EN

Accuchiller KSE Series

Packaged Outdoor Chiller

Benefits:

- **Refrigerant Options:** EPA approved low GWP R-454B refrigerant or energy efficient R-410A refrigerant.
- **Direct-Drive Scroll Compressors:** Hermetically sealed scroll compressors with proven performance in industrial cooling for reliable, low maintenance, and efficient operation.
- **Built-In Redundancy:** Dual refrigeration circuits with multiple compressors and lead/lag sequencing as standard. The 80 ton (281 kW) through 120 ton (422 kW) units also incorporate independent process fluid circuits.
- **Stainless Steel Evaporators:** High efficiency stainless steel plates with copper brazing provide maximum performance, long life, and an enhanced level of protection from harsh process conditions.
- **Stainless Steel Pumps:** Selected for peak performance with the utmost in corrosion protection to ensure a long useful life under severe industrial conditions. Each pump uses TEFC motors for maximum protection from the environment.
- **Evaporator Inlet Strainer:** Removes any debris present in the process fluid to prevent costly downtime and repair due to a clogged chiller evaporator.
- **Industry Best Ambient Temperature Range:** Outdoor air-cooled chillers operate in -20°F up to 125°F (-29°C to 52°C) ambient temperatures allowing installations in many climates.
- **Warranty:** 1 year parts and labor.

LOW GWP REFRIGERANT
FUTURE PROOF SOLUTIONS TODAY

Accuchiller KSE Series outdoor chillers feature a compact, all-in-one package, designed to minimize installation cost, maximize usable space and lower electric bills. Designed for harsh outdoor environments, KSE Series chillers require no options to operate within the standard -20°F to 125°F (-29°C to 52°C) ambient environment conditions. Standard process fluid temperatures of 20°F to 80°F (-7°C to 27°C) are ideal for industrial applications. The modular design allows up to 12 refrigeration circuits to be combined into a single system for up to 720 tons (2,532 kW) of cooling capacity.

Chillers are available with or without integrated pumping packages, including high and low pressure pumping with dedicated stand-by and built-in pressurized and non-pressured tanks.

KSE Series chillers come standard with Dynamic Lift Technology to continuously calculate the lowest allowable refrigerant pressure for any combination of operating conditions to maximize chiller energy savings and to provide stable process fluid temperatures of +/- 2°F (1.1°C).

