



## Split System Enhanced Heat Pump

16  
seer

### 4SHP16LT Features and Benefits

A4SHP16LT-100 (03/2010)

#### COMPRESSOR

- High-efficiency 2 stage Copeland Ultra Tech™ scroll compressor
- R410a refrigerant
- Grommet mounted compressor for quiet operation
- Internally protected against high temperature motor overload conditions

#### CABINET

- Full metal louvered panel coil guard protection
- Controls located in corner post for easy installation and service
- Rounded corners for safety and attractive, clean appearance
- Baked polyester paint finish over galvanized steel for maximum durability
- PVC coated wire fan discharge grill
- External gauge ports for easy service
- Raised base pan with ports allows for excellent water and debris drainage

#### COMPONENTS

- Full metal louvered panels remove for easy coil cleaning and service
- Bi-directional filter drier for long-lasting durability and system protection
- Discharge muffler for quiet operation
- Factory installed crank case heater
- Advanced design defrost system featuring a smart logic for power consumption savings
- Service valves positioned for quick installation and easy service
- Comfort Alert 2 diagnostics factory installed
- Reliable, solid state defrost control
- Defrost control is Quiet Shift™ capable

#### DESIGN

- Designed for ambients up to 125°F

#### COIL

- Enhanced aluminum fins and copper tubing for high efficiency and capacity
- Raised coil prevents debris from collecting in bottom of coil and causing loss of airflow



#### FACTORY INSTALLED ACCESSORIES

- Crank case heater
- Compressor sound cover for quiet operation
- High pressure switch
- Low pressure switch for loss of charge protection

#### WARRANTY

- 10 year limited warranty on compressor, 10 year limited warranty on all parts, extended warranty available\*

\*Warranty provides for a total of 10 years of limited warranty 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. Lifetime limited heat exchanger warranty applies to registered equipment only (Standard 20 years with no online registration). See full warranty at [www.alliedair.com](http://www.alliedair.com) for terms, conditions and exclusions.

## Model Number Guide

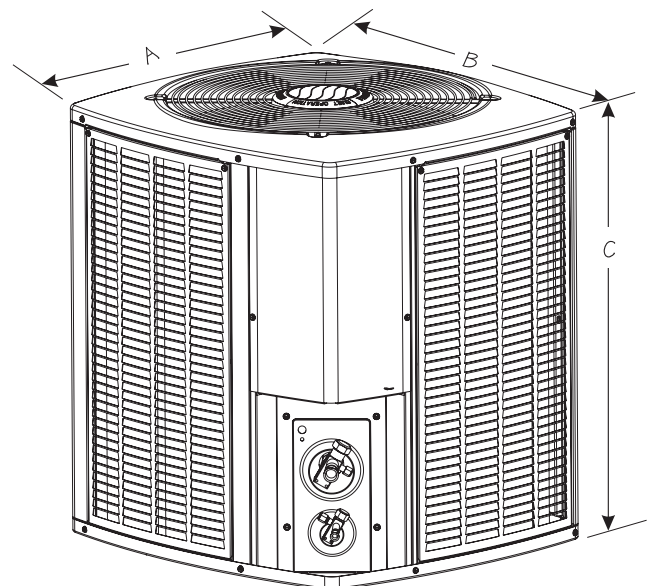
4	SHP	16	LT	1	24	P	-	2	A
4 - R410a	Heat Pump	16 - 16 SEER Nominal	Louvered Two Stage	Series					Minor Revision Code
									Major Revision Code
									Voltage P - 208-230v/60hz/1Ph
									Nominal Capacity 24 - 24,000 Btuh

## Physical and Electrical

Model	Voltage/Hz/ Phase	Voltage Range	Min. Circuit Amp.	Max. Over current Device (amps)	Compressor		Fan Motor			Refrig. Charge (oz.)	Weight (lbs.)
					Rated Load (amps)	Locked Rotor (amps)	Rated Load (amps)	Rated HP	Nom. RPM		
4SHP16LT124P-2	208-230-60/1	197-253	13.5	20	11.4	52	0.7	1/10	1075	146	207
4SHP16LT136P-2	208-230-60/1	197-253	22.5	35	19.0	82	1.7	1/4	825	192	253
4SHP16LT148P-2	208-230-60/1	197-253	28.2	45	24.0	96	1.8	1/3	825	236	288
4SHP16LT160P-2	208-230-60/1	197-253	35.1	60	26.0	118	2.8	1/3	ECM	244	313

