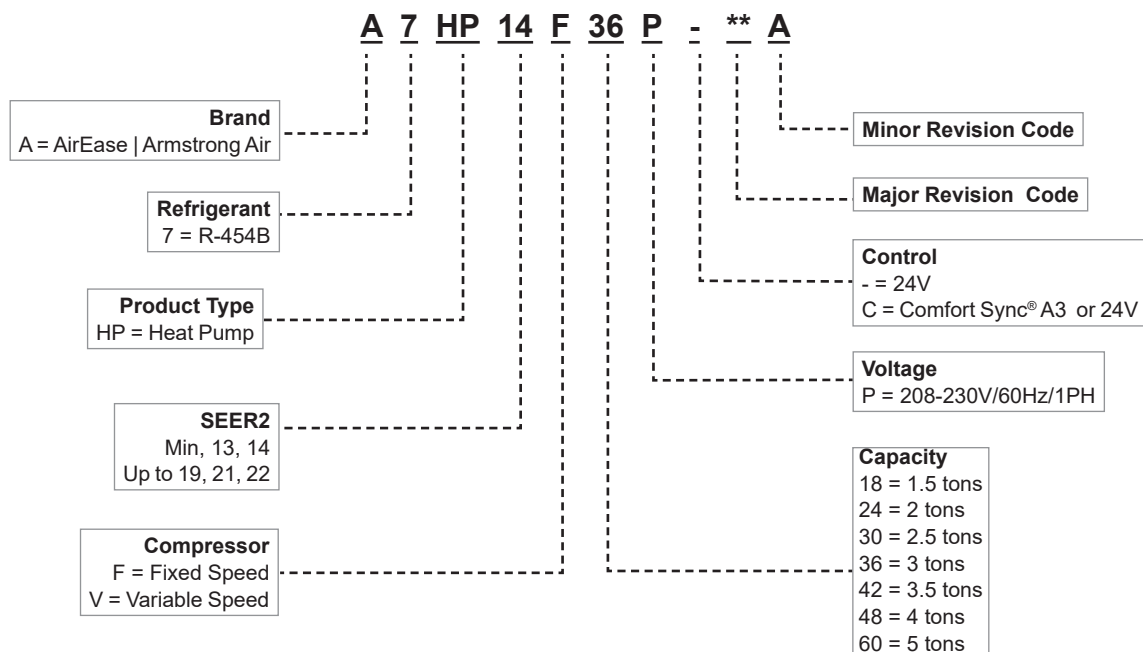


**A7HP14F**

Single-Stage | Omniguard® Coil | R-454B | 1-Phase | 60Hz

**RESIDENTIAL  
PRODUCT SPECIFICATIONS**1.5 to 5 Tons  
SEER2 up to 17.0  
HSPF2 up to 8.2**MODEL NUMBER IDENTIFICATION**

## FEATURE HIGHLIGHTS

- Outdoor Coil Fan
- Omniguard® Coil
- High Pressure Switch
- Expansion Valve - Outdoor Unit
- Four-Way Reversing Valve
- High-Capacity Liquid Line Drier
- Scroll Compressor
- Compressor Sound Dampening System
- Defrost Control
- Heavy Gauge Steel Cabinet
- Louvered Coil Protection
- Refrigerant Line Connections

## CONTENTS

Model Number Identification . . . . .	1
Approvals And Warranty . . . . .	3
Features. . . . .	3
Specifications . . . . .	7
Optional Accessories - Order Separately . . . . .	7
Optional Controls - Order Separately . . . . .	8
Unit Sound Ratings . . . . .	9
Field Wiring . . . . .	9
Installation Clearances . . . . .	9
Dimensions - Unit . . . . .	10
TXV Substitution . . . . .	11
TXV Ranges . . . . .	11

## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Certified to AHRI Standard 210-240-2023
- For AHRI Certified system match-ups and expanded ratings, visit [www.alliedratings.com](http://www.alliedratings.com)
- Omniguard® certified
- Sound rated to AHRI Standard 270-2008 test conditions
- Rated According to U.S. Department of Energy (DOE) test procedures
- Units and components UL, NEC, and CEC bonded for grounding to meet safety standards for servicing
- ETL certified (U.S. and Canada)
- ISO 9001 Registered Manufacturing Quality System

### WARRANTY

10-years limited warranty on all parts, extended warranty available.