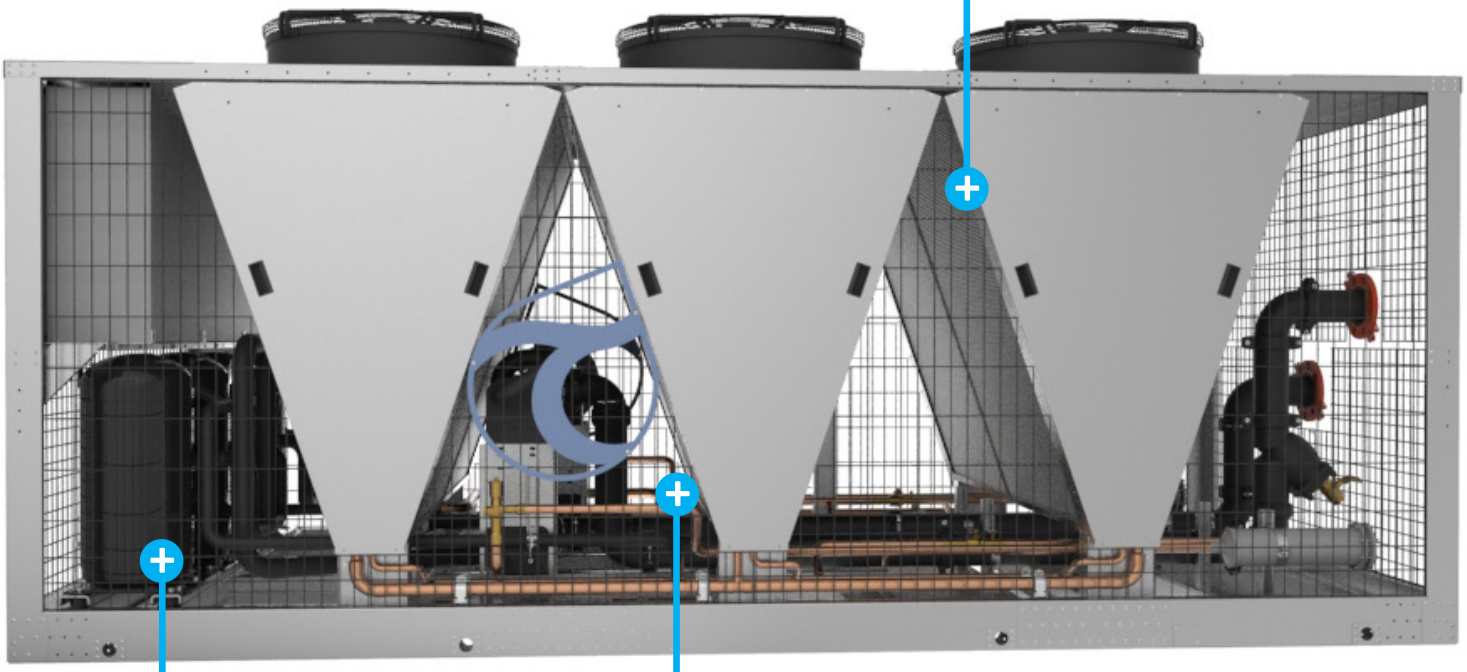
THERMALCARE
PiovanGroup

847.966.2260 | sales@thermalcare.com | www.thermalcare.com

Benefits of the KSE Series Industrial Chiller Features:

HIGH EFFICIENCY STAINLESS STEEL EVAPORATOR PLATES WITH COPPER BRAZING

Provides maximum performance, long life and enhanced protection from harsh process conditions.



HERMETICALLY-SEALED DIRECT-DRIVE SCROLL COMPRESSOR

Provide smooth, quiet operation, with high reliability. The sealed housing prevents refrigerant leaks and protects internal components from dust and moisture.

REDUNDANCY

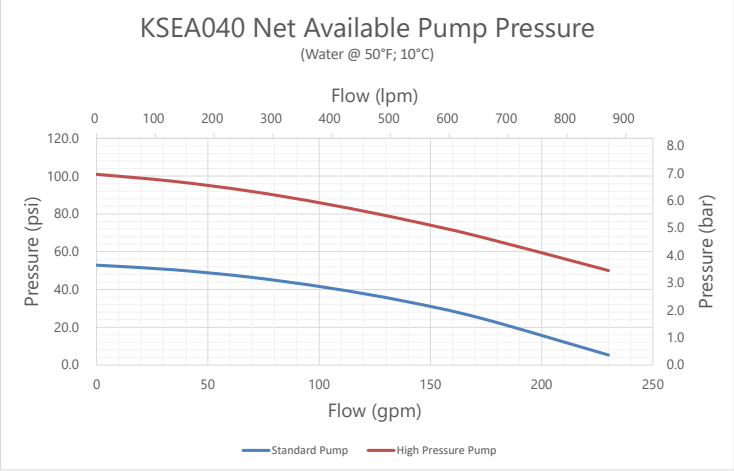
Dual refrigeration circuits, with built-in redundancy and multiple compressors ensures efficient operation and long life.

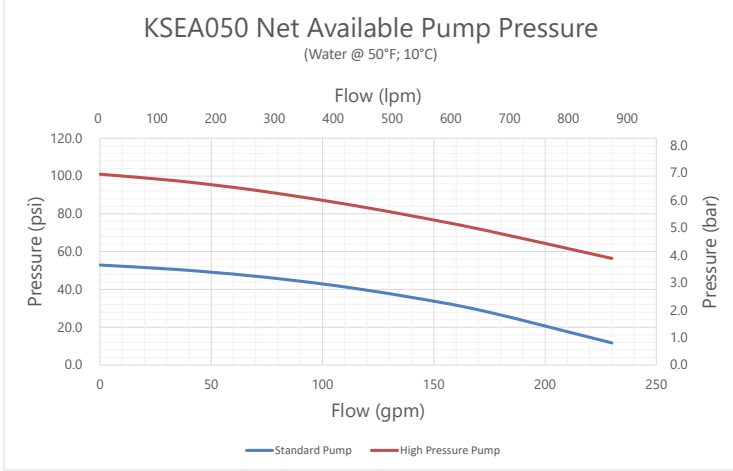
Additional Benefits:

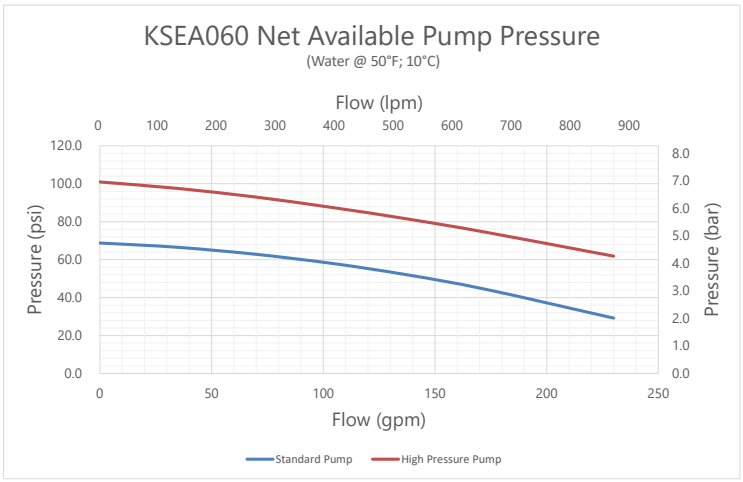
- **Flexible Set Point Ranges:** From 20°F to 80°F (-7°C to 27°C). Powerful and innovate PLC control maintains stable +/- 2°F (1.1°C) accuracy.
- **Heavy Gauge Security and Hail Guard Grates:** Industrial grade security screens are provided as a standard option to protect exposed components while still allowing access for easy operation.
- **Compressor Protection Technology:** Uses start-to-start anti-recycle control logic to limit cycling under low-load operating conditions to extend compressor life.
- **Compressor and Pump Run Hour Displays:** Track usage for maintenance scheduling.
- **Micro-Channel, Aluminum Condensers:** Energy efficient, compact design uses less refrigerant and withstands high pressure spray for easy cleaning.
- **Power Monitor:** Protects the compressor and pump from extensive damage due to loss of phase or phase reversal in the main supply.
- **Variable Speed Fan Motors:** EC fan motors ensure energy efficient operation and lowest possible noise levels. Coupled with electronic expansion valves, our Dynamic Lift Technology uses the fans to maximize energy efficiency for all ambient conditions.
- **Temperature Deviation Warnings and Alarms:** Alerts notify the operator of potential temperature fluctuations before a fault occurs and if the condition gets worse, stops the chiller to prevent damage.
- **Adjustable Deviation Alarm Time Delays:** Delays alarms on start-up to allow the process loop to stabilize before activating the alarms.
- **24 VDC Power Supply:** Ensures dependable control circuit power and isolates the control circuit from static interference for stable and precise operation.
- **UL-508A Industrial Control Panel:** Meet rigorous UL 508A standards for safe, reliable operation.
- **7-Inch Color Touch Screen:** Controls, monitors and maintains stable and reliable chiller operation.

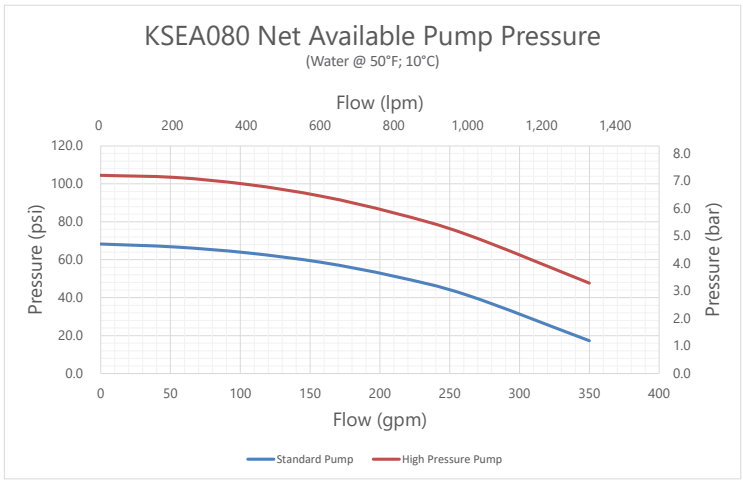
Available Options:

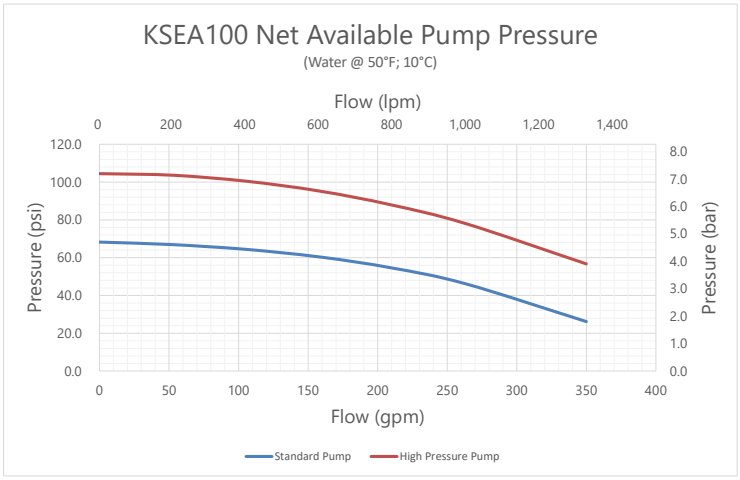
- **High or low pressure pump packages**
- **Alarm horn**
- **Alarm relay**
- **Rotary non-fused or fused disconnect switch**
- **Air-cooled condenser coating for coastal regions**
- **Emergency stop button**
- **Remote HMI with operator interface**
- **Special color paint**

