



## TRUETEMP COMPACT & UPRIGHT WATER TCUS

TrueTemp TCU Series water temperature control units from AEC provide highly accurate control for production applications requiring a continuous supply of temperature-controlled water. They have an operating leaving water temperature range of 32°F to 250°F (0°C to 121°C).

TrueTemp TCUs are available in either direct injection or closed circuit configurations for controlled cooling. For direct injection cooling, solenoid valves regulate the flow of heated water to the process water stream. Closed circuit configurations cycle heated water through a closed loop heat exchanger assembly.



TrueTemp TCUs

### STANDARD FEATURES

- Compact, rugged cabinet with easy-access side panels
- Cast-and-flange design to reduce connection points
- Half- and full-heat capability, 9kW heater standard
- Dual stage Incoloy® immersion heater with IEC contactors
- NEMA 12 (IP55) electrical enclosure
- 0.25" cooling solenoid valve on 0.75 to 3 hp (.56 to 2.2 kW) models; 0.5" slow-close cooling solenoid valve on 5, 7.5, & 10 hp (3.7, 5.6, and 7.5 kW) models
- Forward-facing liquid-filled To and From Process pressure gauges
- Independent high temperature safety thermostat
- Non-fused lockable rotary through door disconnect
- Off-the-shelf microprocessor-based PID temperature controller with Process and Set Point LED readouts
- Graphic control panel with indicator and warning status lights
- Adjustable low supply water pressure switch; 16 psig (110kPa/1.1 bar)
- 150 psig (1,034 kPa/10.3 bars) pressure relief valve
- SICB/carbon pump seal
- 0.75" water supply connection, 1.5" process connections; valve size matches drain size
- Motor branch circuit overcurrent protection with phase loss and overload trip detection
- Automatic vent sequence
- 3" (76 mm) casters
- 3-year parts and labor warranty (labor at factory), 5-year controller warranty, lifetime warranty on wetted cast components, lifetime pump seal (subject to factory review)

### OPTIONAL FEATURES

- 12 kW, 18 kW<sup>1</sup>, 24 kW<sup>1</sup>, 36 kW<sup>2</sup>, or 48 kW<sup>2</sup> heaters
- Unit without heater (includes 0.5" solenoid valve CV = 04)
- Maintained START/STOP switch (push to stop, twist to start)
- Manual bypass
- Brass construction
- Closed loop heat exchanger with 0.5" solenoid (3.7 sq. ft./344 sq. m) U-tube, 7.4, 11.2, 18.1, 27.1 sq. ft./0.688, 1.042, 1.683, 2.511 m<sup>2</sup> shell & tube)
- General fault audio/visual alarm
- Quick cool switch
- Pressure regulator/relief valve for water supply, shipped loose
- Auto system water purge, shipped loose
- Y-strainer, shipped loose
- Hammer arrestor
- 10 ft. (3 m) power cord, no plug, shipped loose
- Rubber feet in lieu of casters
- SCR heater control
- Cooling solenoid slow-close valve
- Modulating valve, 1/2" – 1 1/4" (CV = 0.4–20)
- Stack rack with casters, 2 zone (without manifold), 3 or 4 zone (2 x 2 configuration) compact units only
- Side-by-side dolly, 2 or 3 zone with manifold
- Common wiring and/or piping for two zone
- TEFC motor
- 300°F (149°C) operations, includes silicon carbide/silicon carbide seal (requires 55 psig (379 kPa/3.8 bar) water supply pressure)

<sup>1</sup> N.A. for closed-loop compact units

<sup>2</sup> Direct injection upright units only, n.a. for 200/3/50 or 230/3/60 VAC