Coverage (Standard 5-year limited parts warranty plus an additional 5-year limited extended parts warranty).

Warranty must be registered online within 60 days of installation to qualify for 10-year coverage.

Unregistered equipment defaults to 5-year coverage.

See full warranty at [www.alliedair.com](http://www.alliedair.com) for terms, conditions, and exclusions.

## FEATURES

### APPLICATIONS

- 1.5 through 5 tons
- Sound levels as low as 71 dBA
- Single phase power supply
- Vertical air discharge
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled, piped and wired
- Factory test operated

**NOTE** - When heat pumps are used with gas furnaces, a dual-fuel compatible thermostat or a zone control system with dual-fuel capabilities must be used (order separately)

**NOTE** - Installer must set outdoor unit, connect refrigerant lines and make electrical connections to complete job

### REFRIGERATION SYSTEM

#### **R-454B Refrigerant**

- Low GWP (Global Warming Potential)
- Zero ODP (Ozone Depletion Potential)
- Low Toxicity/Lower Flammability - A2L
- Unit is factory pre-charged

**NOTE** - Total system refrigerant charge is dependent on outdoor unit size, indoor unit size and refrigerant line length.

**NOTE** - Refer to the unit-mounted charging sticker to determine correct amount of charge required.

#### **Outdoor Coil Fan**

- Direct drive fan
- 042-048-060 models have a variable-speed outdoor fan motor for quiet operation
- Vertical air discharge
- Ball bearings
- Inherently protected
- Totally enclosed fan motor
- Fan guard constructed of corrosion-resistant PVC (polyvinyl chloride) coated steel

#### **Omniguard® Coil**

- Enhanced aluminum alloy tube/enhanced fin coil
- Superior corrosion resistance
- Ripple-edged aluminum fins
- Aluminum tube construction
- Lanced fins for maximum fin surface exposure
- Fin collars grip tubing for maximum contact area
- Flared shoulder tubing connections
- Factory tested under high pressure
- Entire coil is accessible for cleaning

#### **High Pressure Switch**

- Protects the system from high pressure conditions that can be a result of fan failure or a blocked/dirty coil
- Automatic reset

#### **Low Pressure Switch**

- Shuts off unit if suction pressure falls below setting
- Provides loss of charge and freeze-up protection
- Automatic reset

## FEATURES

### Expansion Valve - Outdoor Unit

- Designed and sized specifically for heat pump systems
- Sensing bulb is located on the line between reversing valve and the coil
- Sensing bulb senses suction temperature during heating cycle
- Factory installed and piped

### Four-Way Reversing Valve

- Rapid changeover of refrigerant flow direction from cooling to heating and vice versa
- Operates on pressure differential between outdoor unit and indoor unit of the system

### High-Capacity Liquid Line Drier

- Shipped loose for installation flexibility
- Drier traps moisture or dirt that could contaminate the system
- 100% molecular-sieve, bead type, bi-flow drier

## Optional Accessories

### Check/Expansion Valve Kits

- Field installed on indoor units (if required)
- See TXV Usage table
- Chatleff style fitting

### Loss of Charge Switch Kit

- Protects compressor from damage from low refrigerant charge conditions
- SPST, normally-closed
- Automatic reset

### Freezestat

- Installs on or near the vapor line of the indoor coil or on the suction line
- Senses suction line temperature
- Cycles compressor off when suction line temperature falls below its setpoint
- Opens at 29°F and closes at 58°F
- Installs on or near the discharge line of the evaporator or on the suction line