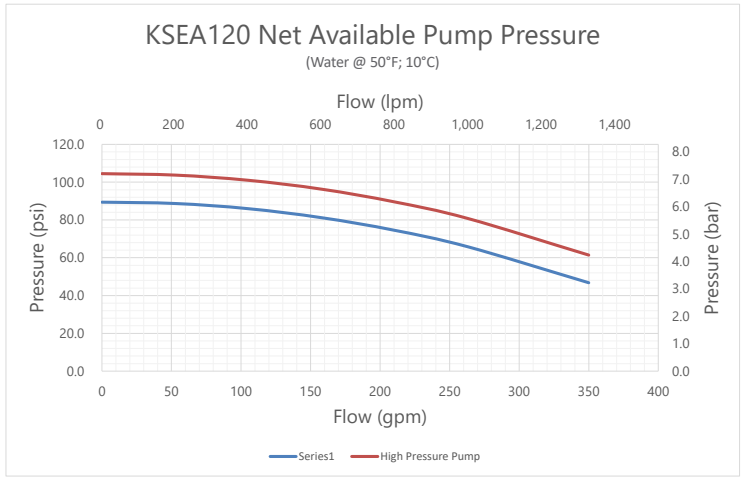




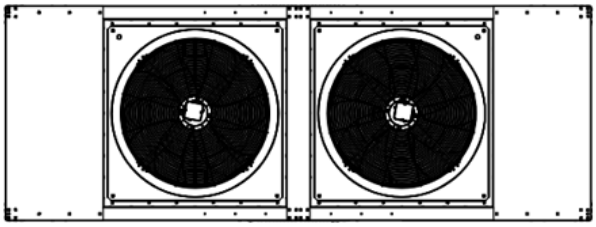


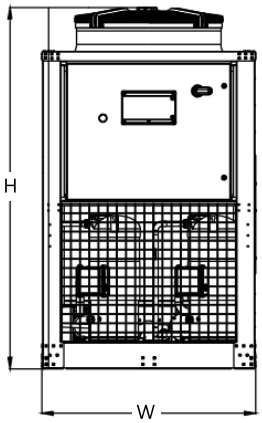


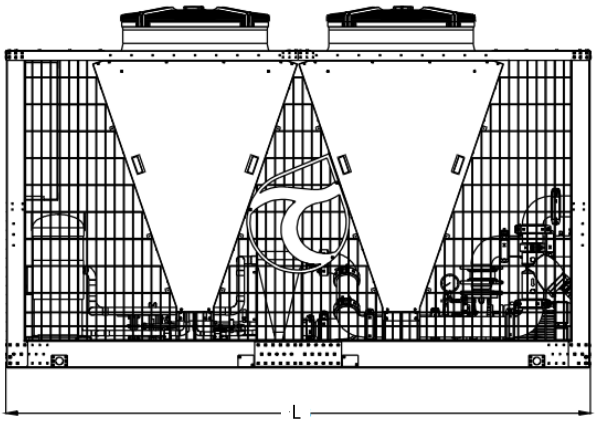


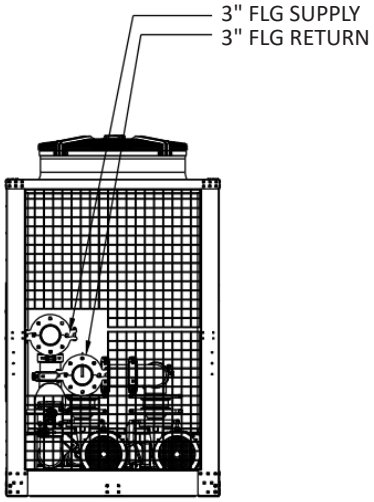


KSEA040 and KSEA050

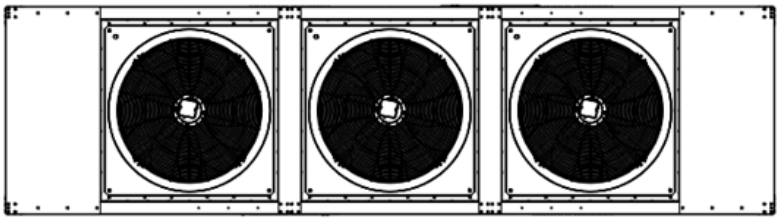


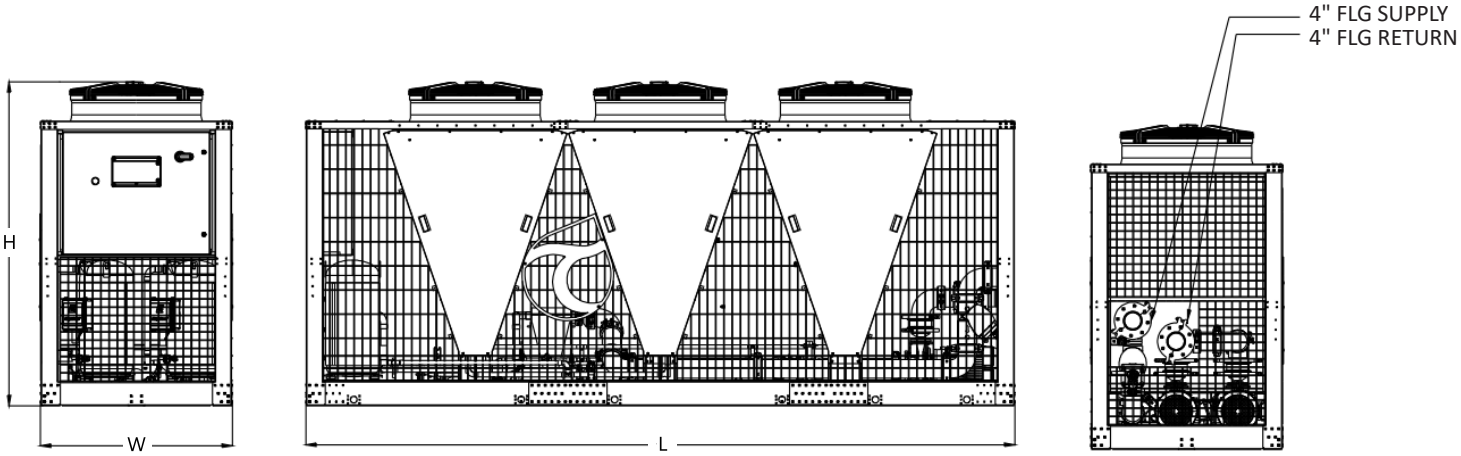




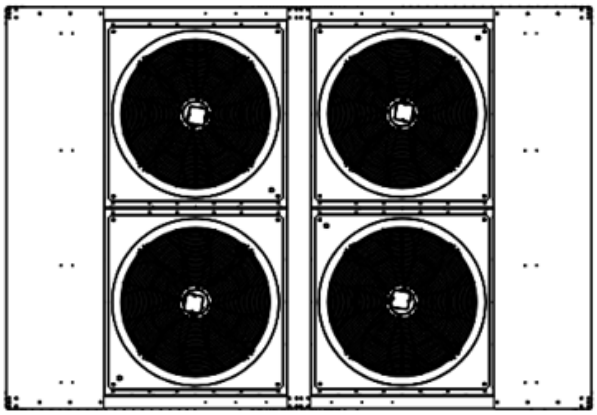


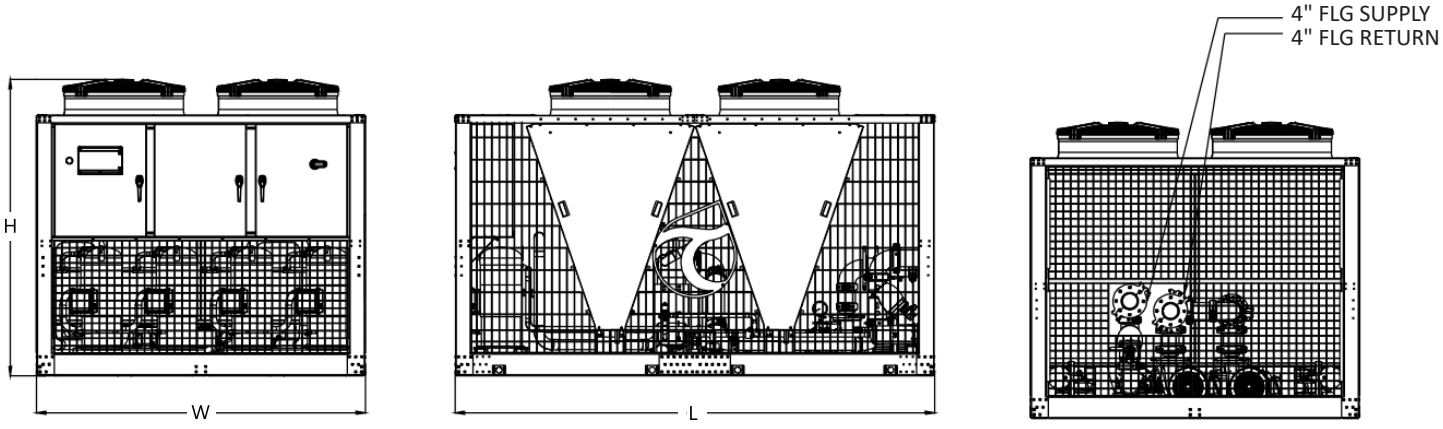
KSEA060



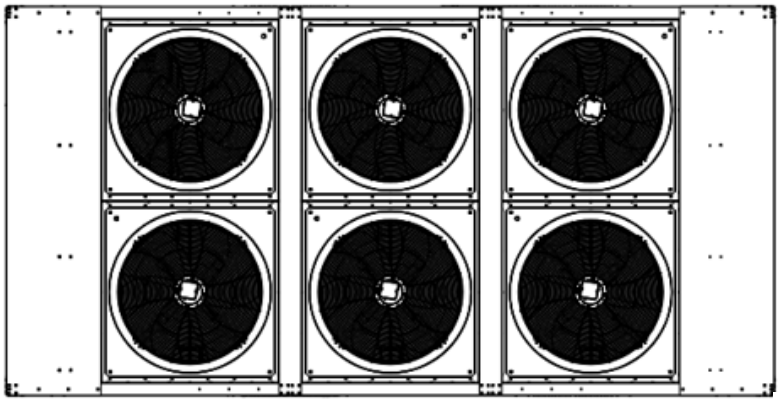


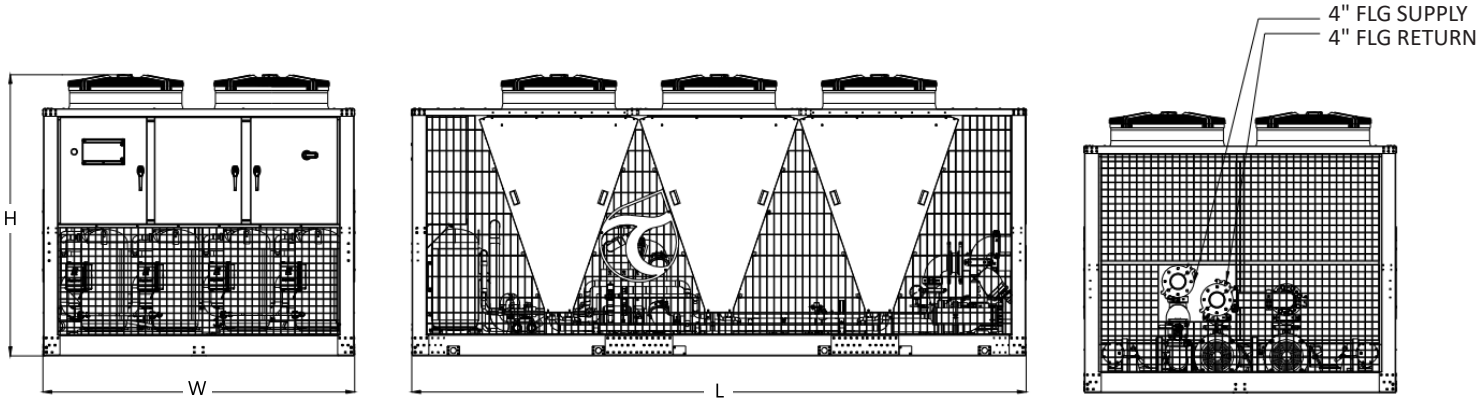
KSEA080



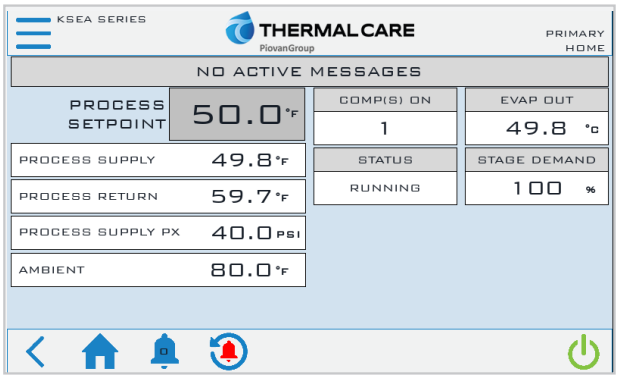


KSEA100 and KSEA120

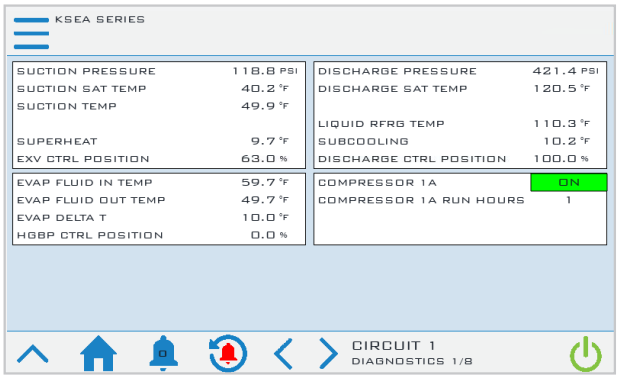




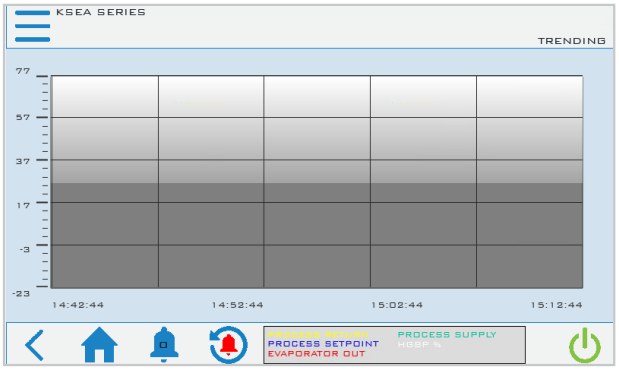
7-Inch Color Touch Screen



Home Screen



Diagnostics Screen



Trending Data Screen

Specifications

Description of Functions	Control Features
Process Fluid Supply and Return Temperatures	●
Evaporator Fluid Leaving Temperature	●
Process Fluid Supply Pressure	●
Refrigerant Suction Pressure	●
Refrigerant Suction Temperature and Superheat	●
Refrigerant Liquid Temperature and Subcooling	●
Refrigerant Discharge Pressure	●
Refrigerant Discharge Temperature	●
High Process Fluid Temperature	●
Low Process Fluid Temperature	●
