



CCH9

ConstantComfort®

Product Specifications

HIGH EFFICIENCY 19 SEER TWO-STAGE HEAT PUMP WITH OBSERVER™ COMMUNICATING CONTROL SYSTEM

2 THRU 5 TONS SPLIT SYSTEM
208-230 Volt, 1-phase, 60 Hz
REFRIGERATION CIRCUIT

- Copeland Scroll® Ultratech™ compressors on all models
- Crankcase Heater factory installed
- Suction line accumulator factory installed
- Bi-flow filter-drier included for field installation
- Integrated solid state control with Time-Temperature Defrost
- High and low pressure switches
- Discharge gas thermostat
- Copper tube / aluminum fin coil

PERFORMANCE

- Self configuring installation capabilities with Observer Communicating Wall Control
- Outdoor temperature sensor factory installed
- Ball Bearing ECM Fan Motors on all models
- High performance compressor sound shield standard
- Isolation compressor grommets

EASY TO INSTALL AND SERVICE

- Text based diagnostics with Observer Communicating Wall Control
- Only 2 control wires required from communicating indoor unit to condenser
- Easy access service valves on all models
- Innovative control box design
- External high and low refrigerant service ports
- Only two screws to access control panel
- Factory charged with R-410A refrigerant

BUILT TO LAST

- High gloss, baked-on powder coat finish over galvanized steel
- Post-painted (black) coil fins
- Coated, weather-resistant cabinet screws
- Coated inlet grille with 3/8" (10mm) spacing for extra protection (hail guard)
- Corner posts for extra strength and style

WARRANTY*

- 10 year No Hassle Replacement™ limited warranty
- 5 year parts limited warranty (including compressor and coil)
 - With timely registration, an additional 5 year parts limited warranty (including compressor and coil)

* Applies to original purchaser/homeowner, some limitations may apply. See Warranty certificate for complete details.



TSTAT0101SC
(Sold Separately)



This product has been designed and manufactured to meet ENERGY STAR criteria for energy efficiency when matched with appropriate coil components. However, proper refrigerant charge and proper air flow are critical to achieve rated capacity and efficiency. Installation of this product should follow the manufacturer's refrigerant charging and air flow instructions. Failure to confirm proper charge and airflow may reduce energy efficiency and shorten equipment life.