## INDOOR REFRIGERANT DETECTION SYSTEM (RDS)

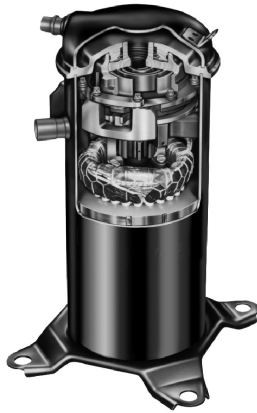
- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Factory or field installed on all indoor units
- Consists of a RDS refrigerant detection sensor and a mitigation control in the indoor unit
- Ensures safe operation for systems equipped with R-454B refrigerant
- Indoor sensor will detect any R-454B refrigerant
- If R-454B refrigerant is detected, the refrigerant detection system will stop compressor operation and operate the blower to reduce concentrations in the conditioned space
- Once safe levels are reached the HVAC system will resume normal operation
- Refer to indoor unit Product Specifications documents for additional details

## FEATURES

### COMPRESSOR

#### Single-Stage Scroll Compressor

- High volumetric efficiency
- Uniform suction flow
- Constant discharge flow
- High efficiency
- Quiet operation
- Low gas pulses during compression reduces operational sound levels
- Compressor motor is internally protected from excessive current and temperature
- Muffler in discharge line reduces operating sound levels
- Compressor is installed in the unit on resilient rubber mounts for vibration free operation



#### Scroll Compressor Operation

- Two involute spiral scrolls matched together generate a series of crescent-shaped gas pockets between them
- During compression, one scroll remains stationary while the other scroll orbits around it
- Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates
- As the spiral movement continues, gas pockets are pushed to the center of the scrolls. Volume between the pockets is simultaneously reduced
- When the pocket reaches the center, gas is now at high pressure and is forced out of a port located in the center of the fixed scrolls
- During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle
- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency
- Compressor is tolerant to the effects of slugging and contaminants. If this occurs, scrolls separate, allowing liquid or contaminants to be worked toward the center and discharged

#### Compressor Crankcase Heater (Factory Installed on -036-042-048-060)

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

#### Compressor Sound Dampening System

- Polyethylene outer shell
- 1/2-inch thick Polyester fiber insulation
- All open edges sealed with one-inch wide hook and loop fastening tape

### Optional Accessories

#### Compressor Crankcase Heater (Optional for -018-024-030 models)

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

### CONTROLS

#### Defrost Control

- Control furnished as standard
- Enables a demand defrost cycle whenever system heating performance falls below optimum levels
- Sensing element on coil determines when defrost cycle is required and when to terminate cycle
- Anti-short cycle (5 minutes) incorporated into the board
- Diagnostic LEDs furnished as an aid in troubleshooting
- Conveniently located in control box

### Optional Accessories

#### Compressor Low Ambient Cut-Off

- Non-adjustable switch (low ambient cut-out)
- Prevents compressor operation when outdoor temperature is below 35°F
- Compressor Hard Start Kit
- Single-phase units are equipped with a PSC compressor motor
- This type of motor normally does not need a potential relay and start capacitor
- In conditions such as low voltage, kit may be required to increase the compressor starting torque
- Indoor Blower Off Delay Relay
- Delays the indoor blower-off time during the cooling cycle. See AHRI System Matches for usage

#### Low Ambient Kit

- Heat pump in the cooling mode will operate satisfactorily down to 45°F outdoor air temperature without any additional controls
- Allows unit to operate properly down to 30°F in the cooling mode

**NOTE** - Crankcase heater (optional for -018-024-030 models) and Freezestat should be installed on compressors equipped with a low ambient kit.

**NOTE** - A compressor lock-out thermostat should be added to terminate compressor operation below recommended operating conditions.

#### Monitor Kit - Service Light

- Ambient compensating thermistor
- Service light thermostat
- For thermostats requiring indicator light inputs

## FEATURES

### CONTROLS (continued)

#### **Optional Accessories (continued)**

##### **Remote Outdoor Temperature Sensor**

- When installed outdoors, sensor allows thermostat to display outdoor temperature
- Sensor is auto-detected when connected to thermostat

**NOTE** - Sensor is required for high and low balance points option.

##### **Mild Weather Kit**

- Heat pump units operate satisfactorily in the heating mode at outdoor air temperatures up to 75°F
- Allows heating operation above 75°F

##### **Outdoor Thermostat Kit**

- Outdoor thermostat locks out some of the electric heating elements on indoor units where two-stage control is applicable
- Outdoor thermostat maintains the heating load on the low power input as long as possible before allowing the full power load to come on the line
- Thermostat kit and Mounting Box must be ordered separately