Evaporator Fluid Freeze	●
Evaporator Fluid Flow Switch	●
Refrigerant High Pressure	●
Ambient Temperature Tracking	●
Phase Monitor	●
Compressor Overload	●
Condenser Fan Overload	●
Remote Setpoint (0-10 VDC)	●
Remote Start / Stop	●
Alarm Horn	●
Alarm Contact	●
CONNEX4.0 Ready	●
Modbus RTU	●
Modbus TCP / IP	●
BACnet MS / TP	○
BACnet / IP	○

Legend: **Standard = ●** **Optional = ○**

Technical Data

Air-Cooled Condenser Chillers	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
General						
Cooling Capacity[1]	40 tons 141 kW	50 tons 176 kW	60 tons 211 kW	80 tons 281 kW	100 tons 352 kW	120 tons 422 kW
Set Point Range	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C
Number of Compressors	2	2	2	4	4	4
Process In / Out (in) – Standard Process In / Out (in) – High Flow	3 4	3 4	4 4	4 4	4 6	4 6
Minimum Unloaded Capacity	20 ton 70 kW	25 ton 88 kW	30 ton 106 kW	20 ton 70 kW	25 ton 88 kW	30 ton 106 kW
with HGBP Option	10 ton 35 kW	13 ton 46 kW	15 ton 53 kW	10 ton 35 kW	13 ton 46 kW	15 ton 53 kW

Air-Cooled Condenser Chillers (continued)	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
Dimensions, Weights (Chiller Only)						
Length	128 in 3,251 mm	173 in 4,394 mm	173 in 4,394 mm	128 in 3,251 mm	173 in 4,394 mm	173 in 4,394 mm
