

ALLIED AIR COMMERCIAL PACKAGED ROOFTOP UNITS

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This section contains product and technical information only.
 For additional information and product pricing please contact your local ECCO Supply Sales Branch.

ECCO is proud to be a member of:

 ASHRAE American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. www.ashrae.org	 HRAI Heating, Refrigeration and Air Conditioning Institute of Canada www.hrai.ca	 HARDI Heating, Airconditioning & Refrigeration Distributors International www.hardinet.org	 SMACNA Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	 SPIDA Spiral Duct Manufacturers Association www.spida.org
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INTRODUCTION

FEATURES

- **R-410A Refrigerant** - Environmentally friendly
- **Scroll Compressors** - Single speed scroll compressors are furnished on all models.
- **Crankcase Heaters** - Protect compressors from refrigerant liquid migration in the off cycle improving product reliability.
- **High Pressure Switches** - Protect compressor.
- **Isolated Compressor Compartment** - Allows performance check during normal compressor operation without disrupting airflow.
- **Independent Motor Mounts** - Allows for easy and efficient service access without removing the top panel.
- **Downflow Airflow** - Horizontal airflow with optional horizontal curb.
- **Two Fork Lift Slots on Three Sides** - Easy to pick up and transport units from almost any angle.
- **Corrosion-Resistant Removable, Drain Pan** - Provides application flexibility, durability and improved serviceability.
- **Thermostatic Expansion Valves** - Provide peak cooling performance across the entire application range.
- **MERV 8 or MERV 13 Filters** - Available as field installed option, provide an enhanced level of indoor air quality, and can help the building qualify for additional LEED credits.

APPROVALS

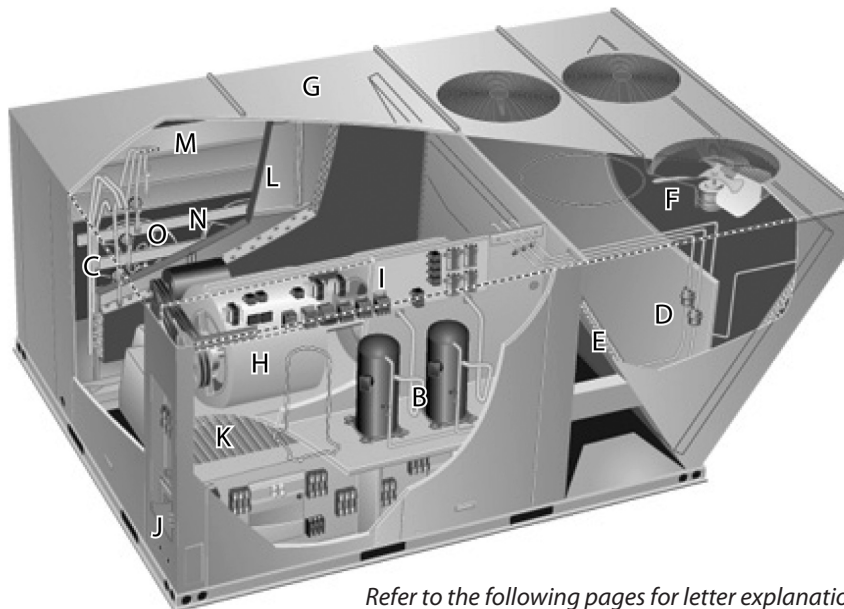
- ETL listed.
- Efficiency rating CSA.
- Components bonded for grounding to meet safety standards for servicing required by UL, ULC and National and Canadian Electrical Codes.
- All models are certified in accordance with the ULE certification program, which is based on AHRI Standard 340/360-2007.
- All models are ASHRAE 90.1-2007 compliant.
- ISO 9001 Registered Manufacturing Quality System.

WARRANTY

- Limited five years on compressors.
- Limited one year all other covered components.

COOLING SYSTEM

- Designed to maximize sensible and latent cooling performance at design conditions.
- System can operate from 30°F to 125°F without any additional controls.



Refer to the following pages for letter explanation.

(cont'd on next page)

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INTRODUCTION (cont'd)**R-410A REFRIGERANT**

Non-chlorine based, ozone friendly, R-410A.

B — SCROLL COMPRESSORS

Scroll compressors on all models for high performance, reliability and quiet operation.

Resiliently mounted on rubber grommets for quiet operation.

Compressor Crankcase Heaters

Protects against refrigerant migration that can occur during low ambient operation.