### CABINET

- Heavy gauge steel construction
- Pre-painted cabinet finish
- Louvered heavy gauge steel panels surround unit on all four sides
- Control box is conveniently located with all controls factory wired
- Drainage holes are provided in base section for moisture removal

##### **Zinc-Coated Steel Unit Base**

- Durable zinc-coated base section resists rust and corrosion

##### **Louvered Coil Protection**

- Steel louvered panels provides complete coil protection
- Panels may be completely removed for ease of coil cleaning and service



##### **Refrigerant Line Connections, Electrical Inlets and Service Valves**

- Sweat connection vapor and liquid lines
- Vapor valve can be fully shut off, while liquid valve may be front seated to manage refrigerant charge while servicing system
- Refrigerant line connections and field wiring inlets are located in one central area of the cabinet
- See dimension drawing

##### **Braze-Free/Press Fitting Flexibility**

- Units can accommodate braze-free or press fittings for installation versatility

## SPECIFICATIONS

Size		018	024	030	036	
Nominal Tonnage		1.5	2	2.5	3	
Sound Rating Number	dBA	72	71	76	75	
Connections (Sweat)	Liquid line (OD) - in.	3/8	3/8	3/8	3/8	
	Vapor line (OD) - in.	3/4	3/4	3/4	7/8	
Refrigerant	<sup>1</sup> R-454B charge furnished	4 lbs. 7 oz.	5 lbs. 3 oz.	6 lbs. 7 oz.	7 lbs. 2 oz.	
Indoor Unit Expansion Valve (TXV)		26Z70	26Z70	26Z70	26Z70	
Outdoor Coil	Net face area - ft. <sup>2</sup>	Outer coil	24.5	24.5	18.7	22.0
		Inner coil	- - -	- - -	18.0	21.5
	Tube diameter - in.	5/16	5/16	5/16	5/16	
	Rows	1	1	2	2	
	Fins - in.	22	22	22	22	
Outdoor Fan	HP	1/8	1/8	1/6	1/5	
	Diameter - in.	22	22	22	26	
	Blades	2	2	2	3	
	Cfm	2840	2840	2670	3590	
	Rpm	825	825	825	825	
	Watts	127	127	162	200	
Shipping Data - lbs.		203	203	205	230	

## ELECTRICAL DATA

Line voltage data (Volts-Phase-Hz)		208/230-1-60	208/230-1-60	208/230-1-60	208/230-1-60
<sup>2</sup> Maximum overcurrent protection (MOCP) amps		15	20	25	35
<sup>3</sup> Minimum circuit ampacity (MCA)		9.7	13.6	16.6	22.2
Compressor	Rated load amps	7.2	10.3	12.5	16.7
	Locked rotor amps	47	60.2	67	93.5
Fan Motor	Full load amps	0.7	0.7	1.0	1.4

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

Compressor Crankcase Heater	27U17	•	•	•	Factory
Compressor	Copeland	10J42	•	•	•
Hard Start Kit	LG	88M91	•	•	•
Compressor Low Ambient Cut-Off		45F08	•	•	•
Freezestat	3/8 in.	93G35	•	•	•
Indoor Blower Off Delay Relay		58M81	•	•	•
Loss of Charge Switch Kit		84M23	•	•	•
<sup>4</sup> Low Ambient Kit		54M89	•	•	•
Mild Weather Kit		11B97	•	•	•
Monitor Kit - Service Light		76F53	•	•	•
Outdoor Thermostat Kit		10Z23	•	•	•
Thermostat Mounting Box	31461	•	•	•	•

NOTE - Extremes of operating range are plus 10% and minus 5% of line voltage.

<sup>1</sup> Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the Installation Instructions for information about line set length and additional refrigerant charge required.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Crankcase Heater and Freezestat are recommended with Low Ambient Kit.

<sup>5</sup> Adds 11-1/2 inches (292 mm) to unit height.



