Passion and Performance

IDAC

Thermal Systems Associates, Inc.

Manufacturer's Representatives

Providing simple solutions

THE WHO…Our Passions

We are a team of people who happen to be engineers, machinists, welders, fabricators and people who love to create and innovate. We've done things that show our innovating passion like building the first "form, fill and seal" '"wine-in-a-box" machines in the world, machining materials used in constructing nuclear submarines, creating parts used in challenging aerospace applications and building the first mid-engine Corvette (winner of the GM Vehicle Design Award at SEMA!). Whether the equipment is submerged 1000 feet below sea-level, flying 40,000 feet above in the sky, or operating in New York's Freedom Tower, we employ this knowledge and experience in your building's mechanical room. We are on your team committed to you and your unique needs.

Innovative

Being able to think through an idea from a variety of perspectives and incorporate those ideas is what makes the difference.

Design

Anyone can have an idea, engineering it with the perfect intersection of form and function is what makes us unique.

Actualize

Ideas are easy, taking the design, building prototypes and exhaustive testing to prove out concepts and capabilities before they go to market set us apart from others.

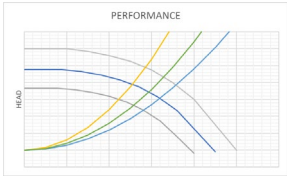
Commercialize

Incorporating new ideas and features that support manufacturing, with a high degree of repeatability, reliability and simplicity, brings the best solution at the best price. This is why we are second to none in the industry.

AND THE PERFORMANCE…

1. EQUIPMENT SELECTION…

It all starts here – matching the system needs up to the equipment performance. For pump systems it means selecting a pump with a good curve (not flat), proper materials for the task, and a stellar efficiency. We are equipment agnostics, so we pick what is best for you and not just what we have to sell



2. MATERIALS…

***Non omne quod nitet aurum est* - All that Glitters is Not Gold**

Our booster package headers and pump circuit piping are constructed using 304/316 stainless steel to ensure maximum longevity. While copper and bronze fittings can help lower first cost it comes at a price later.

3. COMPONENT SELECTION…

Transducers – We use transducers with all stainless wetted components, protected diagrams, and 30 ms response rates. More expensive – HECK YEAH! Incredible Performance – ABSOLUTELY!

Threaded Ball Valves (2 inch and under) - Full port, 1000 WOG and all stainless – DON'T ACCEPT LESS. Within 1000 WOG rated valves there is a wide spectrum of wall thicknesses and depth of threads. We only use the best by selecting Ohio Valve. The higher weight and bigger size compared to their 1000 WOG competitors tells the story – GO RIGHT OR GO HOME!

Butterfly Valves (2 inch and greater) – Lug or grooved with stainless steel discs and bubble tight for your most demanding pressure applications.

Threaded 2 inch and under Check Valves: NPT inline, spring loaded check valves constructed of 300 series stainless steel with Buna-N O-Ring or PFTE seals and installed on the discharge side of each pump. Rated for VFD service and constructed to LAST!

Wafer – 2 inch and higher Check Valves: inline, center guided silent check valve with soft seats, straightening vanes and stainless steel disc and trim. Like the submarine service – quiet, flawless execution and always vigilant - TOP PERFORMANCE!

4. DESIGNING FOR THE USER!

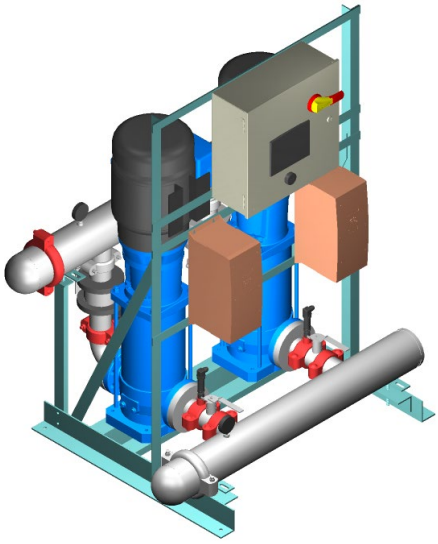
Sizing – We size our headers and circuits to minimize pressure loss and maximize performance. Unlike some of our peers we keep the water velocities low which adds cost but it ensures the check valves have a LONG LIFE and the energy footprint of the package is MINIMAL.