C — THERMAL EXPANSION VALVES

Assures optimal performance throughout the application range.

Removable element head.

D — FILTER/DRIERS

High capacity filter/drier protects the system from dirt and moisture.

High Pressure Switches

Protects the compressor from overload conditions such as dirty condenser coils, blocked refrigerant flow, or loss of outdoor fan operation.

Freezestats

Protects the evaporator coil from damaging ice build-up due to conditions such as low/no airflow, or low refrigerant charge.

E — COIL CONSTRUCTION

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested.

Evaporator Coil

Cross row circuiting with rifled copper tubing optimizes both sensible and latent cooling capacity.

Condenser Coil

Angled, slab design helps protect coil from possible contact or hail damage.

Condensate Drain Pan

Plastic pan, sloped to meet drainage requirements of ASHRAE 62.1.

Side or bottom drain connections.

F — OUTDOOR COIL FAN MOTORS

Thermal overload protected, totally enclosed, permanently lubricated ball bearings, shaft up, wire basket mount.

Outdoor Coil Fans

PVC coated fan guard furnished.

REQUIRED SELECTIONS

Cooling Capacity

Specify nominal cooling capacity of the unit.

OPTIONS/ACCESSORIES

Field Installed**Condensate Drain Trap**

Available in copper or PVC.

Low Ambient Kit

Cycles the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F.

CABINET

G — CONSTRUCTION

Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation.

Base rails have rigging holes.

Three sides of the base rail have forklift slots.

Raised edges around duct and power entry openings in the bottom of the unit provide additional protection against water entering the building.

Airflow Choice

Units are available in downflow (vertical) or horizontal return air flow configuration.

Horizontal air flow requires Horizontal Roof Curb.

Horizontal Return Air Panel Kit is also required if converting a downflow configured unit to horizontal air flow.

Power Entry

Electrical lines can be brought through the unit base or through horizontal access knock-outs.

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INTRODUCTION (cont'd)**CONSTRUCTION** (cont'd)**Exterior Panels**

Constructed of heavy-gauge, galvanized steel with a two-layer enamel paint finish.

Insulation

All panels adjacent to conditioned air are fully insulated with nonhygroscopic fiberglass insulation.

Unit base is fully insulated. The insulation also serves as an air seal to the roof curb, eliminating the need to add a seal during installation.

Access Panels

Access panels are provided for the economizer/filter section, heating/blower section, and the compressor/controls section.

OPTIONS/ACCESSORIES

Factory Installed**Corrosion Protection**

A completely flexible immersed coating with an electrodeposited dry film process. (AST ElectroFin E-Coat) Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing, ASTM 1153 Standard Specification for Methyl Isobutyl Ketone.

Hinged Access Panels

Hinged access panels for the filter section, the blower section and compressor/controls section.

All hinged panels have seals and quarter-turn latching handles to provide a tight air and water seal.

Field Installed**Coil Guards**

Painted, galvanized steel wire guards to protect outdoor coil. Not used with Hail Guards.

Hail Guards

Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coils from hail damage.

Not used with Coil Guards.

Horizontal Return Air Panel Kit

Required for horizontal applications with Horizontal Roof Curb, contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit, see dimension drawings.

H — BLOWER

A wide selection of supply air blower options are available to meet a variety of airflow requirements.

Motor

Overload protected, equipped with ball bearings. Belt drive motors are offered on all models and are available in several different sizes to maximize air performance.

Supply Air Blower

Forward curved blades, double inlet, blower wheel is statically and dynamically balanced. Equipped with ball bearings and adjustable pulley (allows speed change).

Blower assembly slides out of unit for servicing.

REQUIRED SELECTIONS

Order blower motor horsepower and drive kit number required when base unit is ordered.

CONTROLS

I — UNIT CONTROL

All control voltage is provided via a 24V (secondary) transformer with built-in circuit breaker protection.

Heat/Cool Staging

Capable of up to 2 heat / 2 cool staging with a third party DDC control system or thermostat.

Low Voltage Terminal Block

Provides screw terminal connections for thermostat or controller wiring.

Night Setback Mode

Saves energy by closing outdoor air dampers and operating supply fan on thermostat demand only.

OPTIONS/ACCESSORIES

Field Installed**Smoke Detector**

Photoelectric type, installed in supply air section, return air section or both sections. Available with power board and single sensor (supply or return) or power board and two sensors (supply and return). Power board located in unit control compartment.