SPECIFICATIONS								
Size			042	048	060			
Nominal Tonnage			3.5	4	5			
Sound Rating Number			dBA	73	73	73		
Connections (Sweat)	Liquid line (OD) - in.		3/8	3/8	3/8			
	Suction line (OD) - in.		7/8	7/8	1-1/8			
Refrigerant			<sup>1</sup> R-454B charge furnished			8 lbs. 5 oz.	8 lbs. 6 oz.	9 lbs. 6 oz.
Indoor Unit Expansion Valve (TXV)			26Z71	26Z71	26Z72			
Outdoor Coil	Net face area - ft. <sup>2</sup>	Outer coil	24.93	24.93	29.09			
		Inner coil	24.13	24.13	28.16			
		Tube diameter - in.	5/16	5/16	5/16			
		Rows	2	2	2			
		Fins - in.	22	22	22			
Outdoor Fan		HP	1/3	1/3	1/3			
		Diameter - in.	22	22	22			
		Blades	4	4	4			
		Cfm	4110	4110	4060			
		Rpm	825	825	825			
		Watts	213	213	224			
Shipping Data - lbs.			284	284	298			
ELECTRICAL DATA								
Line voltage data (Volts-Phase-Hz)			208/230-1-60	208/230-1-60	208/230-1-60			
<sup>2</sup> Maximum overcurrent protection (MOCP) amps			35	50	50			
<sup>3</sup> Minimum circuit ampacity (MCA)			22.3	30.6	32.2			
Compressor	Rated load amps		15.8	22.4	23.7			
	Locked rotor amps		96	126	157			
Fan Motor	Full load amps		2.6	2.6	2.6			
OPTIONAL ACCESSORIES - ORDER SEPARATELY								
Compressor Hard Start Kit	Copeland	10J42		•	•			
	LG	88M91	•					
Compressor Low Ambient Cut-Off		45F08	•	•	•			
Freezestat	3/8 in.	93G35	•	•	•			
Indoor Blower Off Delay Relay		58M81	•	•	•			
Loss of Charge Switch Kit		84M23	•	•	•			
<sup>4</sup> Low Ambient Kit		54M89	•	•	•			
Mild Weather Kit		11B97	•	•	•			
Monitor Kit - Service Light		76F53	•	•	•			
Outdoor Thermostat Kit		10Z23	•	•	•			
Thermostat Mounting Box		31461	•	•	•			

NOTE - Extremes of operating range are plus 10% and minus 5% of line voltage.

<sup>1</sup> Refrigerant charge sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the Installation Instructions for information about line set length and additional refrigerant charge required.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Crankcase Heater and Freezestat are recommended with Low Ambient Kit.

<sup>5</sup> Adds 11-1/2 inches (292 mm) to unit height.

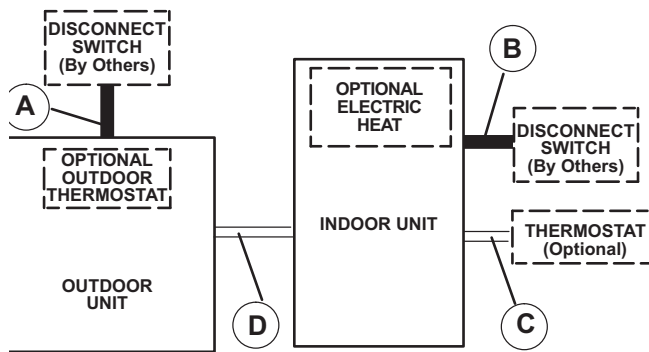


## UNIT SOUND RATINGS

Model	Sound Power <sup>1</sup>	Estimated Sound Pressure (dBA) <sup>2</sup>		
		3.3 Feet (1 Meter)	6.6 Feet (2 Meters)	9.8 Feet (3 Meters)
018	72	64	58	54
024	71	63	57	53
030	76	68	62	58
036	75	67	61	57
042	73	65	59	55
048	73	65	59	55
060	73	65	59	55

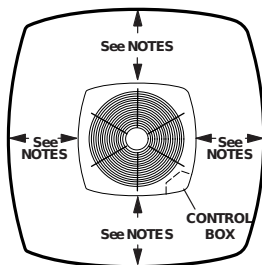
1. Rated in accordance with AHRI standard 270 (2015)
2. Rated in accordance with AHRI standard 275 (2010)
3. Based only on distance factor other factors may change this value such as:
  - Unit location (reflective surfaces adjacent to the unit)
  - Barrier shielding sources
  - Sound path/elevation
  - Outside noise sources

