



GUIDE SPECIFICATIONS

GE Series 1/2-6 Ton R-410A

GENERAL

Units shall be performance certified to ISO standard 13256-1 for Water Loop Heat Pump, Ground Water Heat Pump and Ground Loop Heat Pump applications. Units intended for use on ground loop applications shall have an optional extended range package installed. Units shall be Underwriter Laboratories (UL and cUL) listed for safety on all models. Each unit shall be run tested at the factory. Each unit shall be pallet mounted and stretch wrapped. The units shall be manufactured in an ISO9001:2000 certified facility.

The units shall be warranted by the manufacturer against defects in materials and workmanship for a period of one year on all parts, and 5 years on the compressor.

The units shall be designed to operate with entering fluid temperatures between 50°F (10°C) and 100°F (38°C) in cooling and between 50°F (10°C) and 80°F (27°C) in heating. With the optional factory installed extended range package units shall operate with entering fluid temperatures between 50°F (10°C) and 110°F (43.3°C) in cooling and between 25°F (-3.9°C) and 80°F (27°C) in heating.

CASING & CABINET

The cabinet shall be fabricated from heavy-gauge steel finished with Galvalume® plus, an aluminum-zinc alloy with a clear acrylic coating for additional corrosion protection. The interior shall be insulated with ½" (12.7mm) thick, multi density, coated, glass fiber. All units shall allow sufficient service access to replace the compressor without unit removal. One blower and two compressor compartment access panels shall be removable with supply and return ductwork in place. A duct collar shall be provided on the supply air opening. A 2" (50.8mm) return air filter rack/duct collar with 1" (25.4mm) thick filters shall be provided with each unit. The units shall have an insulated divider panel between the air handling section and the compressor section to minimize the transmission of compressor noise, and to permit service testing without air bypass. Units shall have a stainless steel condensate drain pan.

REFRIGERATION CIRCUITS

Units shall utilize refrigerant R-410A. All units shall contain a sealed refrigerant circuit including a hermetic compressor, capillary tube metering device with strainer or balance port expansion valve, refrigerant drier, finned tube air-to-refrigerant heat exchanger, refrigerant reversing valve and service ports. Compressor shall be high efficiency, designed for heat pump duty, internally spring isolated (if reciprocating type) for maximum sound attenuation and mounted on rubber vibration isolators. Compressor motors shall be equipped with overload protection. Refrigerant reversing valves shall be pilot operated sliding piston type with replaceable encapsulated magnetic coils energized only during the cooling cycle. The finned tube coil shall be constructed of lanced aluminum fins not exceeding fourteen fins per inch bonded to rifled copper tubes in a staggered pattern not less than three rows deep and have a 450 PSIG (3100 kPa) working pressure. Coils shall have a baked polyester enamel coating for protection against most airbourn chemicals. The coil shall have aluminum end sheets. The coaxial water-to-refrigerant heat exchanger shall be con-

structed of a convoluted copper (optional cupronickel) inner tube and steel outer tube with a designed refrigerant working pressure of 600 PSIG (4125 kPa) and designed water side working pressure of no less than 400 PSIG (2750 kPa).

EXTENDED RANGE PACKAGE

An optional extended range package shall include a bi-flow balanced port expansion valve metering device in place of capillary tubes and insulated water to refrigerant heat exchanger.

FAN MOTOR & ASSEMBLY

The fan shall be direct drive centrifugal forward curved type with a dynamically balanced wheel. The housing and wheel shall be designed for quiet low velocity operation. The fan housing shall be removable from the unit without disconnecting the supply air ductwork for servicing of the fan motor. The fan motor shall be three speed PSC type for direct drive units and single speed for belt drive units. The motor shall be permanently lubricated and have thermal overload protection.

ELECTRICAL

Controls and safety devices will be factory wired and mounted within the unit. Controls shall include fan relay, compressor contactor, 24V transformer, reversing valve coil and solid state lockout controller (UPM) The UPM controller shall include the following features: Anti-short cycle time delay, random start, brown out/surge/power interruption protection, 120 second low pressure switch bypass timer, shutdown on high or low refrigerant pressure safety switch inputs, shutdown for the optional freezestat or high level condensate sensors, 24 VAC alarm output for remote fault indication, unit reset at thermostat or disconnect, ability to defeat time delays for servicing and automatic intelligent reset. The UPM shall automatically reset after a safety shut down and restart the unit, if the cause of the shut down no longer exists, after the anti-short cycle and random start timers expire. Should a fault re-occur within 60 minutes after reset, then a permanent lockout will occur. A light emitting diode (LED) shall annunciate the following alarms: high refrigerant pressure, low refrigerant pressure, low water temperature and a high level of condensate in the drain pan (when equipped with the optional low water temperature and high level condensate sensors). The LED will display each fault condition as soon as the fault occurs. If a permanent lockout occurs, then the fault LED will display the type of fault until the unit is reset.

Safety devices include a low pressure cutout set a 20 PSIG (140 kPa) for loss of charge protection (freezestat and/or high discharge gas temperature sensor is not acceptable) and a high pressure cutout control set at 600 PSIG (4125 kPa). An optional energy management relay that allows unit control by an external source shall be factory installed.

A terminal block with screw terminals shall be provided for control wiring.

PIPING

Supply, return water and condensate drain connections shall be brass female pipe thread fittings and mounted flush to cabinet exterior with optional stainless steel, Braided hose kit with swivel connectors.