## Unit Dimensions (in.) and Sound Ratings

Model No.	Dimensions			Sound Rating dBA
	A	B	C	
4SHP16LT124P-2	24-3/4	26-3/4	33-3/4	73
4SHP16LT136P-2	29-3/8	31-1/4	37-3/4	75
4SHP16LT148P-2	35-3/4	37-3/4	37-3/4	75
4SHP16LT160P-2	35-3/4	37-3/4	43-3/4	74



## Performance with Evaporator Coils

Outdoor Model	Indoor Model	Cooling				Heating				CFM	Refrigerant Connection				Indoor Metering Device				
	Piston or Field Installed TXV	SEER	EER	Rated ARI Cap. <sup>1</sup>	Rated	HSPF	47		17		Outdoor		Indoor		Suction	Liquid	Req'd Indoor <sup>2</sup> Orifice	Optional Field Installed Orifice	
							Buth	COP	Buth		COP	Suction	Liquid	Suction					Liquid
		Suction	Liquid	Suction	Liquid	Suction	Liquid	Suction	Liquid										
4SHP16LT 124P-2	E*1P29+TDR+TXV	13.00	11.00	23000	16600	7.7	23000	3.0	14000	2.0	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36+TDR+TXV	13.00	11.00	23000	16600	7.7	23000	3.0	14000	2.0	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
4SHP16LT 136P-2	E*1P36+TDR+TXV	13.00	11.00	35000	25400	7.7	36000	3.0	22000	2.0	1350	7/8	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P43+TDR+TXV	13.00	11.00	35000	25400	7.7	36000	3.0	22000	2.0	1350	7/8	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
4SHP16LT 148P-2	E*1P49+TDR+TXV	13.00	11.00	47000	33500	7.7	45000	3.0	28000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TDR+TXV	13.00	11.00	47000	33500	7.7	45000	3.0	28000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
4SHP16LT 160P-2	E*1P62D+TDR+TXV	13.00	11.00	59000	43000	7.7	59000	3.0	35000	2.0	1920	7/8	3/8	7/8	3/8	1 1/8	3/8	NA	4HTXV02

<sup>1</sup> Certified in accordance with Unitary Air Conditioner Certification Program, which is based on AHRI Standard 210/240.

<sup>2</sup> Required to achieve ARI rating.

A blower time delay is required to achieve AHRI rating.

# Cooling Performance with Air Handlers and Furnaces 24, 36

Outdoor Model	Indoor Model		Cooling				Heating				CFM	Refrigerant Connection				Refrig. Line Size		Indoor Metering Device		
			SEER	EER	ARI Rated Cap. <sup>1</sup>	Rated Sensible Cap.	HSPF	47		17		Outdoor		Indoor		Suction	Liquid	Req'd Indoor Orifice <sup>2</sup>	Optional Field Inst. TXV	
	Btuh	COP						Btuh	COP	Suction		Liquid	Suction	Liquid						
	Piston or Field Installed TXV	Furnace																		
45HP16LT 124P-2	RBCS2M24V+TXV		15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	BCS2M24V+TXV		15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	G2D80***V12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	G2D80***V14B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	G2D95***V12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	G2D95***V14B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	EFV08B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P29B+TXV	EFV12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D80***V12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D80***V14B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D95***V12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D95***V14B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	EFV08B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
	E*1P36B+TXV	EFV12B	15.00	12.50	24000	17400	8.5	24000	3.3	14000	2.4	850	3/4	3/8	3/4	3/8	3/4	3/8	NA	4HTXV01
45HP16LT 136P-2	RBCS2M36V+TXV		15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	BCS2M36V+TXV		15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D80***V12B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D80***V14B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36C+TXV	G2D80***V20C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36C+TXV	G2D80***V20C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D95***V12B	14.50	12.00	35000	25400	8.0	35000	3.0	22000	2.0	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36B+TXV	G2D95***V14B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36C+TXV	G2D95***V16C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36C+TXV	G2D95***V16C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P36B+TXV	EFV12B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43B+TXV	G2D80***V12B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43B+TXV	G2D80***V14B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43C+TXV	G2D80***V20C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43+TXV	G2D80***V20D	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43B+TXV	G2D95***V12B	14.50	12.00	35000	25400	8.0	36000	3.0	22000	2.0	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43B+TXV	G2D95***V14B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43C+TXV	G2D95***V16C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43C+TXV	G2D95***V20C	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01
	E*1P43B+TXV	EFV12B	15.00	12.50	35000	25400	8.5	36000	3.3	22000	2.4	1350	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV01