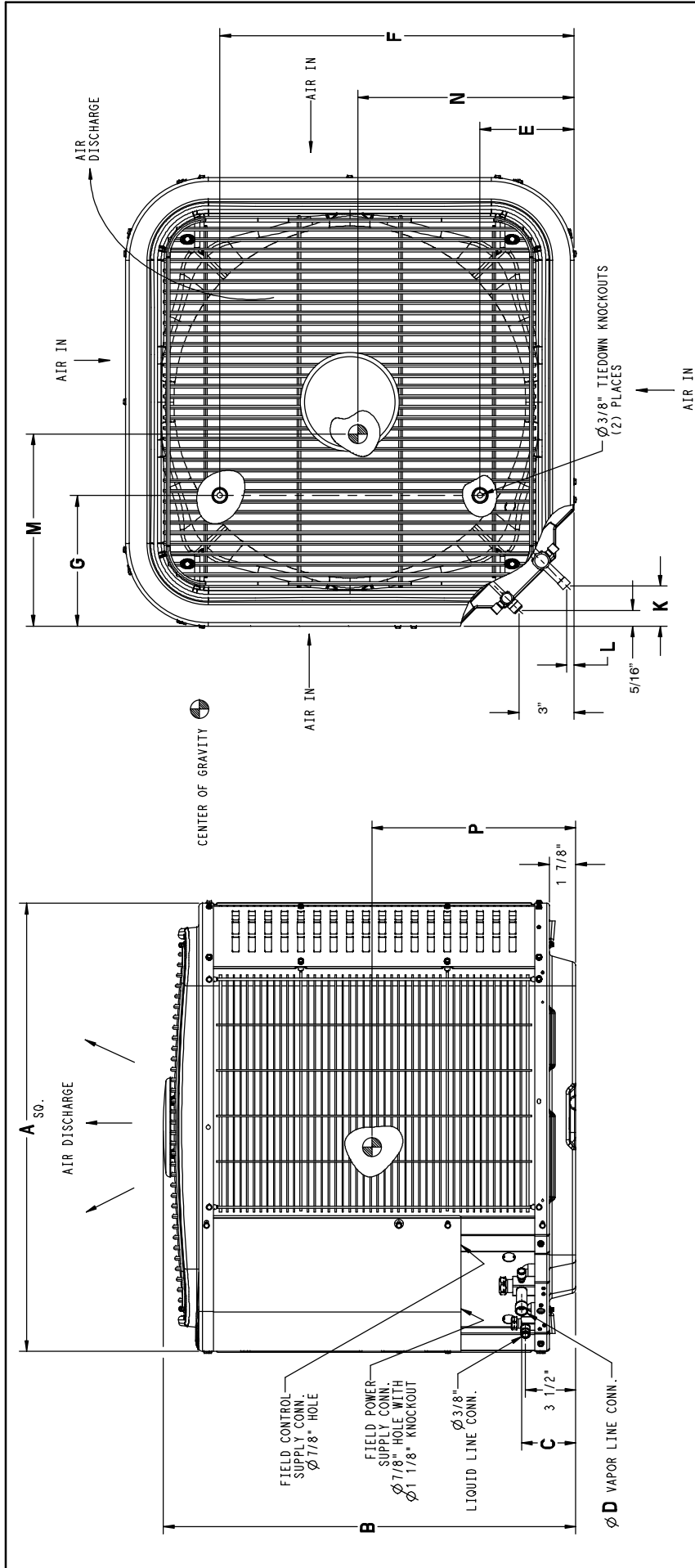


Use of the AHRI Certified™ Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

| Model Number | Size (tons) | Nominal Btu/hr | Min. Circuit Ampacity | Max. Fuse or Breaker | Operating Dimensions height x width x depth in. (mm) | Ship / Operating Weight lbs. (kg) |
|--------------|-------------|----------------|-----------------------|----------------------|--|-----------------------------------|
| CCH924GKA3 | 2 | 24,000 | 17.6 | 25 | 40-1/4x35x35 (1023x889x889) | 309/266(140/121) |
| CCH936GKA2 | 3 | 36,000 | 24.8 | 40 | 43-11/16x35x35 (1110x889x889) | 328/283(149/128) |
| CCH948GKA2 | 4 | 48,000 | 35.4 | 50 | 47-1/16x35x35 (1196x889x889) | 365/319 (166/145) |
| CCH960GKA2 | 5 | 60,000 | 38.4 | 60 | 47-1/16x35x35 (1196x889x889) | 365/320 (166/145) |