Thermal Protection – Every booster unit is equipped with all stainless thermal purge valves to safeguard the pump.

Quick Disconnects – Our designs always focus on ensuring the equipment and components can be removed for service using the least amount of effort. This includes sanitary connections, oval flanges, grooved couplings and as a last resort flanged connections. SYSTEMS THAT ARE EASY TO MAINTAIN ARE WELL MAINTAINED!

Redundancy – We go the extra mile to ensure system redundancy. With our booster pump systems each pump is equipped with its own redundant transducer and the master control can switch between VFDs so in case of a failure the system can still operate! BETTER TO HAVE AND NOT NEED RATHER THAN NEED AND NOT HAVE!

BOOSTER PUMP PACKAGES



SIMPLEX THROUGH QUAD

PUMPS

Models (Standard)

- End Suction
- Vertical Multistage
- Horizontal Multistage
- Inline

Material Options

- Cast Iron Body/Volute
- Stainless Steel Body/Casing
- Bronze Impeller
- Stainless Impeller

PIPING & ACCESSORIES

Header/Pipe Materials

Standard – Sch 10 304 SS
Options – Sch 40 304 SS, Sch 10 & 40 316 SS

Common System Components

- Check Valves (pump discharge)
- Isolation Valves (on suction and discharge)
- Pressure Gauges (on suction and discharge headers and on pump discharge)
- Thermal Purge Valves (on pump discharge circuits)
- Transducer (1 per pump circuit)
- Low Pressure Switch

Connection Styles

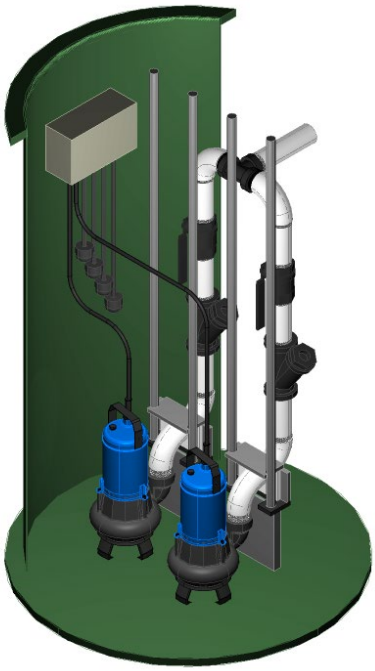
- Threaded
- Grooved
- Flanged

CONTROLS / PANELS

Common Features:

- Variable Frequency Drives
- Fused Disconnect for Incoming Feed
- Branch Circuit Protection
- Color Touchscreen HMI
- Audible Alarm
- MODBUS/BACnet/Ethernet Connections
- Remote Cellphone Connection Cards
- Dry Contacts for Monitoring

SUMP/SEWAGE PUMP PACKAGES



SIMPLEX OR DUPLEX

BASINS

Fiberglass basins, 18 to 72-inch in diameter, square or round anti-flotation collars encased in fiberglass or with steel insert

PUMPS

Pump Specifications

Submersible sump, sewage, effluent and grinder pumps

Materials of Construction

Cast iron • Engineered composites • Stainless steel

Performance Range

- Up to 400 gpm • ¼ - 5 hp • Single phase and three phase
- Maximum head 170' • Solids up to 2.5"
- Discharge size: 1¼" - 3" NPT • 2”, 3” and 4” flange

Features and Benefits

- Automatic and manual models available
- Motors rated for continuous duty

PIPING & ACCESSORIES

Materials of Construction

PVC or Stainless Steel/CI

Components

- Check Valve
- Isolation Valve
- Guide Rail System

CONTROL PANELS

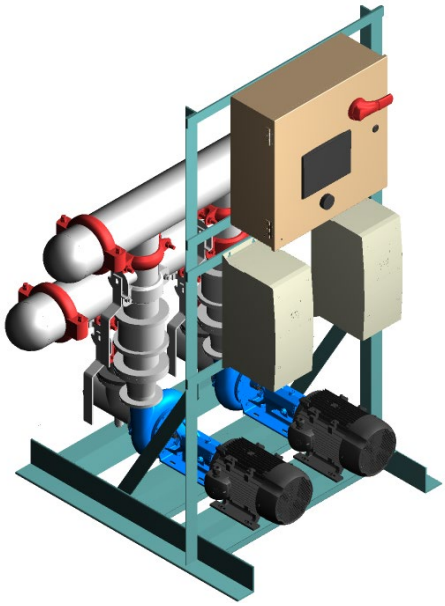
Features:

- UL 508a Listed
- Type 4X Fiberglass Enclosure
- Visual/Audible Alarm Indication with Silencing (Optional)
- PLC Based Control System (Optional)
- Panel Mounted Touch Screen (Optional)
- LED Illuminated HOA Switches
- Incoming Power Non-Fused Disconnect
- Individual Pump Circuit Breaker, Current Overload Relay and Motor Contactor
- Remote Monitoring Dry Contacts
- Optional Dead Front Construction

Configurations:

- 2-Float
- 3-Float
- 4-Float
- Submersible Level Transmitter

HVAC PUMP PACKAGES



SIMPLEX THROUGH QUAD

PIPING & ACCESSORIES

Pipe Materials

Black Steel or Stainless Steel

Common System Components

- Check Valves or Triple Duty Valves (discharge)
- Isolation Valves (on suction and discharge)
- Suction Diffusers
- Flexible Connectors
- Air Separator
- Chemical Feed
- Expansion Tanks

Connection Styles

- Threaded
- Grooved
- Flanged

CONTROLS / PANELS

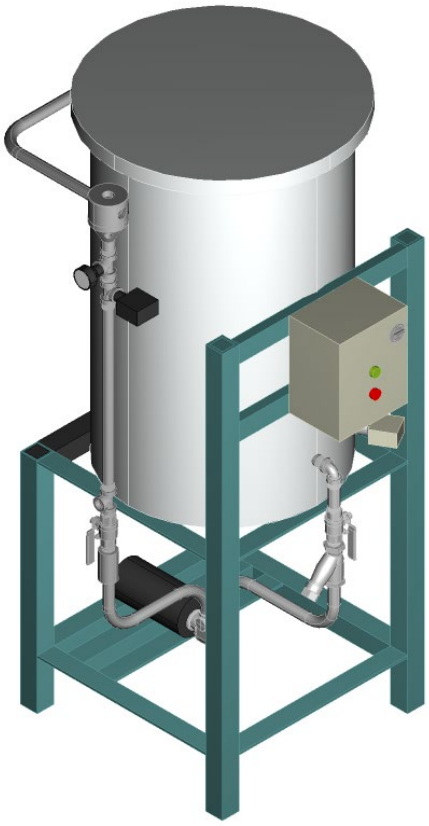
Common Features:

- Variable Frequency Drives
- Fused Disconnect for Incoming Feed
- Branch Circuit Protection
- Color Touchscreen HMI
- Audible Alarm
- MODBUS/BACnet/Ethernet Connections
- Remote Cellphone Connection Cards
- Dry Contacts for Monitoring

TYPICAL APPLICATIONS

- Condenser Water Systems (Cooling Towers, WSHP, GSHP)
- Boiler Water Systems
- Chilled Water Systems
- Process Piping Networks

GLYCOL MAKE UP PACKAGES



SIMPLEX OR DUPLEX

TANKS WITH STANDS

Polyethylene, translucent, flat bottom cylindrical tank with cover. Available in 30, 55 and 105 gallon sizes. Painted frame constructed using A36 structural steel.

PUMPS

Pump Specifications

Rotary vane, NSF listed

Materials of Construction

Brass or Stainless Steel

Performance Range

- 1/3 HP (2.5 gpm@60 psi, 2.3 gpm@100 psi)
- 1/2 HP (5.5 gpm@60 psi, 5.3 gpm@100 psi)
- Discharge Connection: ¾" NPT

PIPING & ACCESSORIES

Materials of Construction

PVC, Stainless Steel

Components

- Check Valve (discharge)
- Isolation Valve (on suction and discharge)
- Strainer (suction)
- Pressure Relief Valve (discharge)

CONTROL PANELS

Features:

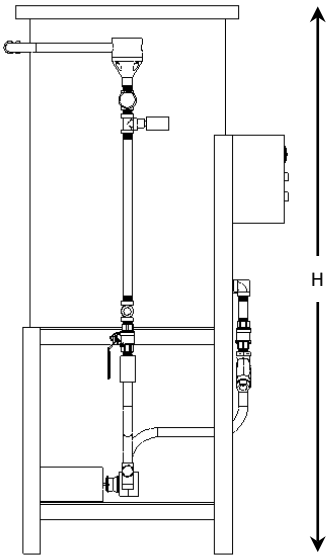
- 115V/1P
- Motor Contactor
- Run and Fault Light
- Low Water Level Cut Off
- Adjustable Pressure Switch
- Visual/Audible Alarm Indication with Silencing (Optional)
- PLC Based Control System (Optional)
- Panel Mounted Touch Screen (Optional)
- Remote Monitoring Dry Contacts

MODEL NUMBERS

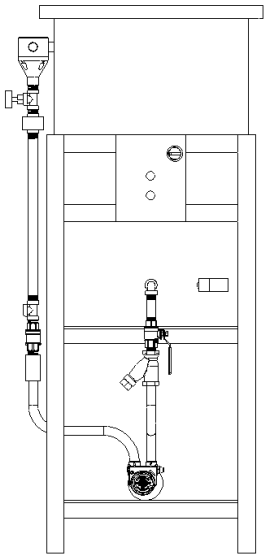
MU - _ _ _ _ _ _ _

- 1st Digit # of Pumps (S=Simplex, D=Duplex)
- Digits 2-4 Gallons (030, 055, 100)
- 5th Digit – Motor Size (A=1/3HP, B=1/2 HP)
- 6th Digit Pipe Material (P=PVC, S=Stainless Steel)
- 7th Digit Control Type (B=Basic, H=HMI)

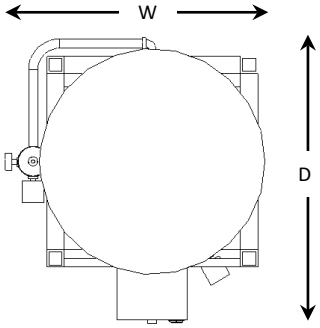
GLYCOL MAKE UP PACKAGES



LEFT VIEW



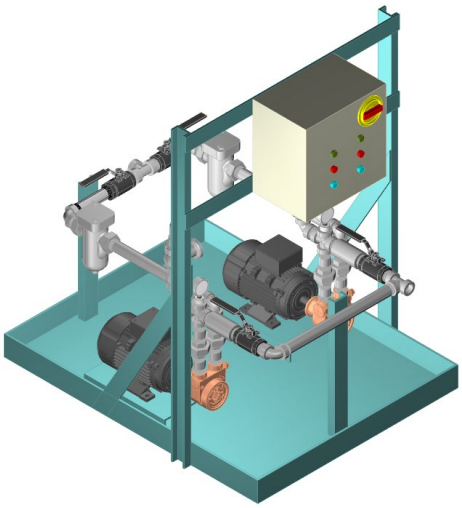
FRONT VIEW



TOP VIEW

MODEL #	WIDTH W	DEPTH D	OVERALL HEIGHT H	PUMP FLOW @ 60 PSI GPM	PUMP FLOW @ 100 PSI GPM	VOLTS/P
MU-X030AXX	23”	26”	55.9”	2.5	2.3	115/1
MU-X030BXX	23”	26”	55.9”	5.5	5.3	115/1
MU-X055AXX	29.5”	32.5”	62.9”	2.5	2.3	115/1
MU-X055BXX	29.5”	32.5”	62.9”	5.5	5.3	115/1
MU-X105AXX	32”	35”	79.9”	2.5	2.3	115/1
MU-X105BXX	32”	35”	79.9”	5.5	5.3	115/1

FUEL OIL TRANSFER PACKAGES



PUMPS

Pump Specifications

Gear Pumps

Materials of Construction

Cast Iron

Performance Range

- Flows from 0.25 GPM to 10 GPM
- Motor HP 1/3 – 1.5
- Discharge Pressures up to 100 PSI
- Supports 25 BHP to 1000 BHP Boilers

FRAME WITH DRIP PAN

Painted A36 structural steel for framing. Painted carbon steel spill tray with 12-gallon holding capacity.