## SPECIFICATIONS

Model	Style	Pump, hp (kW)	Flow, gpm (lpm)	Pressure, psig (kPa)	Height, in. (cm)	Width, in. (cm)	Depth, in. (cm)	Ship. weight, lbs. (kg)
TCU075	Compact	0.75 (0.56)	30 (113.6)	25 (172.4)	28.75 (73)	13 (33)	28 (71.1)	210 (96)
TCU100		1 (0.75)	35 (132.5)	30 (206.9)	28.75 (73)	13 (33)	28 (71.1)	210 (96)
TCU200		2 (1.5)	50 (189.3)	30 (206.9)	28.75 (73)	13 (33)	28 (71.1)	210 (96)
TCU300		3 (2.24)	60 (227.1)	35 (241.3)	28.75 (73)	13 (33)	28 (71.1)	210 (96)
TCU500		5 (3.73)	90 (340.7)	50 (344.8)	28.75 (73)	13 (33)	28 (71.1)	240 (109)
TCU750		7.5 (5.6)	120 (454.2)	50 (344.8)	28.75 (73)	13 (33)	28 (71.1)	240 (109)
TCU075U	Upright	0.75 (0.56)	30 (113.6)	25 (172.4)	48 (122)	13 (33)	28 (71.1)	210 (96)
TCU100U		1 (0.75)	35 (132.5)	30 (206.9)	48 (122)	13 (33)	28 (71.1)	210 (96)
TCU200U		2 (1.5)	50 (189.3)	30 (206.9)	48 (122)	13 (33)	28 (71.1)	210 (96)
TCU300U		3 (2.24)	60 (227.1)	35 (241.3)	48 (122)	13 (33)	28 (71.1)	210 (96)
TCU500U		5 (3.73)	75 (283.9)	50 (344.8)	48 (122)	13 (33)	28 (71.1)	240 (109)
TCU750U		7.5 (5.6)	75 (283.9)	50 (344.8)	48 (122)	13 (33)	28 (71.1)	240 (109)
TCU1000U		10 (7.46)	90 (340.7)	55 (379.2)	48 (122)	13 (33)	28 (71.1)	270 (123)

Note: Contact factory for additional lead time on 7.5 hp pumps.

## FULL LOAD AMPS

Model hp (kw)	Full Load Amps @ 400 Volts					
	9 kW htr	12 kW htr	18 kW htr	24 kW htr	36 kW htr	48 kW htr
0.75 (0.56)	12.7	16.5	24.0	31.6	47.4	62.4
1.00 (0.75)	13.1	16.9	24.4	32.0	47.8	62.8
2.00 (1.50)	14.7	18.5	26.0	33.6	49.4	64.4
3.00 (2.24)	16.1	19.9	27.4	35.0	50.8	65.8
5.00 (3.73)	18.9	22.7	30.2	37.8	56.6	71.6
7.50 (5.60)	22.3	26.1	33.6	41.2	57.0	72.0
10.00 (7.46)	26.0	30.0	37.0	45.0	60.0	75.0

## PRESSURE DROP FLOW AND LOSS

Model hp (kw)	Pressure Drop Flow and Loss		
	flow, gpm (lpm)	loss, psi (kPa)	Recommended NPT pipe size for flow rate
0.75 (0.56)	30 (113.6)	0.0 (0.0)	1-1/4"
1.00 (0.75)	35 (132.5)	1.0 (6.9)	1-1/4"
2.00 (1.50)	50 (189.3)	1.5 (10.3)	1-1/2"
3.00 (2.24)	60 (227.1)	2.0 (13.8)	1-1/2"
5.00 (3.73)	75 (283.9)	2.5 (17.2)	2"
7.50 (5.60)	90 (340.7)	3.0 (34.4)	2"
10.00 (7.46)	120 (454.2)	5.0 (34.4)	2-1/2"

Note: Recommended pipe size based on flow rate producing less than 10 ft/sec (3 m/sec) velocity through pipe diameter.

## CONTROLLER OPTIONS

Controller	Options
Standard	4 to 20 mA retransmission of process variable (E5CK only) not available with modulating valve. 4 to 20 mA remote setpoint & retransmission of process variable (E5AK only) Communication: RS-232, RS-485, RS-485 SPI, and Modbus uses Eurotherm 3216 controller Remote probe: local/remote control (remote probe and internal probe change to 100 ohm RTD) Digital flowmeter (includes separate indicator)
Advanced	Analog (voltage or current) remote setpoint and retransmission of process variable, setpoint, or flow rate Communication: RS-232 Modbus, RS-485 Modbus, RS-485 SPI, Ethernet IP via Modbus RTU Analog heat and cool, level control, heater weld contact detect with internal cascade control Remote probe <sup>1</sup> Integral digital flow meter Local/remote start/stop, auto cool down with stop, general fault alarm, integral start/stop, vent and alarm silence buttons
Remote control enclosure with 20 ft. (6 m) cable (additional cable available at extra charge)	

<sup>1</sup> Remote probe with advanced controller allows customer to either monitor or control from a customer supplied type J, K or T thermocouple, 100 or 1000 ohm RTD. Additional cost to have probe supplied by manufacturer.