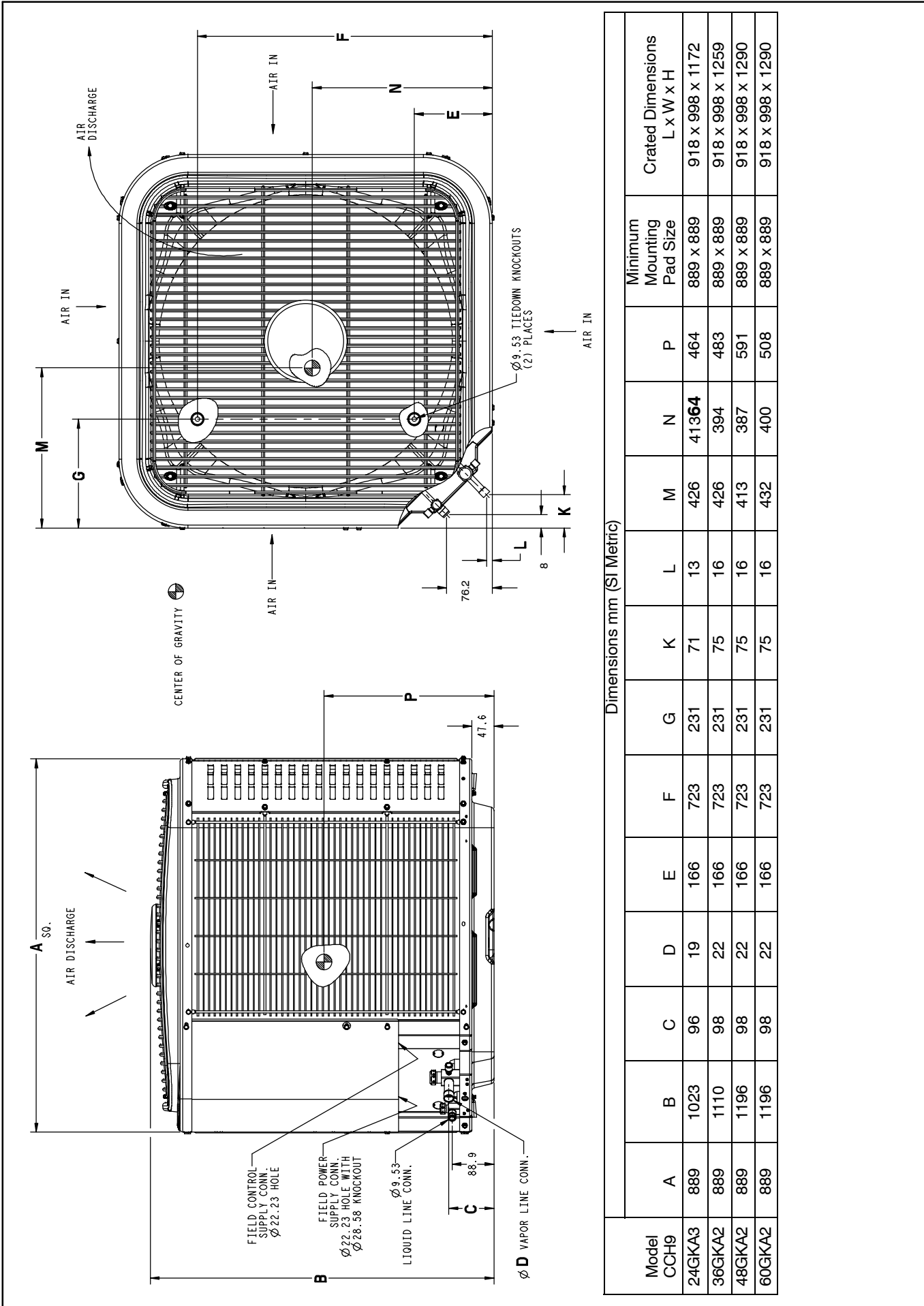
| OUTDOOR UNIT MODEL NUMBER IDENTIFICATION GUIDE (single phase) | | | | | | | | | | | |
|---|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|
| Digit Position: | 1 | 2 | 3 | 4 | 5, 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Example Part Number: | C | C | H | 9 | 24 | G | K | A | 2 | 0 | 0 |
| C = Day & Night Mainline BRANDING | | | | | | | | | | | |
| C = Communicating KEY CHARACTERISTIC | | | | | | | | | | | |
| A = Air Conditioner H = Heat Pump TYPE | | | | | | | | | | | |
| 6 = 16 SEER 7 = 17 SEER 8 = 18 SEER 9 = 19 SEER NOMINAL EFFICIENCY | | | | | | | | | | | |
| 24 = 24,000 BTUH = 2 tons 36 = 36,000 BTUH = 3 tons 48 = 48,000 BTUH = 4 tons 60 = 60,000 BTUH = 5 tons NOMINAL CAPACITY | | | | | | | | | | | |
| G = Coil Guard Grille FEATURES | | | | | | | | | | | |
| K = 208-230-1-60 VOLTAGE | | | | | | | | | | | |
| Sales Code | | | | | | | | | | | |
| Engineering Revision | | | | | | | | | | | |
| Extra Digit | | | | | | | | | | | |
| Extra Digit | | | | | | | | | | | |

