AQUA-THERM™

Ultra High Purity Deionized Water Heating System

For applications where
temperature stability,
high purity,
and reliability are of
critical importance.

ais

APPLIED INTEGRATED SYSTEMS

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Ultra High Purity Deionized Water Heating System

Introducing *Aqua-Therm*™, Applied Integrated Systems' ultra high purity DI water heating system for applications where temperature stability, high purity, and reliability are of critical importance.

AIS's unique patent pending, multi-stage, infrared technology along with proprietary control algorithm makes it the only heater in today's market capable of maintaining accurate temperature control even during fluctuating flow conditions and varying inlet temperatures.

The all Teflon heating module design provides an ultrapure flow path without the use of seals, o-rings, and pipe threads thus eliminating particle traps and potential for leaks.

Why is hot deionized water important?

- Reduces DI water consumption by improving its cleaning effectiveness
- Reduces thermal shock to wafers when rinsed before hot acid baths
- Maintains tight temperature control during seasonal temperature fluctuations

Features and Benefits

- **ULTRA HIGH PURITY HEATING**
  All Teflon flow path with no seals, no o-rings, no pipe threads, and no metal exposure eliminates any potential for contamination and assures the highest purity level is maintained.

- **HIGH TEMPERATURE ACCURACY**
  Proprietary, multi-stage based, software algorithm combined with high efficiency heating module design assures tight temperature accuracy is achieved even during varying inlet temperature and fluctuating flows.

- **FAST RESPONSE TIME**
  Patent pending infrared technology along with unique multi-stage temperature control algorithm results in exceptionally fast response to changes in inlet temperature, flow rate, and temperature set point.

- **FLEXIBLE DESIGN**
  Wide range of power is achieved by the use of modular high efficiency heating modules. In addition, AIS's unique control system allows for virtually any communication protocol.

- **COMPACT FOOTPRINT**
  Aqua-Therm™'s modular design approach allows for one of the most compact footprints in the market.

- **SOPHISTICATED CONTROL**
  Unique multi-stage temperature control algorithm virtually eliminates temperature fluctuations resulting from changes in inlet temperature, fluctuating flow rates, and changes in temperature set point.

- **USER FRIENDLY**
  Simple to use touch screen display and highly configurable communication protocol and facilities connections.

- **SAFETY**
  Redundant safety features. CE, SEMI, UL compliant.

Specifications

Wetted Flow Path	Teflon (PFA, PTFE), PVDF fittings
Heating Technology	Patent pending multi-stage
Heating Capacity	Up to 500KW
Voltages	208 - 600 VAC, 3Ø, 50/60Hz
Temperature Control	Up to 98˚C
Temperature Accuracy	±0.3˚C (varies with application)
Pressure Rating	Up to 689 Kpa (100 psig)
Flow Rate Range	Up to 200 lpm (53 gpm)
Temperature Sensors	Teflon sleeved J-Type (process), K-Type (over-temp)
Fluid Connections	3/4" (19mm), 1.0" (25mm) Flare or Pillar, 1" to 2" (32-63mm) union
Power Connection	Hard wired
Enclosure	Powder Coated Steel, FM4910
Host Communication	Parallel: Temperature set point (4-20mA or 0-10VDC), power enable, alarm (dry contact), Serial, or Ethernet
Efficiency	> 99%
MTBF	> 5 years
Control Technology	Multi-Stage
Compliance	SEMI S3, CE, UL
Warranty	18 months

Applied Integrated Systems reserves the right to change specifications without notice.

Wattage [KW]	Width (W)	Length (L)	Height (H)
30 -70	20" /508mm	29"/737mm	81"/2057mm
75 -150	26"/660mm	29"/737mm	81"/2057mm
155 - 250	32"/813mm	29"/737mm	81"/2057mm
260 - Higher	Consult Factory	Consult Factory	Consult Factory

Options

- Communication protocol
- Host communication signals
- Color touch screen display
- Resistivity monitor
- Filtration
- Remote flow rate signal
- Data logging
- Extended warranty
- Additional options upon request

Safety Features

- Process over-temp protection
- Heating module over-temp protection
- Enclosure environment over-temp protection
- Over-load protection
- Leak detection
- EMO circuit (local and remote)
- Ground Fault Interrupt (GFCI)
- Main circuit breaker disconnect
- Over pressure relief valve
- Fire retardant enclosure
- Alarm feedback to host
- SEMI S3, CE, UL compliant

For more information, contact AIS at: sales@appliedintegratedsystems.com

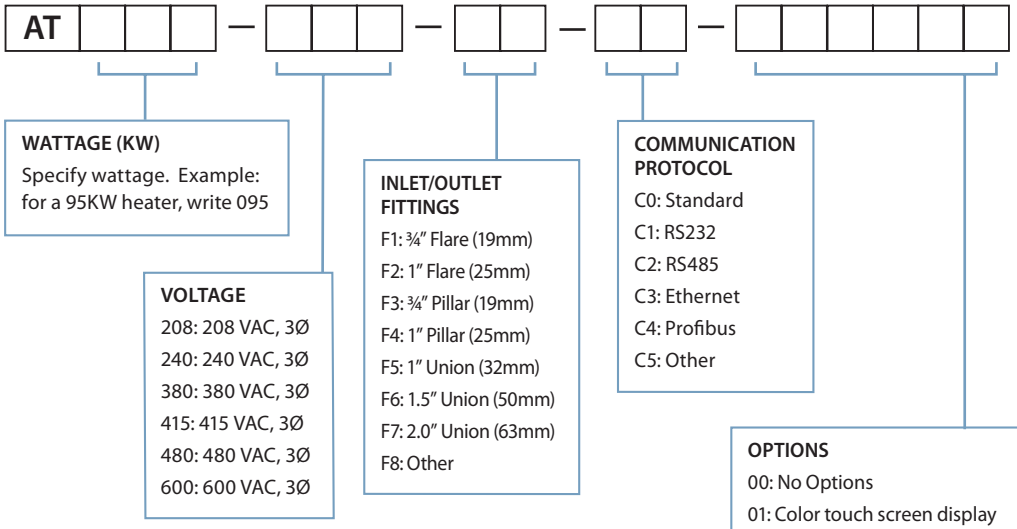
AQUA-THERM™

ORDERING INFORMATION

Please don't hesitate to contact us to help you determine the best product for your application. You may compose the part number of your *Aqua-Therm*™ heater by using the guideline below or simply call one of our product specialists for assistance.

You may also e-mail us at **sales@appliedintegratedsystems.com**

USE THIS CHART TO COMPOSE THE PART NUMBER



Calculating Your Wattage Requirement

$KW = (0.07)^* (\text{Flow Rate})^* (T_{outlet} - T_{inlet})$

- Flow Rate in liters per minute (lpm)
- T_{outlet} = desired outlet temperature (°C)
- T_{inlet} = inlet temperature (°C)

Note: This sizing formula does not include heat losses of the interconnect piping from the heater outlet to the point of use and does not compensate for seasonal changes. AIS recommends adding an extra 20% to the final wattage calculated. Please don't hesitate to consult us for sizing and application assistance.

CONTACT US

www.appliedintegratedsystems.com

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