Width	47 in 1,194 mm	47 in 1,194 mm	47 in 1,194 mm	88 in 2,235 mm	88 in 2,235 mm	88 in 2,235 mm
Height	79 in 2,007 mm	79 in 2,007 mm	79 in 2,007 mm	79 in 2,007 mm	79 in 2,007 mm	79 in 2,007 mm
Shipping Weight	2,876 lbs 1,305 kg	3,976 lbs 1,803 kg	3,976 lbs 1,803 kg	4,654 lbs 2,111 kg	5,954 lbs 2,701 kg	5,954 lbs 2,701 kg
Operating Weight	2,976 lbs 1,350 kg	4,251 lbs 1,928 kg	4,251 lbs 1,928 kg	4,754 lbs 2,156 kg	6,164 lbs 2,796 kg	6,229 lbs 2,825 kg
Dimensions, Weights (Chiller with Standard Pressure Pump)						
Process Pump / Chiller Pump	7.5 hp 5.6 kW	7.5 hp 5.6 kW	10 hp 7.5 kW	15 hp 11.2 kW	15 hp 11.2 kW	20 hp 14.9 kW
Nominal Flow Rate	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
Nominal Discharge Pressure	41 psi 2.8 bar	39 psi 2.7 bar	50 psi 3.4 bar	54 psi 3.7 bar	50 psi 3.4 bar	62 psi 4.3 bar
Shipping Weight	3,009 lbs 1,365 kg	4,109 lbs 1,864 kg	4,176 lbs 1,894 kg	4,858 lbs 2,204 kg	6,158 lbs 2,793 kg	6,223 lbs 2,823 kg
Operating Weight	3,109 lbs 1,410 kg	4,384 lbs 1,989 kg	4,451 lbs 2,019 kg	4,958 lbs 2,249 kg	6,368 lbs 2,888 kg	6,498 lbs 2,947 kg
Dimensions, Weights (Chiller with Standard Pressure Pump with Dedicated Standby Pump)						
