

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 includes 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 transducers, phase monitor, modulating valve, solid state relay heater controls, Ethernet communications, and a NEW easy-to-use touch screen HMI control for intuitive operation and screen navigation. The TW-P options include: rotary non-fused disconnect switch, UL508A industrial control panel construction, brazed plate heat exchangers, 300°F {149°C} maximum operating temperature, an integrated flow meter, SmartServices, SPI communications, and vertical unit stacking rack.



TW-P Thermolator®

A Premium Touchscreen 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}.

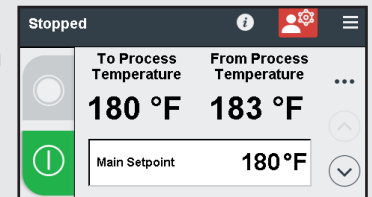
The TW-P Thermolator® is designed to offer every premium option available. Options can be included or excluded based on your desired configuration.

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, minimizing cross-contamination.

▶ State-of-the-art touch screen control

Microprocessor controls offer uniform temperature control regardless of external loading. The HMI can be modified to display two values of the operator's choice. Process supply and setpoint values are displayed on the control simultaneously. Built-in features include: Auto Cool Stop, pump running hours count, temperature deviation alarms & warnings, adjustable alarm delay times, alarm horn & silence switch, error diagnostics and simple-to-use control screens.



▶ Auto-relief - no pressure relief puddles

This auto-relief feature eliminates those puddles of water you sometimes find on the plant floor around your TCU due to the pressure relief valve opening. Pressure build-up can be caused by high incoming water pressure and thermal expansion due to the TCU warm-up process to reach the desired setpoint. This combination can cause the pressure relief valve to open and relieve pressure. The auto-relief feature on a Thermolator uses the cooling valve of the Thermolator to relieve this built-up pressure - eliminating those water puddles.

▶ 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 Transducers

are standard for all Conair TW-P Series Thermolators. This allows the pressure to display on the HMI, and allows the control to regulate the pressure as part of the Thermolator Auto-Relief feature.

Adaptive Max Setpoint

Thanks to the pressure transducers included in the TW-P, the Thermolator now can automatically change the maximum setpoint to respond to plumbing pressure and desired setpoint.

Built-in sediment trap

settles contaminants away from the pump seals.

Modulating Cooling Valve

provides consistent temperature control while eliminating water hammer issues.

Two-zone models

allow independent control of dual cooling zones with the convenience of common cooling water manifolds and electrical connections.

Communications

are standard on the TW-P Thermolator. Ethernet for Modbus TCP and OPC UA.

Incoloy heaters

minimize chemical and high temperature damage.

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 and castings available for non-ferrous applications.

Silicon carbide pump seals are standard on all models.

Solid State Relay

The TW-P Thermolator comes standard with SSRs.

5 Step Ramp/Soak

The TW-P Thermolator is programmed to work for ramp/soak applications.

Options

Corrosion Resistance Package

Protect components from damage with bronze or stainless external fittings, bronze castings, non-ferrous pump impellers, and stainless steel heater flanges.



Alarm Packages

Call attention to alarm conditions with red alarm strobe light and dry contacts.

Phase Detection Circuit

Protect your equipment from day 1.

Stacking Rack

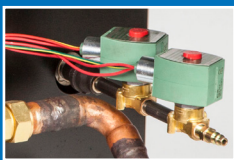
Save floor space by stacking TCUs two-high. The stacking rack can be used only with single-zone models.

Closed Circuit with Brazed Plate Heat Exchanger

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

Communications Options

SPI via RS-485
(Ethernet for ModBus TCP & OPC-UA come standard.)