<sup>1</sup> Certified in accordance with Unitary Air Conditioner Certification Program, which is based on AHRI Standard 210/240

# Cooling Performance with Air Handlers and Furnaces 48, 60

Outdoor Model	Indoor Model		Cooling				Heating				CFM	Refrigerant Connection				Refrig. Line Size		Indoor Metering Device		
			SEER	EER	ARI Rated Cap. <sup>1</sup>	Rated Sensible Cap.	HSPF	47		17		Outdoor		Indoor		Suction	Liquid	Req'd Indoor Orifice <sup>2</sup>	Optional Field Inst. TXV	
	Btuh	COP						Btuh	COP	Suction		Liquid	Suction	Liquid						
	Piston or Field Installed TXV	Furnace																		
4SHP16LT 148P-2	RBCS2M48V+TXV		16.00	12.50	47000	33500	8.5	46000	3.2	29000	2.4	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	BCS2M48V+TXV		16.00	12.50	47000	33500	8.5	46000	3.2	29000	2.4	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P49C+TXV	G2D80***V20C	15.00	12.50	47000	33500	8.5	46000	3.2	29000	2.4	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P49C+TXV	G2D80***V20C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P49C+TXV	G2D95***V16C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P49C+TXV	G2D95***V20C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P49C+TXV	EFV16C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D80***V20C	15.00	12.50	47000	33500	8.5	46000	3.2	29000	2.4	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D80***V20C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D95***V16C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D95***V20C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
	E*1P62C+TXV	EFV16C	14.50	12.00	46500	33500	8.0	46000	3.0	29000	2.0	1600	7/8	3/8	7/8	3/8	7/8	3/8	NA	4HTXV02
4HP16LT 160P-2	RBCS2M60V+TXV		15.00	12.50	59000	43000	8.5	59000	3.3	35000	2.4	1920	7/8	3/8	7/8	3/8	1	3/8	NA	4HTXV02
	BCS2M60V+TXV		15.00	12.50	59000	43000	8.5	59000	3.3	35000	2.4	1920	7/8	3/8	7/8	3/8	1	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D80***V20C	15.00	12.50	59000	43000	8.5	59000	3.3	35000	2.4	1920	7/8	3/8	7/8	3/8	1	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D95***V16C	14.50	12.00	59000	43000	8.0	59000	3.0	35000	2.0	1920	7/8	3/8	7/8	3/8	1	3/8	NA	4HTXV02
	E*1P62C+TXV	G2D95***V20C	14.50	12.00	59000	43000	8.0	59000	3.0	35000	2.0	1920	7/8	3/8	7/8	3/8	1	3/8	NA	4HTXV02

<sup>1</sup> Certified in accordance with Unitary Air Conditioner Certification Program, which is based on AHRI Standard 210/240