Process Pump / Chiller Pump	7.5 hp 5.6 kW	7.5 hp 5.6 kW	10 hp 7.5 kW	15 hp 11.2 kW	15 hp 11.2 kW	20 hp 14.9 kW
Nominal Flow Rate	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
Nominal Discharge Pressure	41 psi 2.8 bar	39 psi 2.7 bar	50 psi 3.4 bar	54 psi 3.7 bar	50 psi 3.4 bar	62 psi 4.3 bar
Shipping Weight	3,142 lbs 1,425 kg	4,242 lbs 1,924 kg	4,376 lbs 1,985 kg	5,062 lbs 2,296 kg	6,362 lbs 2,886 kg	6,492 lbs 2,945 kg
Operating Weight	3,242 lbs 1,471 kg	4,517 lbs 2,049 kg	4,651 lbs 2,110 kg	5,162 lbs 2,341 kg	6,637 lbs 3,011 kg	6,767 lbs 3,070 kg
Dimensions, Weights (Chiller with High Pressure Pump)						
Process Pump / Chiller Pump	15 hp 11.2 kW	15 hp 11.2 kW	15 hp 11.2 kW	25 hp 18.6 kW	25 hp 18.6 kW	25 hp 18.6 kW
Nominal Flow Rate	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
Nominal Discharge Pressure	86 psi 5.9 bar	82 psi 5.7 bar	80 psi 5.5 bar	90 psi 6.2 bar	82 psi 5.7 bar	76 psi 5.2 bar
Shipping Weight	3,088 lbs 1,401 kg	4,188 lbs 1,900 kg	4,188 lbs 1,900 kg	4,977 lbs 2,258 kg	6,277 lbs 2,847 kg	6,277 lbs 2,847 kg
Operating Weight	3,188 lbs 1,446 kg	4,463 lbs 2,024 kg	4,463 lbs 2,024 kg	5,077 lbs 2,303 kg	6,487 lbs 2,942 kg	6,552 lbs 2,972 kg