| ACCESSORIES PART NUMBER IDENTIFICATION GUIDE | | | | | | | | | |
|---|----------|----------|----------|----------|----------|-----------|-----------|-----------|--|
| Digit Position: | 1 | 2 | 3 | 4 | 5 | 6, 7 | 8, 9 | 10, 11 | |
| Example Part Number: | N | A | S | A | 0 | 01 | 01 | CH | |
| N = Non-Branded | | | | | | | | | |
| A = Accessory PRODUCT GROUP | | | | | | | | | |
| S = Split System (AC & HP) KIT USAGE | | | | | | | | | |
| A = Original B = 2nd Generation MAJOR SERIES | | | | | | | | | |
| 0 = Generic or Not Applicable 2 = R-22 4 = R-410A REFRIGERANT | | | | | | | | | |
| Product Identifier Number | | | | | | | | | |
| Package Quantity | | | | | | | | | |
| Type of Kit (Example: CH = Crankcase Heater) | | | | | | | | | |



Dimensions Inches (English)

| Model | A | B | C | D | E | F | G | K | L | M | N | P | Minimum Mounting Pad Size | Crated Dimensions L x W x H |
|--------|----|----------|-------|-----|--------|---------|-------|---------|-----|--------|--------|--------|---------------------------|-----------------------------|
| CCH9 | 35 | 40-1/4 | 3-3/4 | 3/4 | 6-9/16 | 28-7/16 | 9-1/8 | 2-15/16 | 1/2 | 16-3/4 | 16-1/4 | 18-1/4 | 35 x 35 | 36-1/8 x 39-1/4 x 46-1/8 |
| 24GKA3 | 35 | 43-11/16 | 3-7/8 | 7/8 | 6-9/16 | 28-7/16 | 9-1/8 | 2-15/16 | 5/8 | 16-3/4 | 15-1/2 | 19 | 35 x 35 | 36-1/8 x 39-1/4 x 49-9/16 |
| 36GKA2 | 35 | 47-1/16 | 3-7/8 | 7/8 | 6-9/16 | 28-7/16 | 9-1/8 | 2-15/16 | 5/8 | 16-1/4 | 15-1/4 | 23-1/4 | 35 x 35 | 36-1/8 x 39-1/4 x 50-13/16 |
| 48GKA2 | 35 | 47-1/16 | 3-7/8 | 7/8 | 6-9/16 | 28-7/16 | 9-1/8 | 2-15/16 | 5/8 | 17 | 15-3/4 | 20 | 35 x 35 | 36-1/8 x 39-1/4 x 50-13/16 |
| 60GKA2 | 35 | 47-1/16 | 3-7/8 | 7/8 | 6-9/16 | 28-7/16 | 9-1/8 | 2-15/16 | 5/8 | 17 | 15-3/4 | 20 | 35 x 35 | 36-1/8 x 39-1/4 x 50-13/16 |



Dimensions mm (SI Metric)

| Model | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Minimum Mounting Pad Size | Crated Dimensions L x W x H |
|--------|-----|------|----|----|-----|-----|-----|----|----|----|-----|-------|-----|-----------|------------------|---|---------------------------|-----------------------------|
| CCH9 | 889 | 1023 | 96 | 19 | 166 | 723 | 231 | 50 | 13 | 71 | 426 | 41364 | 464 | 889 x 889 | 918 x 998 x 1172 | | | |
| 24GKA3 | 889 | 1110 | 98 | 22 | 166 | 723 | 231 | 16 | 16 | 75 | 426 | 394 | 483 | 889 x 889 | 918 x 998 x 1259 | | | |
| 36GKA2 | 889 | 1196 | 98 | 22 | 166 | 723 | 231 | 16 | 16 | 75 | 413 | 387 | 591 | 889 x 889 | 918 x 998 x 1290 | | | |
| 48GKA2 | 889 | 1196 | 98 | 22 | 166 | 723 | 231 | 16 | 16 | 75 | 432 | 400 | 508 | 889 x 889 | 918 x 998 x 1290 | | | |
| 60GKA2 | 889 | 1196 | 98 | 22 | 166 | 723 | 231 | 16 | 16 | 75 | 432 | 400 | 508 | 889 x 889 | 918 x 998 x 1290 | | | |

