



BEST IN CLASS CHEMICAL HEATER

The TIH offers unmatched performance and reliability with the ability to heat a variety of chemicals up to 210°C. This heater is suitable for either single pass or recirculating applications. Delivers best-in-class performance over a wide range of flow and temperature requirements. The TIH is the most durable and long-lasting inline chemical heater available!



TIH

FEATURES

Designed for Performance and Safety

High-temperature configuration available to heat chemicals up to 210°C

Multiple plumbing layouts available to better facilitate installation into a variety of tool configurations

Grounded electric heating elements

Redundant temperature sensors for safe operation
Optional O-ring free construction minimizes contamination

Durable Constuction

Patented purge design removes chemical permeation to extend service life

All fluoropolymer-wetted surfaces withstand virtually any wet chemistries

Heavy-wall PTFE chamber and heater sheath for high temperature/pressure applications

Temperature: Up to 210°C (410° F)	Pressure: 689 kPa (99.93 PSI) at 25°C (77° F), 296 kPa (42.93 PSI) at 180°C (356° F)
Watts: 1kW to 18kW	
200 to 600 volts, Single phase or 3 phase	CE, UL compliant, SEMI S2
Compatibility	
YES acids	YES water
YES bases	NO solvents
	NO gases

APPLICATIONS

- Semiconductor wafer cleaning
- Solar/Photovoltaic Wafer Cleaning
- Inline chemical heating

TIH In-line Chemical Heater

SPECIFICATIONS

Wattages	1kW to 18kW
Voltages	200 volts to 600 volts, single phase or 3 phase. 12kW & larger require 3 phase.
Temperature Range	Up to 210° C (410° F).
Pressure Range	689 kPa (99.93 PSI) at 25°C (77° F) 296 kPa (42.93 PSI) at 180°C (356° F)
Fluid Connections	6 to 25mm flared 12 to 25mm Super 300 Type Pillar® Other connections available, consult factory
Wetted Surfaces	PFA and PTFE fluoropolymer No wetted "O" rings
Dimensions	225mm (8.86 inch) x 508mm (20 inch) x 147mm (5.79 inch)
Element Purge	Small amount of clean dry air (CDA) or N2 gas flows between the grounded element & PTFE sheath. Removes chemical permeation and minimizes ionic contamination for longer life.

MODEL NUMBER BREAKDOWN

TIH	6	3	1	B	A	S	R	R
TIH series	Wattage, kW	Voltage	Phase	Inlet and Outlet Connections	Drain Connection	Plumbing Configuration	Process sensor type	Overtemp sensor type
	01 thru 18	1 = 208V	1 or 3	A = 1/2 inch Flared	O (or 0) = No Drain	S = Straight (180° opposed inlet, outlet, center-bottom drain)	J = Type J thermocouple	E = Type E thermocouple
		2 = 240V		B = 3/4 inch Flared	A = 1/2 inch Flared	R = Bottom side inlet, rotated 90° to right of outlet (center-bottom drain)	K = Type K thermocouple	K = Type K thermocouple
		3 = 380V		C = 1 inch Flared	B = 3/4 inch Flared	L = Bottom side inlet, rotated 90° to left of outlet (center-bottom drain)	H = 100-Ohm RTD (2-wire)	H = 100-Ohm RTD (2-wire)
		4 = 400V		S = 3/8 inch Flared	S = 3/8 inch Flared	E = Bottom side inlet, rotated 180° from outlet (center-bottom drain)	R = 1000-Ohm RTD (2-wire)	R = 1000-Ohm RTD (2-wire)
		5 = 415V		T = 3/8 inch Super 300 Pillar	T = 3/8 inch Super 300 Pillar	A = Bottom side inlet, directly below outlet (center-bottom drain)	O = No process sensor	
		6 = 480V		U = 25mm union	V = 1/2 inch Super 300 Pillar	B = Bottom inlet center of bottom, (standard no drain, side bottom drain if required)		
		7 = 440V		V = 1/2 inch Super 300 Pillar	W = 3/4 inch Super 300 Pillar	C = Straight (side-drain, below inlet)		
		8 = 575V		W = 3/4 inch Super 300 Pillar	Y = 1/4 inch Super 300 Pillar	D = Straight (side-drain, below outlet)		
		9 = 220V		X = 1 inch Super 300 Pillar	Z = 1/4 inch Flared	H = Horizontal design (similar to B, but with drain on lower side, opposite outlet)		
		10 = 200V		4 = 20mm union	4 = 20mm union	Other configurations = issue new plumbing designation		
		14 = 600V						
		15 = 230V						
		16 = 450V						

DIMENSIONS

VERTICAL CONFIGURATION	
kW	LENGTH
1	463 mm (18.23 inches)
2	
3	
4.5	667 mm (843.5 inches)
6	
9	870 mm (843.5 inches)
12	
13.5	1022 mm (843.5 inches)
18	1073 mm (843.5 inches)

HORIZONTAL CONFIGURATION	
kW	LENGTH
1	508 mm (20 inches)
2	
3	
4.5	
6	629 mm (843.5 inches)
9	845 mm (843.5 inches)
12	
13.5	1066 mm (843.5 inches)
18	