ELECTRICAL

All units include terminal block and fuse block in power entry junction box for single power entry application.

REQUIRED SELECTIONS

Voltage Choice

Specify when ordering base unit.

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INTRODUCTION (cont'd)

OPTIONS/ACCESSORIES

Factory or Field Installed**J — DISCONNECT SWITCH**

Accessible from outside of unit, spring loaded weatherproof cover furnished.

Field Installed**K — ELECTRIC HEAT**

Helix wound nichrome elements, individual element limit controls, wiring harness. Unit fuse block is furnished as standard.

GFI Service Outlets (2)

115V ground fault circuit interrupter (GFCI) type, field wired.

INDOOR AIR QUALITY

L — AIR FILTERS

Disposable 2 inch filters furnished as standard.

OPTIONS/ACCESSORIES

Field Installed**High Efficiency Air Filters**

Disposable MERV 8 or MERV 13 (Minimum Efficiency Reporting Value based on ASHRAE 52.2) efficiency 2 inch pleated filters.

Healthy Climate® UVC Germicidal Lamps

Germicidal lamps emit ultra-violet (UV-C) energy, which has been proven to be effective in reducing microbes such as viruses, bacteria, yeasts, and molds. This process either destroys the organism or controls its ability to reproduce.

UV-C energy greatly reduces the growth and proliferation of mold and other bioaerosols (bacteria and viruses) on illuminated surfaces (particularly coil and drain pan).

Lamps are field installed in the blower/evaporator coil section.

All necessary hardware for installation is included.

Lamps operate on 208/230V power supply. Step-down transformer must be field supplied when used with 460V and 575V rooftop units.

Magnetic safety interlock terminates power when access panels are removed.

Approved by ETL.

**Indoor Air Quality (CO₂) Sensors**

Monitors CO₂ levels, reports to the Unit Controller which adjusts economizer dampers as needed.

SERVICEABILITY

Designed to streamline general maintenance and decrease troubleshooting time.

Marked & Color-Coded Wiring

All electrical wiring is color-coded and marked to identify which components it is connecting.

Electrical Plugs

Positive connection electrical plugs are used to connect common accessories or maintenance parts for easy removal or installation.

Access Panels

Large access panels are provided for quick and easy access to maintenance areas.

Blower Access

Supply air blower parts are located near the access door for easy servicing and adjustment.

Thermal Expansion Valve Access

Thermal expansion valves are located near the perimeter of the unit for easier access.

Removable element head allows change out of element and bulb without removing the TXV.

Coil Cleaning

Slab condenser coils provided for easier cleaning.

Standard Components

A large number of common maintenance parts are standard throughout the entire range of sizes (3-25 tons), reducing the need to carry a lot of different parts to the job or maintain in inventory.

Compressor Compartment

Compressors are located near the perimeter of the unit for easier access.

Compressors are isolated from the condenser airflow allowing system operation checks to be done without changing the airflow across the outdoor coils.

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INTRODUCTION (cont'd)**M — ECONOMIZER/EXHAUST OPTIONS****Factory or Field Installed****Economizer - Downflow or Horizontal With Outdoor Air Hood**

Parallel gear-driven action return air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24-volt, fully-modulating, spring return motor, adjustable minimum damper position. Outdoor air hood is furnished.

Single sensible control is furnished with economizer. Outdoor air temperature sensor enables economizer if the outdoor temperature is less than the setpoint of the control. Outdoor Air Hood is included when economizer is factory installed and is furnished with economizer when ordered for field installation.

Field Installed**Single Economizer Enthalpy Control**

Enthalpy sensor enables the economizer when the outdoor air enthalpy is below the configured setpoint.

Differential (Dual) Economizer Enthalpy Control

Order two single, enthalpy control kits. One is field installed in the return air section, the other in the outdoor air section. Allows the economizer control board to select between outdoor air or return air, whichever has lower enthalpy.

N — DOWNFLOW BAROMETRIC RELIEF DAMPERS WITH EXHAUST HOOD

Allow relief of excess air.

Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle.

Exhaust hood with bird screen is furnished.

Horizontal Barometric Relief Dampers With Exhaust Hood

For use when unit is configured for horizontal applications requiring an economizer.

Allows relief of excess air

Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle.

Field installed in return air duct.

Exhaust hood with bird screen is furnished.