## Cooling Performance Extended Ratings

Outdoor Model	Indoor Model	Indoor Temp DB/WB °F	Outdoor Temp - DB°F														
			65°			82°			95°			105°			115°		
	Btuh		S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	Btuh	S/T	kW	
4SHP16LT 124P-2	BCS2M24V+TXV	85/75	32,300	0.59	1.54	29,523	0.61	1.80	27,400	0.63	1.99	24,800	0.69	2.25	22,200	0.74	2.51
		80/67	29,400	0.65	1.51	26,793	0.70	1.78	24,800	0.73	1.99	22,950	0.74	2.20	21,100	0.75	2.41
		75/63	26,700	0.69	1.48	24,490	0.71	1.74	22,800	0.73	1.93	21,550	0.76	2.16	20,300	0.78	2.38
		75/57	23,100	0.73	1.45	21,400	0.74	1.71	20,100	0.74	1.90	19,250	0.77	2.00	18,400	0.79	2.10
4SHP16LT 136P-2	BCS2M36V+TXV	85/75	45,000	0.60	2.40	42,223	0.66	2.73	40,100	0.71	2.99	31,750	0.80	3.30	23,400	0.89	3.60
		80/67	42,100	0.61	2.38	39,550	0.68	2.70	37,600	0.73	2.94	30,050	0.82	2.77	22,500	0.91	2.60
		75/63	39,300	0.63	2.35	37,033	0.69	2.20	35,300	0.73	2.08	28,550	0.82	2.33	21,800	0.91	2.58
		75/57	37,200	0.66	2.31	35,613	0.72	2.12	34,400	0.76	1.98	27,250	0.83	2.04	20,100	0.90	2.10
4SHP16LT 148P-2	BCS2M48V+TXV	85/75	52,300	0.62	2.96	51,053	0.64	3.49	50,100	0.66	3.89	47,600	0.74	4.27	45,100	0.82	4.65
		80/67	50,600	0.68	2.12	49,127	0.70	3.11	48,000	0.72	3.87	45,300	0.77	4.26	42,600	0.81	4.65
		75/63	48,300	0.72	2.87	44,730	0.74	3.35	42,000	0.75	3.72	39,500	0.77	4.18	37,000	0.79	4.64
		75/57	46,400	0.73	2.86	43,510	0.75	3.34	41,300	0.76	3.71	38,500	0.77	4.11	35,700	0.78	4.51
4SHP16LT 160P-2	BCS2M60V+TXV	85/75	74,900	0.62	3.72	69,290	0.65	4.49	65,000	0.68	5.07	61,400	0.68	5.71	57,800	0.68	6.34
		80/67	69,700	0.69	3.65	64,770	0.71	4.46	61,000	0.73	5.08	55,800	0.77	5.70	50,600	0.81	6.32
		75/63	65,100	0.73	3.63	60,170	0.75	4.37	56,400	0.76	4.93	52,050	0.80	5.57	47,700	0.83	6.20
		75/57	61,400	0.75	3.58	57,207	0.76	4.28	54,000	0.77	4.81	49,550	0.81	5.48	45,100	0.85	6.14

## Heating Performance Extended Ratings

Outdoor Model	Indoor Model	Indoor Temp	Outdoor Temp - DB/WB °F									
			0/0		17/15		35/33		47/43		62/56	
	Piston or Field Installed TXV		Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW	Btuh	kW
4SHP16LT124P-2	BCS2M24V+TXV	70	12,361	1.64	15,100	1.83	18,000	2.03	24,500	2.17	29,200	2.34
4SHP16LT136P-2	BCS2M36V+TXV	70	15,811	2.04	22,800	2.49	30,200	2.97	40,600	3.55	49,500	4.08
4SHP16LT148P-2	BCS2M48V+TXV	70	28,561	3.32	31,300	3.49	34,200	3.67	46,900	3.59	54,700	3.64
4SHP16LT160P-2	BCS2M60V+TXV	70	36,783	4.04	39,900	4.17	43,200	4.31	60,300	4.73	70,500	5.01

## Accessories

Description	Where Used	Kit Catalog No.
Hard Start Kit	24 & 36	10J42
	48 & 60	81J69
Compressor Low Ambient Kit	All Models	45F08
Freezestat	All Models	93G35
Outdoor Thermostat	All Models	ASTA503
Fossil Fuel Kit	All Models	AFOSL500
Low pressure Switch	Factory installed; see spare parts list	
High Pressure Switch	Factory installed; see spare parts list	
Sound Blanket	Factory installed; see spare parts list	
Crankcase Heater	Factory installed; see spare parts list	



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All specifications and illustrations subject to change without notice and without incurring obligations.



Proper sizing and installation of equipment is critical to achieve optimal performance. Split system air conditioners and heat pumps must be matched with appropriate coil components to meet ENERGY STAR criteria. Ask your contractor for details or visit [www.energystar.gov](http://www.energystar.gov)