

Simple Control; Loaded with Features

Today's Thermolator® TW-E Series maintains the Conair reliability you expect, and with a laundry list of available options, can be as basic or premium as you want.

The TW-E Series standard features: incoloy heaters; silicon carbide pump seals; pressure transducers and a modulating valve.

The TW-E Series options: rotary non-fused disconnect switch, solid state relay heater controls, brazed plate heat exchanger, phase detection circuit, 300°F {149°C} maximum operating temperature, mold purge, strobe alarm, alarm dry contacts, and UL 508A, Modbus-TCP, remote RTD, and vertical unit stacking rack.



TW-E Thermolator®

We build it how you want it - add the options you need.

These direct injection units are available in single-zone or 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}.

Conair has three available Thermolator models. The TW-T is a touch-screen premium TCU, loaded with standard features. The TW-E is one step down, with the most available "select the ones you need" options. The TW-B is the basic TCU - set your temperature and turn it on. For more information about the differences between these models, see the comparison chart on the 3rd page of this document.

The TW-E Thermolator® was designed to be flexible for your needs. Add as many or as few options as you need.

► 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.

► Single-zone and dual-zone configurations

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

► Incoloy heaters

Made to resist damage from high temperature and chemicals; standard on all Conair Thermolators

► "Casters up" warranty

Three full years on all Thermolator TW Series models



WATER TEMPERATURE CONTROLLER

Features

Built-in Pressure Transducers

Pressure is displayed on the HMI, and the control regulates the pressure as part of the Auto-Relief feature

Adaptive Max Setpoint

Automatically changes the maximum setpoint to respond to plumbing pressure and desired setpoint

Incoloy Heaters

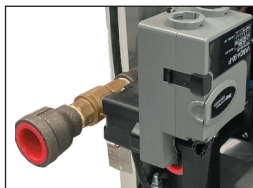
Minimizes chemical and high temperature damage

Built-in Sediment Trap

Settles contaminants away from pump seals

Modulating Cooling Valve

Eliminates water hammer issues with consistent temperature control



High Efficiency Pumps

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.

Options

TW-E

Options can be included or excluded based on the desired configuration

300°F {149°C} Construction

Used in high-temperature applications such as medical and packaging



Corrosion Resistance Package

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

Closed Circuit with Brazed Plate Heat Exchanger

Offers greater performance, greater capacity, and less pressure drop than competitor's shell and tube heat exchangers

MedLine

Includes corrosion resistance package as well as traceable calibrated RTDs

Process Supply Check Valve

Alarm Packages

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



UL508A Option

Includes UL508A rated electrical cabinet and disconnect switch

Phase Detection Circuit

Monitor incoming 3-phase electrical power for problems (reverse phase rotation, missing phase, low leg, etc.)

Stacking Rack

Save floor space by stacking TCUs two-high (Single-zone models only)



Compressed Air Purge Valve (Mold Purge)

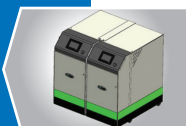
Quickly evacuates fluid from the process circuit, allowing for faster, cleaner disconnection of the temperature controller from molds and hoses

Worldwide Voltage Options

208-230V/60Hz, 400V/50Hz, 460V/60Hz, 575/60Hz

Dual-zone

Control two process temperatures at different locations in a mold; common cooling water manifolds and electrical connections for convenience



Solid-State Relay

SSRs standard. No more worn-out heater contactors!

Communications

Ethernet for Modbus-TCP



Remote RTD



Control, TW-E

WATER TEMPERATURE CONTROLLER

Easy Access
Easy access to User Parameters & Settings screens

LCD Display
Access features with illuminated control buttons

Simple On/Off Operation
Easily accessible On/Off button

Auto Restart Capability

Integrated Diagnostics
Run advanced diagnostics whether the TCU is running or off.

TW-E THERMOLATOR

CONAIR

Control Features on the TW-E Series Thermolators

Model	TW-E
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	
Pressure Transducer	●
Solid State Heater Relays (SSRS)	○
Controls	
PID Control	●
Setpoint / Actual Display	●
Password Protection	
Modbus-RTU via RS-485	●
Modbus-TCP via Ethernet	○
SPI RS-485 Interface	
OPC-UA via Ethernet	
Retransmit Process Temp (0-10 VDC)	●
Auto Restart Capability	●
Mold Purge (Factory Installed)	○
Phase Detection Circuit	○
Choice of Control Points	●
Auto Cool Stop	●
Status / Alarm Lights	
Audible Alarm	●
Strobe Light	○
Alarm Dry Contacts	○
Remote RTD Support	●
Trending	

- Standard
○ Optional

Purge On/Off button included on control.

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

Control temperature based on temperature at process supply or return points, or an average of the two points.

Control Features on the TW-T and TW-B Series Thermolators

Model	TW-T	TW-B
Direct Injection	●	●
Closed Circuit - Common Source	○	
Closed Circuit - Separate Source	○	
Construction		
Standard Pump Range	3/4 to 10 Hp	3/4 or 2 Hp
Standard Heater Range	0 to 48 kW	12 kW
Cast Heater / Pump	●	●
Incoloy Heaters	●	●
Silicon Carbide Seals	●	●
Pressure Gauges		●
Pressure Transducer	●	
Solid State Heater Relays (SSRS)	●	
Controls		
PID Control	●	●
Setpoint / Actual Display	●	●
Password Protection	●	
Modbus-RTU via RS-485		
Modbus-TCP via Ethernet	●	
SPI RS-485 Interface	○	
OPC-UA	●	
Retransmit Process Temp	●	
Auto Restart Capability	●	
Mold Purge (Factory Installed)	○	○
Phase Detection Circuit	●	
Choice of Control Points	●	●
Auto Cool Stop	●	
Status / Alarm Lights		
Audible Alarm	●	
Strobe Light	○	
Alarm Dry Contacts	○	
Remote RTD Support	●	
Trending	●	



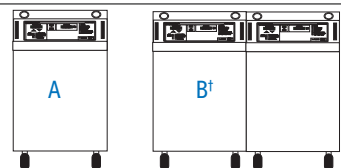
Specifications

WATER TEMPERATURE CONTROLLER

Models	TW-E (direct injection) [†]	TW-E (optional closed circuit) [‡]
Performance characteristics		
Minimum setpoint temperature °F [°C]	40 [4] (with 100% water process fluid)	
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] (Cv=2.9) (varies) (other sizes available as optional special order units)	
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] ^{††}					 TW-E and TW-T only [†]
Cabinet style	Single Zone Small (A)	Single Zone Large (A)	Dual Zone Small (B) [†]	Dual Zone Large (B) [†]	
Height	24.98 [634]	28.98 [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			
Voltage	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			
Voltage	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	63.3	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-E and TW-T models only.

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

[§] Closed Circuit Common Source (CCCS) cooling injects cooling water in the process loop only during the initial filling or when make-up water is needed. Closed Circuit Separate Source maintains separation via heat exchanger between the cooling and process fluids at all times.

^{***} FLA data for reference purposes only. Does not include any options/accessories on equipment. For full FLA detail of specific machines/systems, refer to the electrical diagrams of the equipment order and the nameplate applied.

^{††} 300°F units require 75 psi minimum inlet cooling source pressure to operate at the highest temperature at sea level. Higher elevations will require slightly more pressure.

^{††} Smaller frame only available on 3/4HP-3HP units with 0-18kW Heater option, without UL508A option.

^{§§} With sufficient cooling water pressure

^{***} 10 HP not available for 50Hz

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