O — POWER EXHAUST FAN

Installs internal to unit for downflow applications only with economizer option. Provides exhaust air pressure relief. Interlocked to run when supply air blower is operating, fan runs when outdoor air dampers are 50% open (adjustable), motor is overload protected. Requires Economizer with Outdoor Air Hood and Downflow Barometric Relief Dampers. Dual fans are 20 in. diameter with 5 blades with (2) 1/3 hp motors.

OUTDOOR AIR OPTIONS**Factory or Field Installed****Outdoor Air Damper - Downflow or Horizontal With Air Hood**

Linked mechanical dampers, 0 to 25% (fixed) outdoor air adjustable, installs in unit. Includes outdoor air hood.

Automatic model features fully modulating spring return damper motor with plug-in connection.

Manual model features parallel blade, gear-driven dampers with adjustable fixed position.

Outdoor Air Hood is included when damper is factory installed and is furnished with damper when ordered for field installation.

ROOF CURBS

Nailer strip furnished, mates to unit, US National Roofing Contractors Approved, shipped knocked down.

**Downflow
Clip Curbs**

Uses interlocking tabs to fasten corners together. No tools required.

Standard Curbs

Curb corners fasten together with furnished hardware.

Adjustable Pitched Curb

Curbs are regionally sourced.

Dimensions will vary based upon the source. Contact your local ECCO Supply representative for a detailed cut sheet with applicable dimensions.

Horizontal

Converts unit from downflow to horizontal (side) air flow, return air is on unit, supply air is on curb, see dimension drawings. Curbs for rooftop applications meet National Roofing Code requirements. Requires Horizontal Return Air Panel Kit. Available in 26, 30, 37 and 41 inch heights. Optional Insulation Kit is available to help prevent sweating.

CEILING DIFFUSERS**Ceiling Diffusers (Flush or Step-Down)**

Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings.

Transitions (Supply and Return)

Used with diffusers, installs in roof curb, galvanized steel construction, flanges furnished for duct connection to diffusers, fully insulated.

ALLIED AIR COMMERCIAL PACKAGED ROOFTOP UNITS

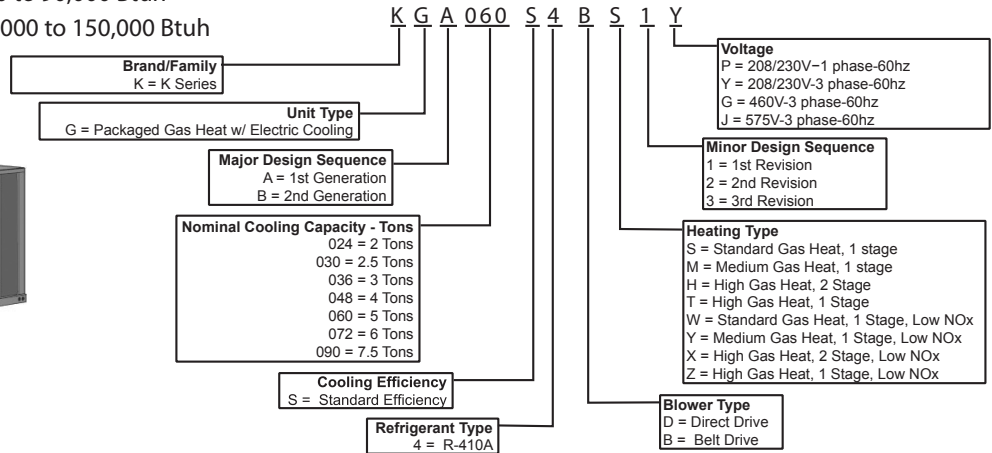
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PACKAGED GAS/ELECTRIC ROOFTOP UNITS 60 HZ - KG