## FIELD WIRING



- A - Two Wire Power (see Electrical Data)
  - B - Two or Three Wire Power (size to heater capacity)
  - C - Twelve Wire Low Voltage 18 ga. minimum  
Fourteen Wire Low Voltage with Optional Outdoor Thermostat
  - D - Eight Wire Low Voltage 18 ga. minimum  
Ten Wire Low Voltage with Optional Outdoor Thermostat
- NOTE** - Field Wiring Not Furnished  
All wiring must conform to NEC or CEC and local electrical codes.

## INSTALLATION CLEARANCES



### Notes

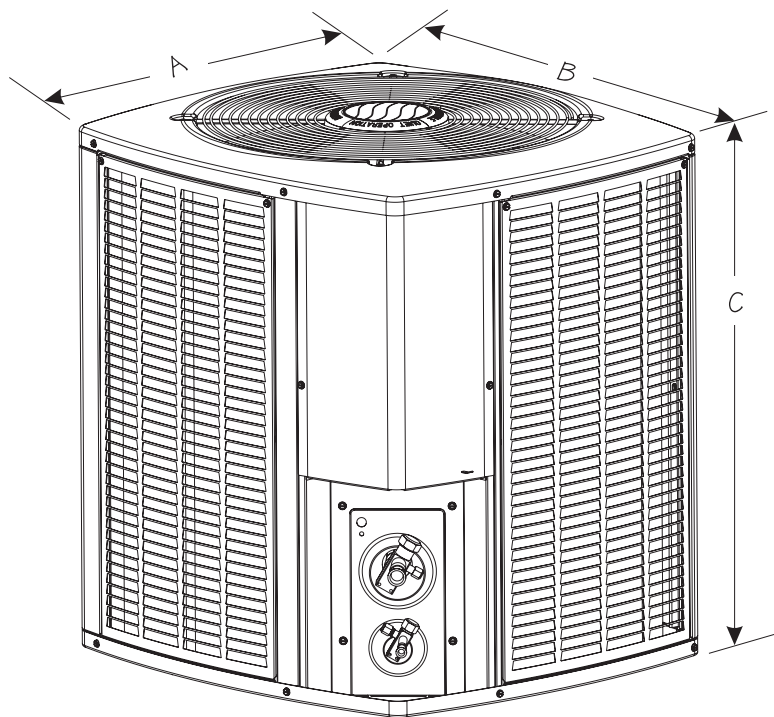
Service clearance of 30 in. (762 mm) must be maintained on one of the sides adjacent to the control box.

Clearance to one of the other three sides must be 36 in. (914 mm).

Clearance to one of the remaining two sides may be 12 in. (305 mm) and the final side may be 6 in. (152 mm).

A clearance of 24 in. must be maintained between two units .48 in. (1219 mm) clearance required on top of unit.

## DIMENSIONS



Model	Dimensions (Inch)			Shipping Weight (lbs.)
	A - (Width)	B - (Depth)	C - (Height)	
018	29.38	31.25	43.75	203
024	29.38	31.25	43.75	203
030	29.38	31.25	33.25	205
036	35.75	37.75	33.25	230
042	35.75	37.75	37.75	284
048	35.75	37.75	37.75	284
060	35.75	37.75	43.75	298

**NOTE:**

Dimensions listed are unit sizes w/o packaging

Weights listed are unit weights with packaging

## TXV USAGE

All Allied coils and air handlers are shipped with a factory installed TXV. In most cases, no substitution is needed.

If a different size TXV is required, it will be listed in the "TXV SUBSTITUTION" table by size. The correct TXV must be ordered separately and field installed.

Size	Order Number
018	<b>26Z70</b>
024	<b>26Z70</b>
030	<b>26Z70</b>
036	<b>26Z70</b>
042	<b>26Z71</b>
048	<b>26Z71</b>
060	<b>26Z72</b>

## AHRI STANDARD 210-240-2023

Cooling or heating capacities are net values, including the effects of blower motor heat, and do not include supplementary heat. Power input is the total power input to the compressor(s) and fan(s), plus any controls and other items required as part of the system for normal operation.