| PHYSICAL DATA | | | | |
|---|-----------------|-----------------|-----------------|-----------------|
| Model Size | 24GKA3 | 36GKA2 | 48GKA2 | 60GKA2 |
| Nominal Cooling Capacity (BTU/hr) | 24,000 | 36,000 | 48,000 | 60,000 |
| SEER Rating‡ | 18.0 | 19.0 | 17.0 | 16.0 |
| Sound Rating**, High Stage (dBA) | 69 | 70 | 72 | 73 |
| Low Stage (dBA) | 69 | 66 | 68 | 72 |
| ECM Fan Motor HP | 1/5 | 1/5 | 1/5 | 1/5 |
| Fan RPM Hi Speed | 613 | 689 | 765 | 828 |
| Fan RPM Low Speed | 556 | 582 | 659 | 742 |
| Fan CFM Hi Speed | 2934 | 3700 | 4281 | 4668 |
| Fan CFM Low Speed | 2662 | 3124 | 3728 | 4209 |
| Coil Face Area (ft ²) | 25.15 | 27.53 | 30.18 | 30.18 |
| Coil Rows – fins per inch | 2–20 | 2–20 | 2–20 | 2–20 |
| Low Pressure Switch | Open Pressure | 23 ± 5 PSIG | | |
| | Close Pressure | 55 ± 5 PSIG | | |
| Hi Pressure Switch | Open Pressure | 670 ± 10 PSIG | | |
| | Close Pressure | 470 ± 25 PSIG | | |
| Liquid Line Connection Size in. (mm) | 3/8 (10) | 3/8 (10) | 3/8 (10) | 3/8 (10) |
| Vapor Line Connection Size in. (mm) | 3/4 (19) | 7/8 (22) | 7/8 (22) | 7/8 (22) |
| Recommended Line Set Liquid Tube Diameter in. (mm) | 3/8 (10) | 3/8 (10) | 3/8 (10) | 3/8 (10) |
| Recommended Line Set Vapor Tube Diameter in. (mm)* | 3/4 (19)* | 7/8 (22)* | 1–1/8 (29)* | 1–1/8 (29)* |
| * Recommended Vapor Tube Line size is for standard installations. These recommendations may not apply to "Long Line" installations. When the total equivalent line length exceeds 80 feet (24.4m) or there is more than 20 feet (6.1m) vertical separation between indoor and outdoor units, consult the Long Line Application Guideline document before purchasing/installing line sets. | | | | |
| Factory Charge R-410A lbs. (kg) | 13.58 (6.16) | 14.03 (6.36) | 14.45 (6.55) | 14.70 (6.67) |
| Required Subcooling ° F (° C) | 11 (6.1) | 11 (6.1) | 9 (5.0) | 11 (6.1) |
| Outdoor Unit Factory Piston Size (used in Outdoor Unit for heating mode) | 46 | 57 | 61 | 67 |

| ELECTRICAL DATA (208–230–1–60, voltage range 197V – 253V) | | | | |
|---|--------|--------|--------|--------|
| Model Size | 24GKA3 | 36GKA2 | 48GKA2 | 60GKA2 |
| Minimum Circuit Ampacity – MCA (amps) | 17.6 | 24.8 | 35.4 | 38.4 |
| Maximum OverCurrent Protective device – MOCP (amps) | 25 | 40 | 50 | 60 |
| Compressor RLA (Rated Load Amps) | 12.6 | 18.0 | 26.2 | 28.8 |
| LRA (Locked Rotor Amps) | 58.3 | 83.0 | 104.0 | 152.9 |
| Fan Motor FLA (Full Load Amps) | 1.8 | 2.3 | 2.6 | 2.4 |