PIPING & ACCESSORIES

Materials of Construction

Black Steel

Components

- Check Valve (discharge)
- Isolation Valve (on suction and discharge)
- Basket Strainer (suction)
- Pressure Relief Valve (discharge)

Connection Sizes

- ¾" NPT 0.25 GPM through 5 GPM
- 1" NPT 5 – 10 GPM

CONTROL PANELS

Features:

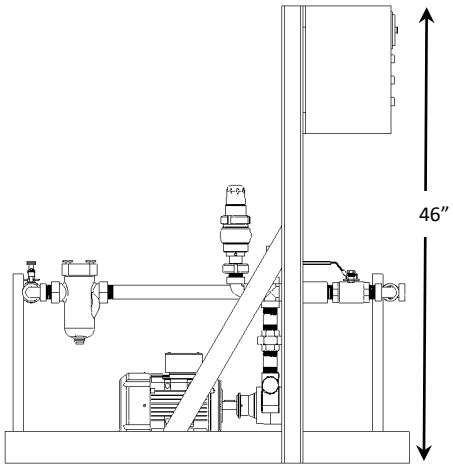
- 115V/1P, 230V/1P, 208V/3P, 230V/3P, 460V/3P
- Motor Contactors with Overload Protection
- HOA Switches
- Fusing or Circuit Breaker Protection on Pump Motor Circuits
- Run and Fault Light
- Automatic Pump Switchover on Pump Fault
- Visual/Audible Alarm Indication with Silencing (Optional)
- Panel Mounted PLC/Touch Screen (Optional)
- Leak Detection (Optional)
- Remote Monitoring Dry Contacts

MODEL NUMBERS

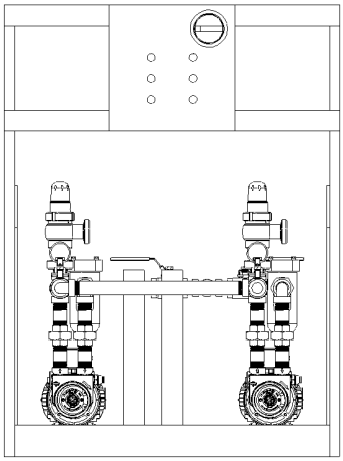
FT - _ _ _ _ _ _ _

- 1st Digit = Pump GPM (A=0.25, B= 0.5, C=1, D=2, E=5, F=10)
- 2nd Digit = Pressure Boost (M = 0-50 PSI, H = 50-100 PSI)
- 3rd Digit = Electric (1=115/1P, 2=230/1P, 3=208/3P, 4=230/3P, 5=460/3P)
- 4th Digit = Control Type (B=Basic, H=HMI)

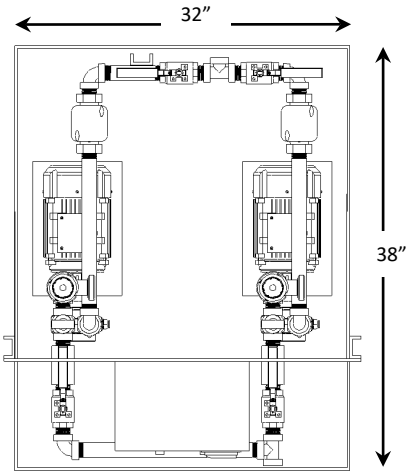
FUEL OIL TRANSFER PACKAGES



LEFT VIEW



FRONT VIEW



TOP VIEW

MODEL #	PUMP FLOW GPM	PRESS. BOOST PSI	CONNECT. NPT	MOTOR HP	TYPICAL BOILER SIZE BHP
FT-AMXX	0.25	0-50	¾”	⅓	25
FT-AHXX	0.25	50-100	¾”	⅓	25
FT-BMXX	0.5	0-50	¾”	½	50
FT-BHXX	0.5	50-100	¾”	½	50
FT-CMXX	1	0-50	¾”	½	100
FT-CHXX	1	50-100	¾”	½	100
FT-DMXX	2	0-50	¾”	½	200
FT-DHXX	2	50-100	¾”	½	200
FT-EMXX	5	0-50	¾”	½	500
FT-EHXX	5	50-100	¾”	¾	500
FT-FMXX	10	0-50	1”	¾	1000
FT-FHXXX	10	50-100	1”	1.5	1000