Units which do not have an indoor air-circulating blower furnished as part of the model, i.e., split system with indoor coil only, is established by subtracting from the total cooling capacity 1250 Btu/h per 1,000 cfm, and by adding the same amount to the heating capacity.

Total power input for both heating and cooling is increased by 365 W per 1,000 cfm of indoor air circulated.

## TXV SUBSTITUTION - R-454B

A general guide for replacing the factory installed R-454B TXV if the indoor unit (coil/air handler) is larger or smaller than the outdoor unit.

Outdoor Unit		Indoor Unit		Indoor TXV Furnished	Indoor TXV Replacement
Size	Tons	Size	Tons		
018	1.5	42	3.5	<b>26Z71</b>	<b>26Z70</b>
018	1.5	48	4	<b>26Z71</b>	<b>26Z70</b>
018	1.5	49	4	<b>26Z71</b>	<b>26Z70</b>
018	1.5	50/60	4/5	<b>26Z71</b>	<b>26Z70</b>
018	1.5	51/61	4/5	<b>26Z71</b>	<b>26Z70</b>
018	1.5	60	5	<b>26Z72</b>	<b>26Z70</b>
024	2	42	3.5	<b>26Z71</b>	<b>26Z70</b>
024	2	48	4	<b>26Z71</b>	<b>26Z70</b>
024	2	49	4	<b>26Z71</b>	<b>26Z70</b>
024	2	50/60	4/5	<b>26Z71</b>	<b>26Z70</b>
024	2	51/61	4/5	<b>26Z71</b>	<b>26Z70</b>
024	2	60	5	<b>26Z72</b>	<b>26Z70</b>
030	2.5	42	3.5	<b>26Z71</b>	<b>26Z70</b>
030	2.5	48	4	<b>26Z71</b>	<b>26Z70</b>
030	2.5	49	4	<b>26Z71</b>	<b>26Z70</b>
030	2.5	50/60	4/5	<b>26Z71</b>	<b>26Z70</b>
030	2.5	51/61	4/5	<b>26Z71</b>	<b>26Z70</b>
030	2.5	60	5	<b>26Z72</b>	<b>26Z70</b>
036	3	42	3.5	<b>26Z71</b>	<b>26Z70</b>
036	3	48	4	<b>26Z71</b>	<b>26Z70</b>
036	3	49	4	<b>26Z71</b>	<b>26Z70</b>
036	3	50/60	4/5	<b>26Z71</b>	<b>26Z70</b>
036	3	51/61	4/5	<b>26Z71</b>	<b>26Z70</b>
036	3	60	5	<b>26Z72</b>	<b>26Z70</b>
042	3.5	24	2	<b>26Z70</b>	<b>26Z71</b>
042	3.5	30	2.5	<b>26Z70</b>	<b>26Z71</b>
042	3.5	30/36	2.5/3	<b>26Z70</b>	<b>26Z71</b>
042	3.5	36	3	<b>26Z70</b>	<b>26Z71</b>
042	3.5	60	5	<b>26Z72</b>	<b>26Z71</b>
048	4	30/36	2.5/3	<b>26Z70</b>	<b>26Z71</b>
048	4	36	3	<b>26Z70</b>	<b>26Z71</b>
048	4	60	5	<b>26Z72</b>	<b>26Z71</b>
060	5	50/60	4/5	<b>26Z71</b>	<b>26Z72</b>
060	5	51/61	4/5	<b>26Z71</b>	<b>26Z72</b>

### TXV Ranges:

**26Z70** - 1.5 to 3 ton systems - Use on 3 ton (036) and lower systems.

**26Z71** - 3.5-4 ton systems - Use on 4 ton (048) and down to 3.5 ton (042) systems.

**26Z72** - 5 ton systems - Use on 5 ton (060) systems only.



Visit us at [www.alliedair.com](http://www.alliedair.com)  
Contact us at 1-800-448-5872

NOTE - Due to our ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.  
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.  
Installation and service must be performed by a qualified installer and servicing agency.

©2024 Allied Air Enterprises.