‡ Highest sales volume tested combination

**Sound Rating tested in accordance with AHRI Standard 270–95 (not listed with AHRI).

| R-410A COOLING CAPACITY LOSS FOR VARIOUS LINE LENGTHS & TUBE DIAMETERS | | | | | | | | | | | |
|--|---|------------------------------------|---|-------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Unit Nominal Size (Btuh) | Maximum Liquid Line Diameter (OD) in.(mm) | Vapor Line Diameters (OD) in. (mm) | Cooling Capacity Loss (%) at Total Equivalent Line Length, feet (m) | | | | | | | | |
| | | | 26-50 (7.9-15.2) | 51-80 (15.5-24.4) | 81-100 (24.7-30.5) | 101-125 (30.8-38.1) | 126-150 (38.4-45.7) | 151-175 (46.0-50.3) | 176-200 (53.6-60.0) | 201-225 (61.3-68.6) | 226-250 (68.9-76.2) |
| 24 2-Stage HP | 3/8 (10) | 5/8 (16) | 0 | 1 | 1 | 2 | 3 | 3 | 4 | 4 | 5 |
| | | 3/4 (19) | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 36 2-Stage HP | | 5/8 (16) | 1 | 2 | 4 | 5 | 6 | 7 | 9 | 10 | 11 |
| | | 3/4 (19) | 0 | 0 | 1 | 1 | 2 | 2 | 3 | 3 | 4 |
| | | 7/8 (22) | 0 | 0 | - | - | - | - | - | - | - |
| 48 2-Stage HP | | 3/4 (19) | 1 | 2 | 2 | 3 | 4 | 5 | 6 | 7 | 7 |
| | | 7/8 (22) | 0 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 4 |
| | | 1-1/8 (29) | 0 | 0 | - | - | - | - | - | - | - |
| 60 2-Stage HP | | 3/4 (19) | 1 | 2 | 4 | 5 | 6 | 8 | 9 | 10 | 11 |
| | | 7/8 (22) | 0 | 1 | 2 | 2 | 3 | 4 | 4 | 5 | 5 |
| | | 1-1/8 (29) | 0 | 0 | - | - | - | - | - | - | - |

Standard Length – 80 ft. (24.4m) or less total equivalent length.

Applications in this area are long line. Accessories are required as shown recommended on the AC & HP R410A Split System Long Line Applications Guideline.

Applications in this area may have height restrictions that limit allowable total equivalent length, when outdoor unit is below indoor unit.

- Applications in this area are not recommended due to insufficient oil return.

TESTED AHRI COMBINATION RATINGS*

NOTE: Ratings contained in this document are subject to change at any time.

For AHRI ratings certificates, please refer to the AHRI directory. www.ahridirectory.org

Additional ratings and system combinations can be accessed via the Day and Night database at:

<http://www.icpeqp.com/AHRIratings/ratings.aspx?Brand=DayAndNight>

Or scan this QR code:



| COOLING & HEATING PERFORMANCE FOR COMBINATION RATINGS | | | | | | | | | | | | | Indoor Models | | | | |
|---|-------------------------------|---------------|----------|-------|------|------|--------|------|----------|-------|------|------|---------------|-------|------|------|-----|
| AHRI STANDARD RATINGS | | | | | | | | | | | | | | | | | |
| Unit Size | Indoor Model *Tested Model | Furnace Model | Cooling | | | | | | Heating | | | | | | | | |
| | | | Capacity | | SEER | EER | ID CFM | | Capacity | | COP | | Capacity | | COP | | |
| | | | High | Low | | | High | Low | High | Low | High | Low | High | Low | High | Low | |
| CCH924GKA3 | *FCM4X36**** | | 24800 | 22200 | 18 | 13.5 | 800 | 760 | 25000 | 18600 | 4.2 | 4.4 | 15500 | 10500 | 2.96 | 2.6 | 10 |
| CCH936GKA2 | *FCM4X60**** | | 36600 | 31600 | 19 | 13.7 | 1207 | 924 | 37400 | 25400 | 4.34 | 4.38 | 22800 | 15100 | 3.04 | 2.68 | 10 |
| CCH948GKA2 | *FCM4X60**** | | 47000 | 38000 | 17 | 13.2 | 1400 | 1120 | 47500 | 34000 | 3.88 | 4.08 | 29800 | 20400 | 2.9 | 2.66 | 9.5 |
| CCH960GKA2 | *FCM4X60**** | | 56000 | 45500 | 16 | 12.5 | 1750 | 1400 | 58500 | 39500 | 3.8 | 3.92 | 36000 | 24000 | 2.82 | 2.52 | 9.5 |