IDAC ELEVATOR PUMP SYSTEMS

PUMPS

Pump Specifications

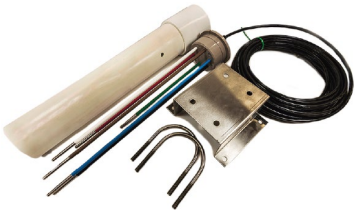
- 3 Sizes
- Submersible Effluent Pump
- Vortex Impeller
- Capable of Handling 1.5” Solids

Materials of Construction

- Cast Iron Volute and Impeller
- Stainless Hardware, Motor Housing and Rotor

Performance Range

- Flows up to 110 GPM
- Motor HP ½ - 2
- TDH up to 68 FT



CONTROL SENSOR

Features:

- 6 Sensor Assembly Mounted in 3” PVC Slip Plug
- Mounting Bracket
- U-Bolts w/Nuts
- 50 Feet Multiconductor Cable

Sensors/Probes:

- Reference
- Pump Water Start
- Pump Water Stop
- Oil Fault
- High Water Alarm
- High Oil Alarm

CONTROL PANEL

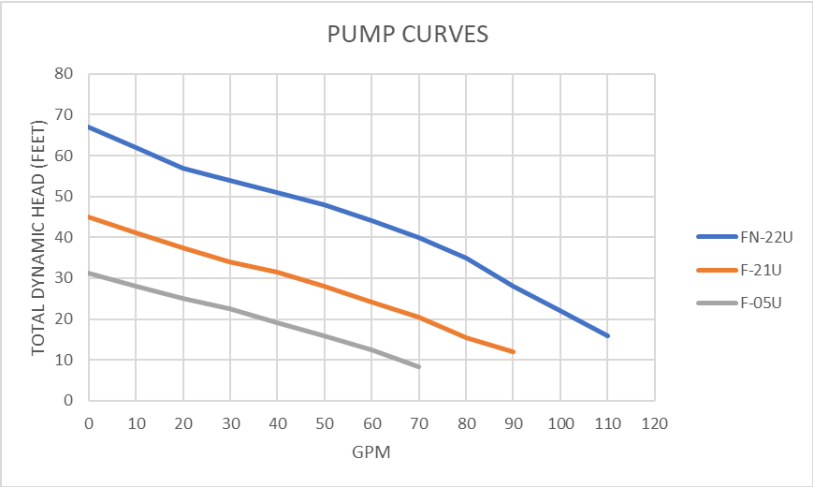
Features:

- NEMA 4X Polycarbonate Housing Suitable for Indoor or Outdoor Installations
- 115V/1P, 208/1P, 230V/1P Models Available
- LED Indicators for Run and Fault
- Audible Alarm w/Silence
- Press to Test Button with LED Indicator
- Up to 8 Wire Dry Contacts for Tie Into Building Automation System

LED Run/Alarm Indicators:

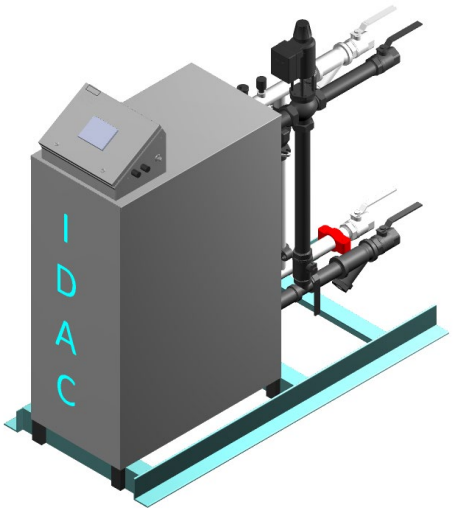
- System Power
- Fault
- Pump
- High Water Alarm
- Oil Fault Alarm
- High Oil Alarm

IDAC ELEVATOR PUMP SYSTEMS



KIT MODEL	PUMP MODEL	DISCH. CONN.	MOTOR HP	PHASE	VOLTAGE	AMPS	PUMP WEIGHT (LBS)
STSD-22-1	FN-22U	2" NPT FT	2	1	230	9.8	66
STSD-21-1	F-21U	2" NPT FT	1	1	115	10	37
STSD-21-2				1	208	5.4	37
STSD-21-2				1	230	5	37
STSD-05-1	F-05U	2" NPT FT	0.5	1	115	6.6	35
STSD-05-2				1	208	3.4	35
STSD-05-2				1	230	3.2	35