Air-Cooled Condenser Chillers (continued)	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
Dimensions, Weights (Chiller with High Pressure Pump with Dedicated Standby Pump)						
Process Pump / Chiller Pump	15 hp 11.2 kW	15 hp 11.2 kW	15 hp 11.2 kW	25 hp 18.6 kW	25 hp 18.6 kW	25 hp 18.6 kW
Nominal Flow Rate	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
Nominal Discharge Pressure	86 psi 5.9 bar	82 psi 5.7 bar	80 psi 5.5 bar	90 psi 6.2 bar	82 psi 5.7 bar	76 psi 5.2 bar
Shipping Weight	3,300 lbs 1,497 kg	4,400 lbs 1,996 kg	4,400 lbs 1,996 kg	5,300 lbs 2,404 kg	6,600 lbs 2,994 kg	6,600 lbs 2,994 kg
Operating Weight	3,400 lbs 1,542 kg	4,675 lbs 2,121 kg	4,675 lbs 2,121 kg	5,400 lbs 2,449 kg	6,810 lbs 3,089 kg	6,875 lbs 3,118 kg

[1]Cooling tons based on 12,000 BTU/Hr/ton with 50°F (10°C) leaving coolant and 95°F (32°C) ambient air, R410A or R454B refrigerant.

Electrical Data (60 Hz)

Chiller Only	Rated Voltage[1] FLA @ 208		Rated Voltage[1] FLA @ 230		Rated Voltage[1] FLA @ 460		Rated Voltage[1] FLA @ 575	
	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]
KSEA040	186	300	186	300	89	125	69	100
KSEA050	220	350	220	350	111	175	79	110
KSEA060	272	400	272	400	124	175	99	150
KSEA080	351	450	351	450	169	225	131	175
KSEA100	417	600	417	600	210	300	150	200
KSEA120	515	700	515	700	236	300	188	250

Chiller with Standard Pressure Pump(s)	Rated Voltage[1] FLA @ 208		Rated Voltage[1] FLA @ 230		Rated Voltage[1] FLA @ 460		Rated Voltage[1] FLA @ 575	
	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]
KSEA040	211	300	209	300	101	150	79	110
KSEA050	246	350	244	350	123	175	89	125
KSEA060	304	450	301	450	139	200	111	175
KSEA080	398	500	394	500	190	250	149	200
KSEA100	**465**	**600**	**460**	**600**	**232**	**300**	**168**	**200**
KSEA120	**576**	**700**	**570**	**700**	**264**	**350**	**211**	**300**

Chiller with High Pressure Pump(s)	Rated Voltage[1] FLA @ 208		Rated Voltage[1] FLA @ 230		Rated Voltage[1] FLA @ 460		Rated Voltage[1] FLA @ 575	
	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]	MCA[2]	MOP[3]
KSEA040	233	350	229	350	111	150	87	125
KSEA050	268	400	264	400	133	200	97	150
KSEA060	320	450	315	450	146	200	117	175
KSEA080	427	600	420	500	203	250	159	200
KSEA100	**493**	**600**	**486**	**600**	**245**	**300**	**178**	**225**
KSEA120	**591**	**800**	**584**	**700**	**271**	**350**	**216**	**300**

[1]Allowable voltage range is ± 10% from rated voltage.
[2]MCA is Minimum Circuit Amps, used for minimum wire size requirement.
[3]MOP is Maximum Overcurrent Protection, used for sizing main power protection device.