2009 ENERGY STAR compliance for combinations with all three: SEER 14.50 or higher and EER 12.00 or higher and HSPF 8.2 or higher.

* AHRI = Air Conditioning, Heating & Refrigeration Institute

EERA — Energy Efficiency Ratio – 'A' conditions – 80°F (26.6°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35° C) outdoor wb.

SEER — Seasonal Energy Efficiency Ratio

NOTES:

1. Ratings are net values reflecting the effects of circulating fan motor heat. Supplemental electric heat is not included.
2. Tested outdoor/indoor combinations have been tested in accordance with DOE test procedures for central air conditioners. Ratings for other combinations are determined under DOE computer simulation procedures.
3. Determine actual CFM values obtainable for your system by referring to fan performance data in fan coil or furnace coil literature.
4. Do not apply with capillary tube coils as performance and reliability are significantly affected.

EXPANDED COOLING PERFORMANCE RATINGS For GKA300 Outdoor / Indoor Models

For complete ratings information, use the AHRI website directory search: www.AHRIdirectory.org. New ratings may be listed online before Specification Sheets are updated.

Table with multiple sections: 'High Cool, CCH924GKA300 Outdoor With FCM4X36**** Indoor Cooling' and 'Low Cool, CCH924GKA300 Outdoor With FCM4X36**** Indoor Cooling'. Each section includes a grid of performance ratings (BTUH, kW, etc.) for various indoor and outdoor conditions, categorized by CFM and equipment type (MBh, S/T, AMPS, HI PR, LO PR).

EXPANDED COOLING PERFORMANCE RATINGS For GKA200 Outdoor / Indoor Models

For complete ratings information, use the AHRI website directory search: www.AHRIdirectory.org.
New ratings may be listed online before Specification Sheets are updated.

High Cool CCH960GKA200 Outdoor With FCM4X60**** Indoor Cooling

Outdoor Ambient Temperature - Degrees F, Dry Bulb

Table with columns for CFM, MBh†, S/T‡, AMPS*, HI PR, LO PR and rows for 1500, 1625, 1750, 2000 CFM at 75, 85, 95, 105, 115 outdoor temperatures.

Low Cool CCH960GKA200 Outdoor With FCM4X60**** Indoor Cooling

Outdoor Ambient Temperature - Degrees F, Dry Bulb

Table with columns for CFM, MBh†, S/T‡, AMPS*, HI PR, LO PR and rows for 1200, 1300, 1400, 1600 CFM at 75, 85, 95, 105, 115 outdoor temperatures.

† Total capacities are net (I.D blower heat subtracted) system capacities based on 25' line set.

If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur.

* System amps are total of indoor and outdoor amps

‡ S/T are based on 80 F db entering air at the indoor coil. For sensible capacities at other than 80 F db, deduct 835 Btu/h per 1000 cfm of indoor coil air from MBhxS/T for each degree below 80 F, or add 835 Btu/h per 1000 cfm of indoor coil air from MBhxS/T for each degree above 80 F

†† At TVA rating indoor condition (75 F db/ 63 F wb), All other indoor air temperatures are at 80 F db

EXPANDED HEATING PERFORMANCE RATINGS GKA300 For Outdoor / Indoor Models

For complete ratings information, use the AHRI website directory search: www.AHRIdirectory.org. New ratings may be listed online before Specification Sheets are updated.

