131}	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
<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	10.6		34.4	19.9	20.0	17.6	13.5		49.5	28.6	28.7	25.1	19.6
2.0 Hp {1.49 kW}	29.0	17.0	17.1	14.8	11.6		36.5	21.3	21.4	18.6	14.6		51.6	30.0	30.1	26.1	20.6
3.0 Hp {2.24 kW}	31.8	18.5	18.4	15.9	12.5		39.3	22.8	22.7	19.7	15.4		54.4	31.5	31.4	27.2	21.5
5.0 Hp {3.73 kW}	36.4	21.1	18.6	18.2	14.1		43.9	25.4	22.9	22.0	17.0		59.0	34.1	31.6	29.5	23.1
7.5 Hp {5.59 kW}	42.2	25.3	20.9	20.8	16.3		49.7	29.6	25.2	24.6	19.2		64.8	38.3	33.9	32.1	25.3
10.0 Hp {7.46 kW}	50.4	29.3	25.2	24.6	18.9		57.9	33.6	29.5	28.4	21.8		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
<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	25.6		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	26.6		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	27.5		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	29.1		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	31.3		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	33.9		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.

§ 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 a minimum of 65 psi inlet cooling source pressure.

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