DOMESTIC HOT WATER HEATERS



INDIRECT HTG MODEL TYPES

All Models

- Fast Acting 3-Way Electronic Control Valve to Precisely Meter in Heat
- Ball Valves for Isolation on Each Circuit
- Wye Strainers on Domestic and Boiler Side Circuits
- Compact Stainless Steel Double Walled Brazed Plate or Plate and Frame HTX
- Control Panel with Color Touchscreen HMI

Instantaneous – Plate and Frame

- Recirculation Pump on Domestic Bypass Leg to Keep Water Primed
- Plates can be Added or Removed

Instantaneous – Brazed Plate

- Recirculation Pump on Domestic Bypass Leg to Keep Water Primed
- Smaller Footprint than Plate and Frame Units

Tank Heating – Plate and Frame

- Recirculation Pump on Domestic Side to Flow Domestic Water from Tank to Heat Exchanger
- Plates Can be Added or Removed
- Optional Tanks can be Included on Skid

Materials of Construction

- 316 Stainless Steel Plate Heat Exchanger
- Boiler Water Side
    - Black Steel Piping
    - Carbon Steel Ball Valves
    - Cast Iron Wye Strainer (instantaneous models)
    - Cast Iron 3 Way Control Valve Body (instantaneous models)
- Domestic Water Side
    - Stainless Steel Piping
    - Stainless Steel Ball Valves
    - Stainless Steel Wye Strainer

PERFORMANCE

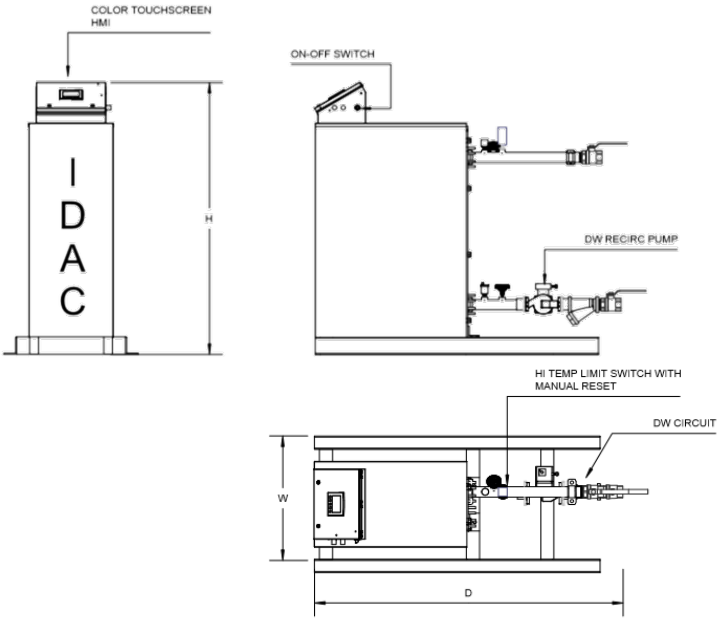
Multiple Units with Capacities from 10 to 60 GPM of DHW from 40-140 Deg. F.

CONTROL PANEL & INSTRUMENTATION

Features:

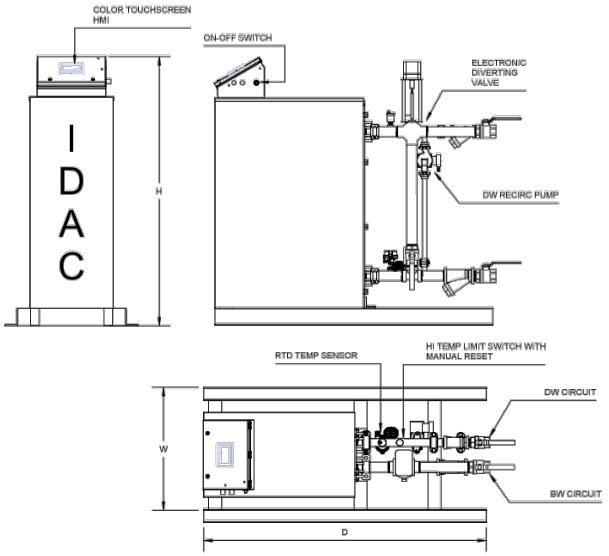
- NEMA 4 Housing
- 115V/1P
- Fusing with External Access
- 4.5” Color Touchscreen HMI
- Programmable Setpoint and Alarm Conditions
- History Trending
- Audible Alarm w/Silence
- RTD Temperature Sensor
- High Temperature Limit Switch (instantaneous models)
- Pressure and Temperature Gauges