High Heat CCH924GKA300 Size Outdoor With FCM4X36**** Indoor Heating

Table with columns for Outdoor Ambient Temperature (-3, 7, 17, 27, 37, 47, 57, 67) and Entering Indoor Temperature (65, 70, 75). Rows include CFM, MBhT, T/R, AMPS, HI PR, and LO PR for capacities 650, 700, 750, 800, and 850.

Low Heat CH924GKA300 Size Outdoor With FCM4X36**** Indoor Heating

Table with columns for Outdoor Ambient Temperature (-3, 7, 17, 27, 37, 47, 57, 67) and Entering Indoor Temperature (65, 70, 75). Rows include CFM, MBhT, T/R, AMPS, HI PR, and LO PR for capacities 400, 500, 600, 700, and 800.

† Total capacities are net (I.D blower heat added) system capacities based on 25' line set. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur. * System amps are total of indoor and outdoor amps. T/R - Temp Rise is based on 25' line set. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in Temp Rise may occur.

EXPANDED HEATING PERFORMANCE RATINGS For GKA200 Outdoor / Indoor Models

For complete ratings information, use the AHRI website directory search: www.AHRI.org. New ratings may be listed online before Specification Sheets are updated.

High Heat CCH948GKA200 Size Outdoor With FCM4X60**** Indoor Heating

Table with columns for Outdoor Ambient Temperature (-3, 7, 17, 27, 37, 47, 57, 67) and Entering Indoor Temperature (-3, 7, 17, 27, 37, 47, 57, 67). Rows include CFM, MBH, T/R, AMPS, HI PR, and LO PR for capacities 1200, 1300, 1400, and 1600.

Low Heat CCH948GKA200 Size Outdoor With FCM4X60**** Indoor Heating

Table with columns for Outdoor Ambient Temperature (-3, 7, 17, 27, 37, 47, 57, 67) and Entering Indoor Temperature (-3, 7, 17, 27, 37, 47, 57, 67). Rows include CFM, MBH, T/R, AMPS, HI PR, and LO PR for capacities 960, 1040, 1120, and 1280.

† Total capacities are net (I.D blower heat added) system capacities based on 25' line set. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in capacity may occur. * System amps are total of indoor and outdoor amps T/R - Temp Rise is based on 25' line set. If additional tubing length and/or indoor unit is located above outdoor unit, a slight variation in Temp Rise may occur.

ACCESSORY USAGE GUIDELINES

| Accessory | REQUIRED FOR LONG LINE APPLICATIONS* (Over 80 ft. / 24.38 m) | REQUIRED FOR SEA COAST APPLICATIONS (within 2 miles/3.22 km) |
|---|--|--|
| Accumulator | Yes, Standard | Standard |
| Compressor Start Assist Capacitor and Relay | Yes | No |
| Crankcase Heater | Yes, Standard | No |
| Liquid Line Solenoid Valve | See Long Line Applications Guideline | No |
| Support Feet | No | Recommended |

* For tubing line sets between 80 and 200 ft. (24.38 and 60.96 m) and/or 20 ft. (6.09 m) vertical differential, refer to Long Line Applications Guideline.

ACCESSORIES

| Part Number | Description | Used On GKA2/3 Model Size |
|-------------|--|---------------------------|
| NASA001LS | Liquid Line Solenoid Valve, HP, R-22 or R-410A | ALL |
| NASA001TD | Time Delay Relay, Indoor Blower | ALL |
| NASA001SF | Support Feet, 4" (102mm) tall | ALL |
| NASA00106SS | Snow Stand Kit | ALL |
| NASA010SC | Hard Start Kit (Capacitor & Relay) | N/A |
| NASA012SC | Hard Start Kit (Capacitor & Relay) | 24, 36 |
| NASA015SC | Hard Start Kit (Capacitor & Relay) | 48, 60 |

WALL CONTROL

| | | |
|-------------|---|-----|
| TSTAT0101SC | Observer™ Self Configuring Communicating Wall Control | ALL |
|-------------|---|-----|