2 TO 7.5 TONS

Net Cooling Capacity – 23,600 to 90,000 Btuh

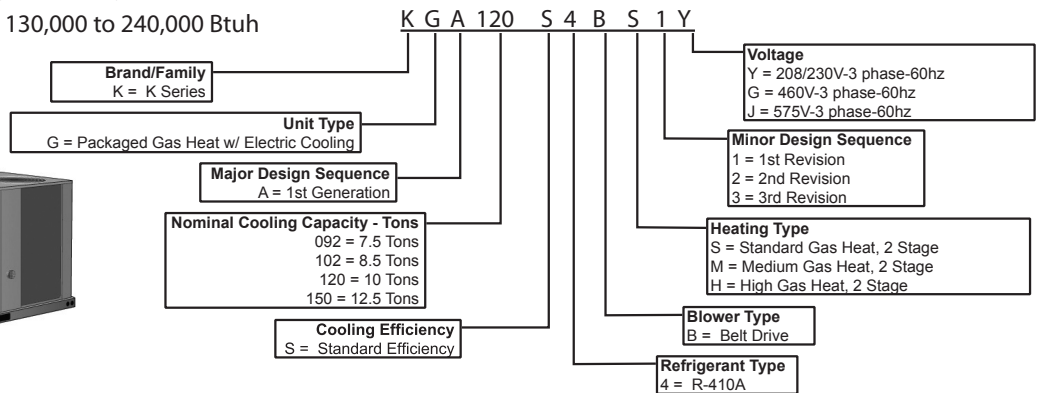
Gas Input Heat Capacity – 65,000 to 150,000 Btuh



7.5 TO 12.5 TONS

Net Cooling Capacity – 86,500 to 138,000 Btuh

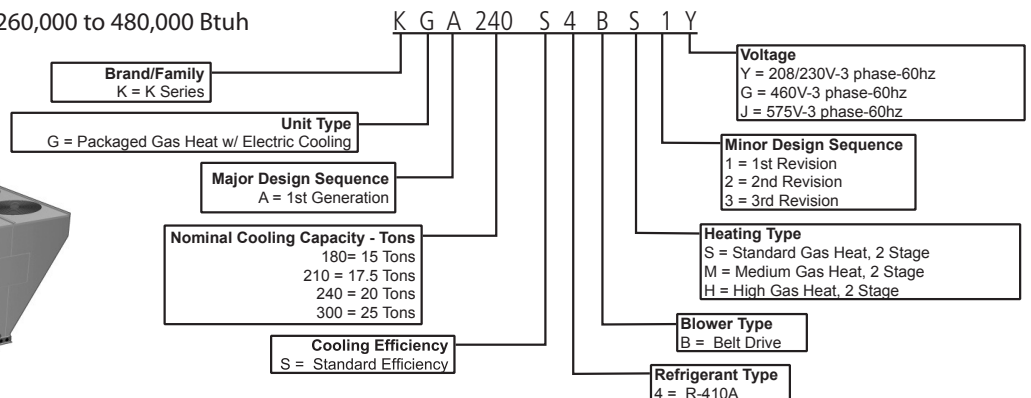
Gas Input Heat Capacity – 130,000 to 240,000 Btuh



15 TO 25 TONS

Net Cooling Capacity – 176,000 to 270,000 Btuh

Gas Input Heat Capacity – 260,000 to 480,000 Btuh



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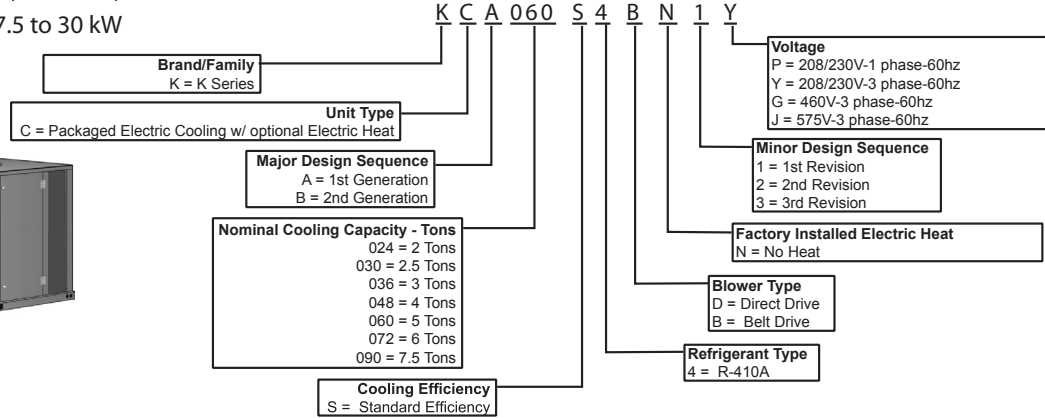
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PACKAGED ELECTRIC/ELECTRIC ROOFTOP UNITS 60 HZ – KC