## ELECTRICAL OPTIONS

- General fault alarm, audible and visual
- 208-575/3/60 VAC, 200-415/3/50 VAC, or 575/3/60 VAC. (200-415/3/50 VAC uses circuit breakers in place of primary transformer fuses)
- UL, cUL listed subpanel
- CE certification (circuit breakers replace primary transformer fuses)
- Ontario Hydro specifications (Inspection to be done by others)

## OTHER OPTIONS

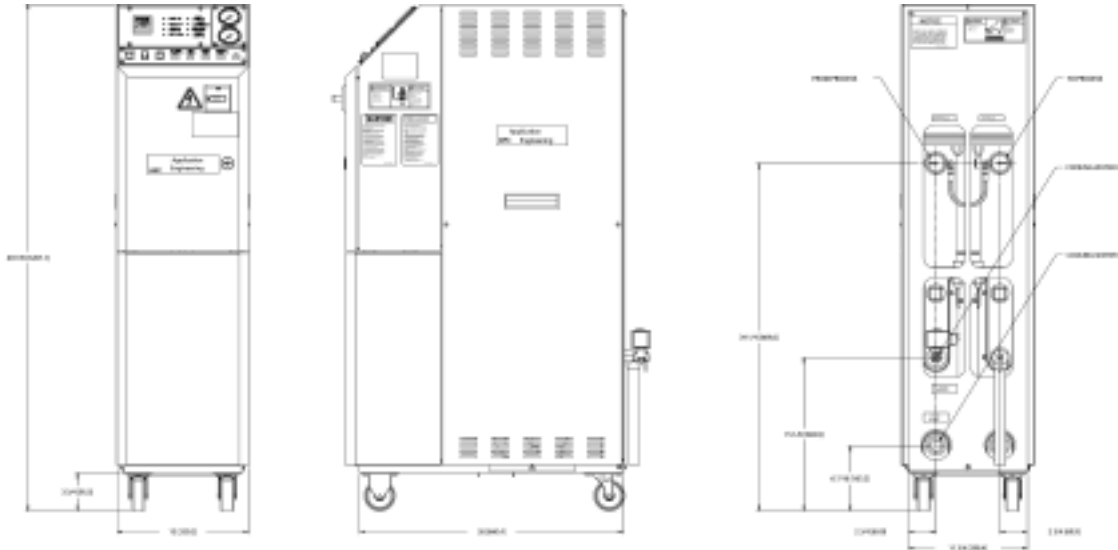
Option	Available Sizes
Cooling solenoid slow-close valve	0.5" x 0.5625" (Cv = 3.5)
	0.75" x 0.75" (Cv = 5.5)
	1" x 1" (Cv = 11.5)
	1.5" x 1.25" (Cv=24)
Modulating valve	0.5" (Cv = 0.4, 1.3, 2.2, 3.4)
	0.75" (Cv = 5.5, 7.5)
	1" (Cv = 10, 14)
	1.25" (Cv=20)
<b>Part Number</b>	
Descaler	602.88905.00
Descaler fluid (5 gallons)	692.88904.00