Compressed Air Purge Valve (Mold Purge)

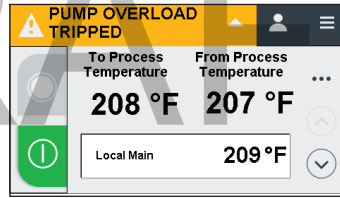
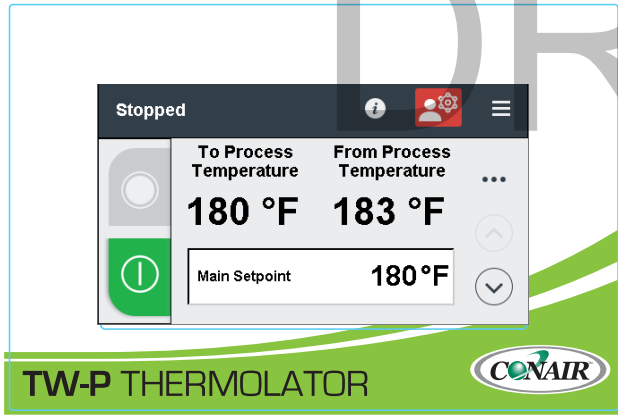
Quickly evacuates fluid from the process circuit, allowing for faster, cleaner disconnection of the temperature controller from molds and hoses.

300°F {149°C} Construction

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

WATER TEMPERATURE CONTROLLER

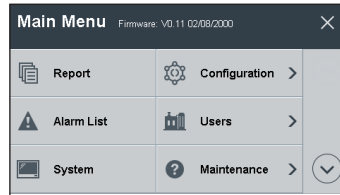
Touch Screen Control, TW-P



Alarm and Warning Banners

Easy-to-see banners appear on the screen. Warnings appear in yellow, and the Thermolator continues running.

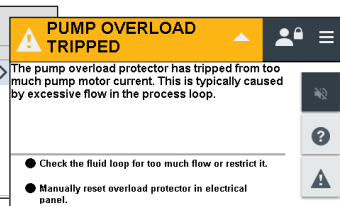
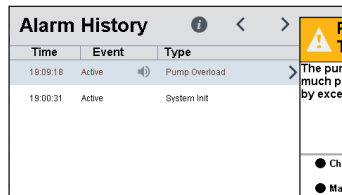
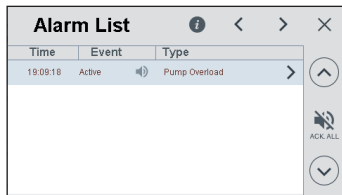
Alarms appear in red, and the machine shuts down until the condition is corrected.



Simple Menu operation

From the Menu screen, you can access:

Reports, alarms, system settings, configuration, users, maintenance, component configuration, display info, machine configuration, setup, and date/time/units.



Alarm lists, history, and details

Operators can navigate to the Alarm List and Alarm History pages. The Alarm details are specific, with recommended corrective actions.

Control features on the TW-P Series Thermolators

Model	TW-P
Direct Injection	●
Closed Circuit - Common 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 (if no transducer)	●
Pressure Transducer	●
250°F Setpoint Range	●
300°F Setpoint Range	○
Controls	
PID Control	●
Setpoint / Actual Display	●
Password Protection	●
Modbus TCP/OPC-UA	●
SPI via RS-485	○
Retransmit Process Temp (4-20mA)	○
Auto Restart Capability	●
Mold Purge	○
Phase Detection Circuit	●
Heat Error for Heater Malfunction	●
Remote Start/Stop	●
120°F Air Purge Cancel	○
Integrated flowmeter	○
Auto Cool Stop	●
Status / Alarm Lights	
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	○	○
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 (if no transducer)	●	●
Pressure Transducer	○	○
250°F Setpoint Range	●	●
300°F Setpoint Range	○	○
Controls		
PID Control	●	●
Setpoint / Actual Display	●	●
Password Protection	●	●
Modbus TCP/OPC-UA	●	●
SPI via RS-485	○	○
Retransmit Process Temp (4-20mA)	○	○
Auto Restart Capability	●	○
Mold Purge	○	○
Phase Detection Circuit	●	○
Heat Error for Heater Malfunction	●	●
Remote Start/Stop	●	○
120°F Air Purge Cancel	●	●
Integrated flowmeter	○	○
Auto Cool Stop	●	○
Status / Alarm Lights		
Audible Alarm	●	○
Strobe Light	○	○