2 TO 7.5 TONS

Net Cooling Capacity – 23,600 to 90,000 Btuh

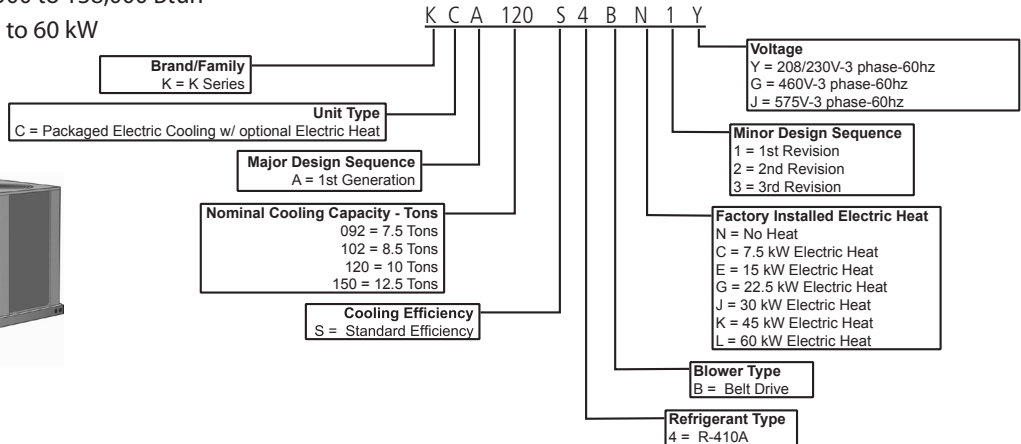
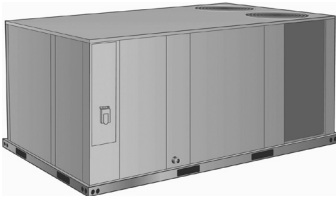
Optional Electric Heat – 7.5 to 30 kW



7.5 TO 12.5 TONS

Net Cooling Capacity – 86,500 to 138,000 Btuh

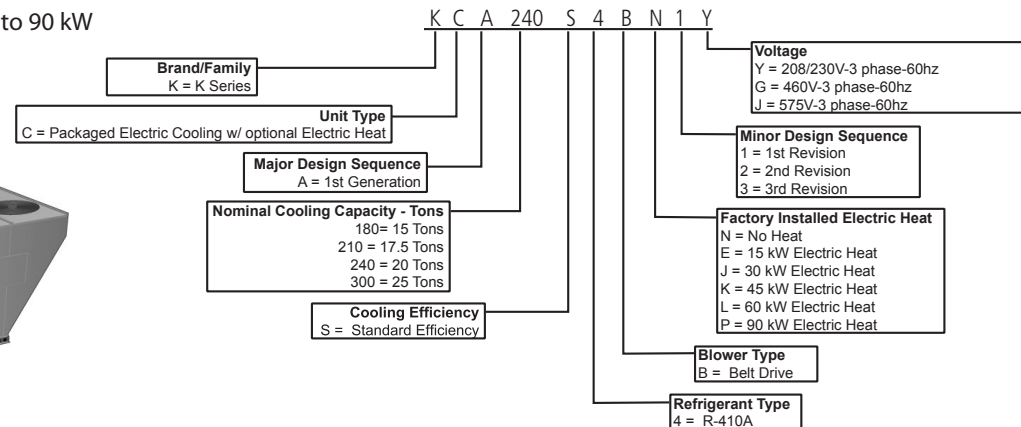
Optional Electric Heat – 7.5 to 60 kW



15 TO 25 TONS

Net Cooling Capacity – 176,000 to 270,000 Btuh

Optional Electric Heat – 15 to 90 kW



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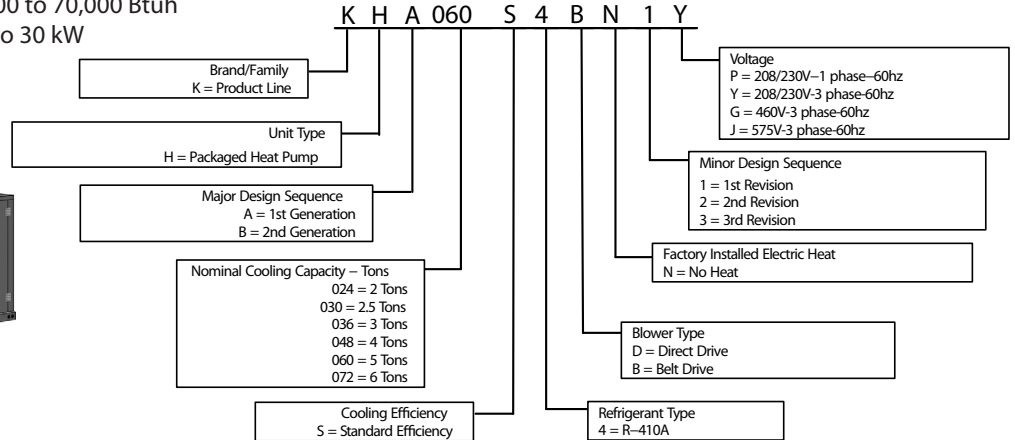
PACKAGED HEAT PUMP ROOFTOP UNITS 60 HZ – KH