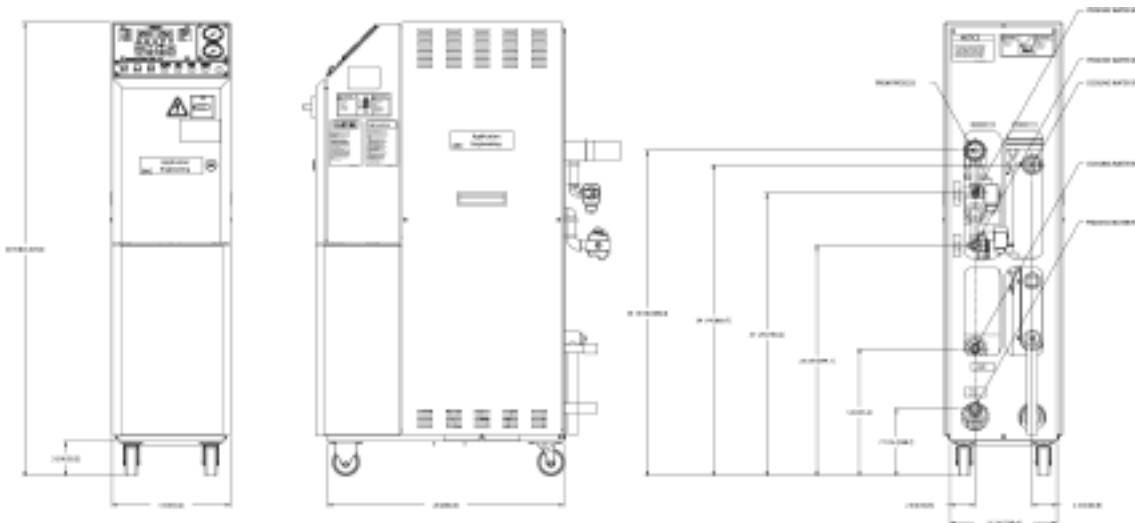
Optional Advanced Controller



## UPRIGHT TCU: DIRECT INJECTION



## UPRIGHT TCU: CLOSED CIRCUIT

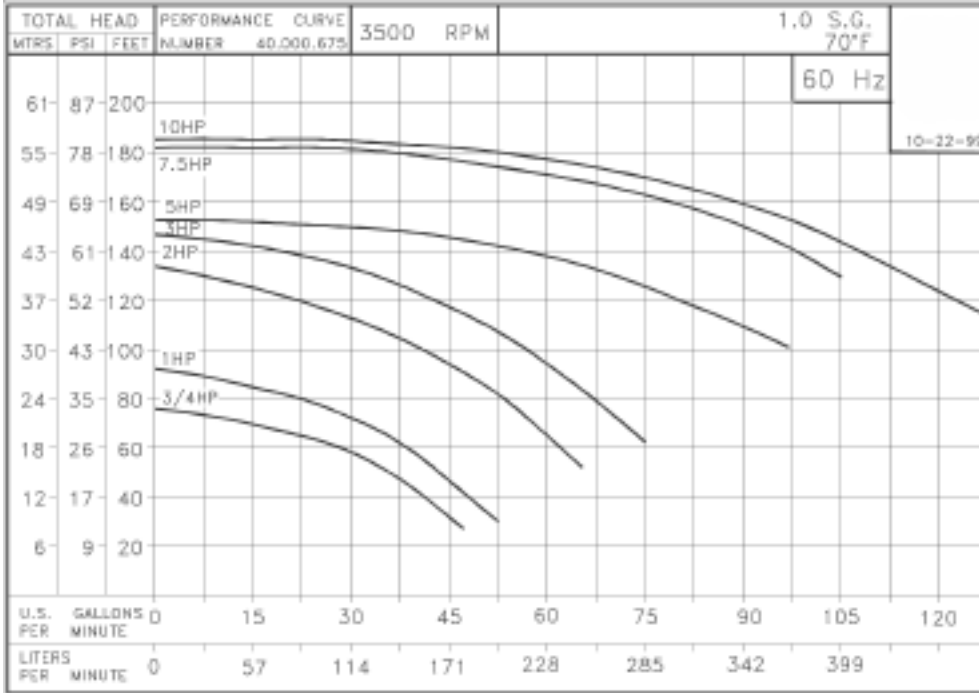


Note: Pictures on this page depict unit with 24, 36, or 48 kW heater options. For piping dimension for a unit with less than 24 kW, please refer to the compact unit.

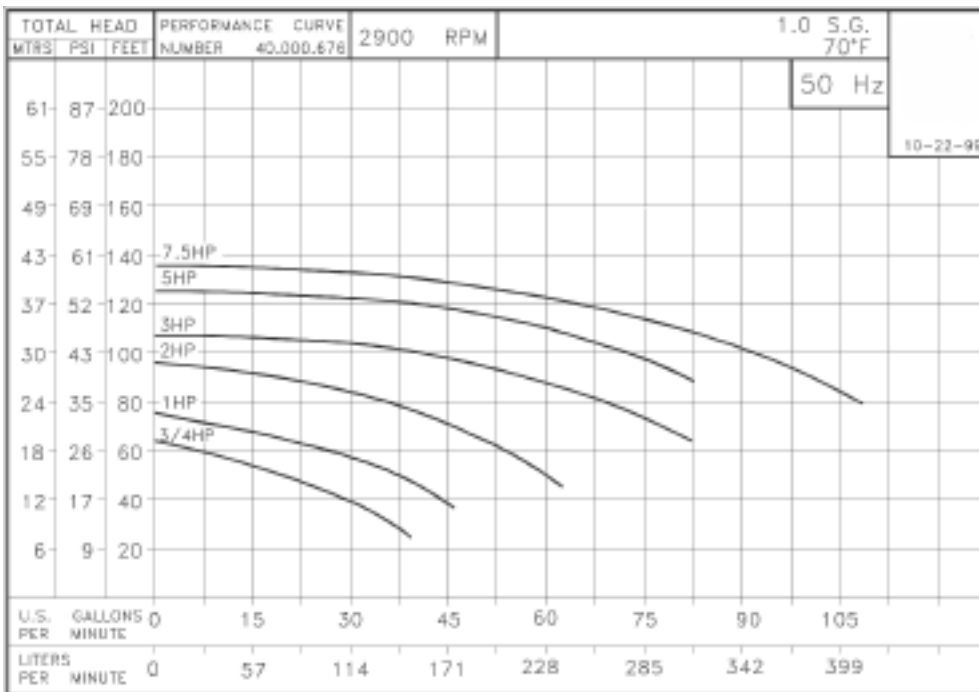
# TRUTEMP TCU SERIES WATER TCUS

# HEAT AND COOL

## PUMP CURVES: 60 HZ



## PUMP CURVES: 50 HZ



Note: Consult factory for 10 HP pump curves.