Specifications

WATER TEMPERATURE CONTROLLER

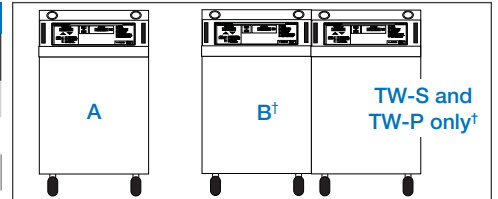
Models	TW-P (direct injection) [‡]	TW-P (closed circuit) [§]
Performance characteristics		
Minimum setpoint temperature °F {°C}	40 {4}	
Maximum setpoint temperature °F {°C}	250 {121}, (300 {149} optional ^{††})	
Minimum operating temperature °F {°C}	Approximately 20° {11°} above the cooling water inlet temperature*	
Standard cooling valve size inches {mm}	1/2 {12.7}	1/2 {12.7} (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	0, 9, 12, 18, 24, 36 or 48 kW	0, 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 ² } ^{††}	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 Small (A)	Single Zone Large (A)	Dual Zone Small (B) [†]	Dual Zone Large (B) [†]
Height	24.94 {634}	28.94 {735}	24.98 {635}	28.98 {736}
Width	14.09 {358}	14.09 {358}	28.41 {722}	28.41 {722}
Depth	24.09 {612}	26.09 {663}	24.09 {612}	26.09 {663}



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			
	460/3/60	208-230/3/60	575/3/60	400/3/50	460/3/60	208-230/3/60	575/3/60	400/3/50	460/3/60	208-230/3/60	575/3/60	400/3/50
Pump size												
0.75 Hp {0.56 kW}	12.9	25.8	10.4	14.9	16.7	33.3	13.4	19.2	24.2	48.4	19.5	27.9
1.0 Hp {0.75 kW}	13.2	24.3	10.5	16.0	17.0	34.0	13.5	20.3	24.5	49.1	19.6	29.0
2.0 Hp {1.49 kW}	14.4	28.7	11.5	17.1	18.2	36.2	14.5	21.4	25.7	51.3	20.6	30.1
3.0 Hp {2.24 kW}	15.5	31.5	12.4	18.1	19.3	39.0	15.4	22.4	26.8	54.1	21.5	31.1
5.0 Hp {3.73 kW}	17.6	36.1	14.0	18.7	21.4	43.6	17.0	22.5	28.9	58.7	23.1	30.0
7.5 Hp {5.59 kW}	20.2	41.1	15.9	23.2	24.0	48.6	18.9	27.0	31.5	63.7	25.0	34.5
10.0 Hp {7.46 kW}	23.6	N/A	18.8	N/A	27.4	N/A	21.8	N/A	34.9	N/A	27.9	N/A

Total full load amps per zone §

Heater	24 kW				36 kW				48 kW			
	460/3/60	208-230/3/60	575/3/60	400/3/50	460/3/60	208-230/3/60	575/3/60	400/3/50	460/3/60	208-230/3/60	575/3/60	400/3/50
Pump size												
0.75 Hp {0.56 kW}	31.7	63.4	25.5	36.5	46.8	N/A	37.5	N/A	61.8	N/A	49.6	N/A
1.0 Hp {0.75 kW}	32.0	64.1	25.6	37.6	47.1	N/A	37.6	N/A	62.1	N/A	49.7	N/A
2.0 Hp {1.49 kW}	33.2	66.3	26.6	38.7	48.3	N/A	38.6	N/A	63.6	N/A	50.7	N/A
3.0 Hp {2.24 kW}	34.3	69.1	27.5	39.7	49.4	N/A	39.5	N/A	64.4	N/A	51.6	N/A
5.0 Hp {3.73 kW}	36.4	73.7	29.1	37.5	51.5	N/A	41.1	N/A	66.5	N/A	53.2	N/A
7.5 Hp {5.59 kW}	39.0	78.7	31.0	42.0	54.1	N/A	43.0	N/A	69.1	N/A	55.1	N/A
10.0 Hp {7.46 kW}	42.4	N/A	33.9	N/A	57.5	N/A	45.9	N/A	72.5	N/A	58.0	N/A

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/accessories on equipment. For full FLA detail for power circuit design of specific machines/systems, refer to the electrical diagrams of the equipment order and the nameplate applied.
- ††300°F units require 65 psi minimum inlet cooling source pressure to operate at the highest temperature.

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