2 TO 6 TONS

Net Cooling Capacity – 22,800 to 69,000 Btuh

Net Heating Capacity – 24,000 to 70,000 Btuh

Optional Electric Heat – 7.5 to 30 kW

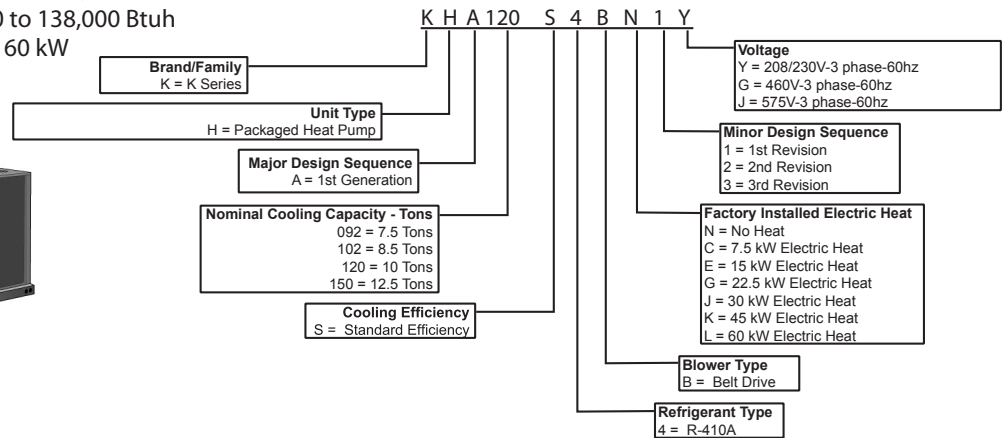


7.5 TO 12.5 TONS

Net Cooling Capacity – 87,000 to 138,000 Btuh

Net Heating Capacity - 89,000 to 138,000 Btuh

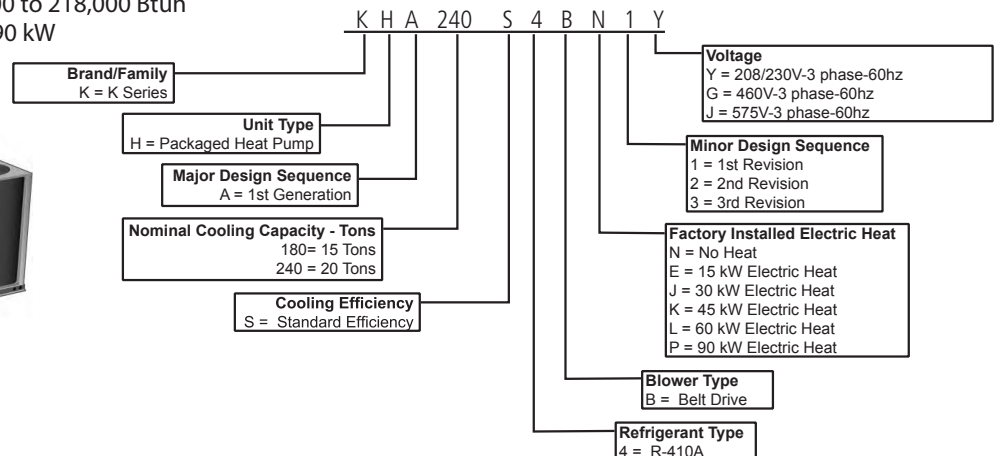
Optional Electric Heat - 7.5 to 60 kW



15 AND 20 TONS

Net Cooling Capacity – 174,000 to 218,000 Btuh

Optional Electric Heat - 15 to 90 kW



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