DOMESTIC HOT WATER HEATERS



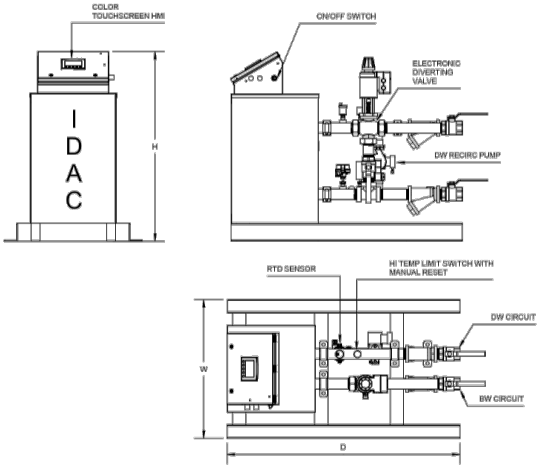
TANK HEATING – PLATE & FRAME

MODEL DATA					
PERF/DATA	MODEL				
	HEAT-5T	HEAT-10T	HEAT-15T	HEAT-20T	HEAT-30
W (IN)	32				
D (IN)	70.25				
H (IN)	62				
BW CONN.	2"Ø		2"Ø		
DW PIPING	304SS - 1.5"Ø		304SS - 2"Ø		
DHW IN/OUT (DEG.F)	40-140				
DHW FLOW (GPM)	10	20	30	40	60
BW IN/OUT (DEG.F)	150-100				150-90
BW FLOW (GPM)	20.2	40.33	60.49	80.65	100.69



INSTANTANEOUS – PLATE & FRAME

MODEL DATA					
PERF/DATA	MODEL				
	HEAT-5	HEAT-10	HEAT-15	HEAT-20	HEAT-30
W (IN)	32				
D (IN)	65				
H (IN)	62				
BW PIPING	STEEL - 1.5"Ø		STEEL - 2"Ø		
DW PIPING	304SS - 1.5"Ø		304SS - 2"Ø		
DHW IN/OUT (DEG.F)	40-140				
DHW FLOW (GPM)	10	20	30	40	60
BW IN/OUT (DEG.F)	150-100				150-90
BW FLOW (GPM)	20.2	40.33	60.49	80.65	100.69



INSTANTANEOUS – BRAZED PLATE

MODEL DATA					
PERF/DATA	MODEL				
	HEAT-B5	HEAT-B10	HEAT-B15	HEAT-B20	HEAT-B30
W (IN)	32				
D (IN)	51.125				
H (IN)	42.42				
BW PIPING	STEEL - 1.5"Ø		STEEL - 2"Ø		
DW PIPING	304SS - 1.5"Ø		304SS - 2"Ø		
DHW IN/OUT (DEG.F)	40-140				
DHW FLOW (GPM)	10	20	30	40	60
BW IN/OUT (DEG.F)	150-100				150-90
BW FLOW (GPM)	20.33	40.67	61.00	81.33	101.50

IDAC EQUIPMENT CONTROL PANELS

UPGRADE, REPLACEMENT AND NEW INSTALL

Standard and Custom Layouts to Meet Your Project Requirements

COMMON FEATURES

- Fused & Non-Fused Disconnects
- Branch Circuit/Motor Protection
- Motor Soft Start
- Variable Frequency Drives
- Color Touchscreen HMI/PLCs
- Remote Monitoring/Communication
    - Modbus
    - Ethernet
    - BACnet
    - Cellular

COMMON APPLICATIONS

- Pump Control
- Level Control
- Pump Up/Down
- Water Quality Monitoring
- Metering
- Heating/DHW Control

Manufacturer's Representatives
www.thermalsa.com
212.729.3056
info@thermalsa.com

P.O. BOX 522, SCIOTA PA 18354
1-570-534-4400
SALES@IDACSYSTEMS.COM