THP Series Heat Pump

R454B

Up to 15.2 SEER2

Cooling capacity: 18-60 kBtu/h

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Standard Features:

- Eco-friendly R454B refrigerant with low GWP value.
- Energy-efficient compressor.
- Equipped with thermal overload protection.
- High quality condenser with inner-groove copper tube and aluminum fin.
- Service valves with sweat connections and easy-access gauge ports.
- Factory-installed high-pressure switch.
- AHRI certified and ETL listed.
- Filter drier included as accessory.

Cabinet Features:

- Compact design allows for ease of installation, clearance, durability, and maneuverability.
- Powder-painted galvanized steel cabinet chassis.
- Protective steel louvered coil guard.
- Steel wire axial fan guard
- ECM fan motor and unique blade style allowing for smooth discharge air and quieter operation.

1 Product lineup

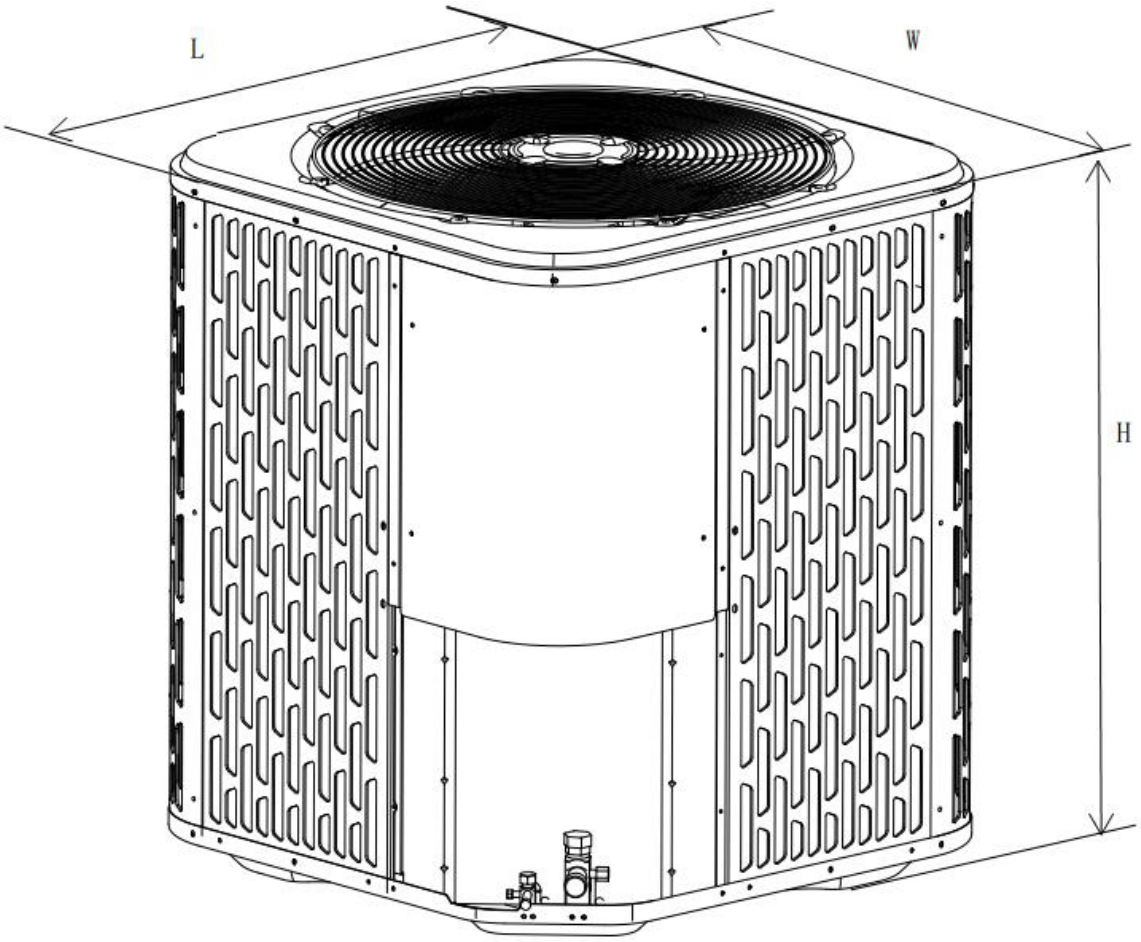
Model	THP5018A1000A THP5024A1000A THP5030A1000A THP5036A1000A	THP5042A1000A THP5048A1000A THP5060A1000A THP5061A1000A
Power supply	208/230V-1Ph-60Hz	
Appearance		

2 Specifications

	THP5018A1000A	THP5024A1000A	THP5030A1000A	THP5036A1000A
NOMINAL CAPACITY				
Cooling (BTU/h)	18,000	23,000	28,000	34,200
Heating (BTU/h)	18,000	22,800	27,000	34,200
ELECTRICAL DATA				
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253	187/253	187/253
Min. Circuit Amps (MCA) (A)	11.5	14.7	17.2	21.5
Max. Overcurrent Protection (MOP) (A)	19.9	25.4	29.8	37.5
COMPRESSOR				
Type	Scroll	Scroll	Scroll	Scroll
Stage	Single	Single	Single	Single
Rated Load Amps (RLA) (A)	8.4	10.7	12.7	16
Locked Rotor Amps (LRA) (A)	47	59	71	86
Crankcase Heater	Yes	Yes	Yes	Yes
CONDENSER COIL				
Type	Tube & Fin	Tube & Fin	Tube & Fin	Tube & Fin
Tube Size (O.D) (in.)	3/16	9/32	9/32	3/16
FAN MOTOR				
Motor Type	ECM	ECM	ECM	ECM
Capacitor (uF)	/	/	/	/
Horsepower (HP)	1/6	1/6	1/6	1/3
Full Load Amps (FLA) (A)	1	1.3	1.3	1.5
REFRIGERATION SYSTEM				
Liquid Valve Size (O.D.) (in.)	3/8	3/8	3/8	3/8
Suction Valve Size (O.D.) (in.)	3/4	3/4	3/4	3/4
Liquid Line Size (“O.D.) (in.)	3/8	3/8	3/8	3/8
Suction Line Size (“O.D.) (in.)	3/4	3/4	3/4	3/4
Refrigerant Charge (lbs. - oz.)	4 lbs. 11 OZ.	5 lbs. 13 OZ.	5 lbs. 13 OZ.	5 lbs. 9 OZ.
SOUND POWER (dB(A))	73	75	75	77
OPERATION RANGE				
Cooling (°C)	12.7~48.9	12.7~48.9	12.7~48.9	12.7~48.9
Cooling (°F)	55~120	55~120	55~120	55~120
Heating (°C)	-15~30	-15~30	-15~30	-15~30
Heating (°F)	5~86	5~86	5~86	5~86

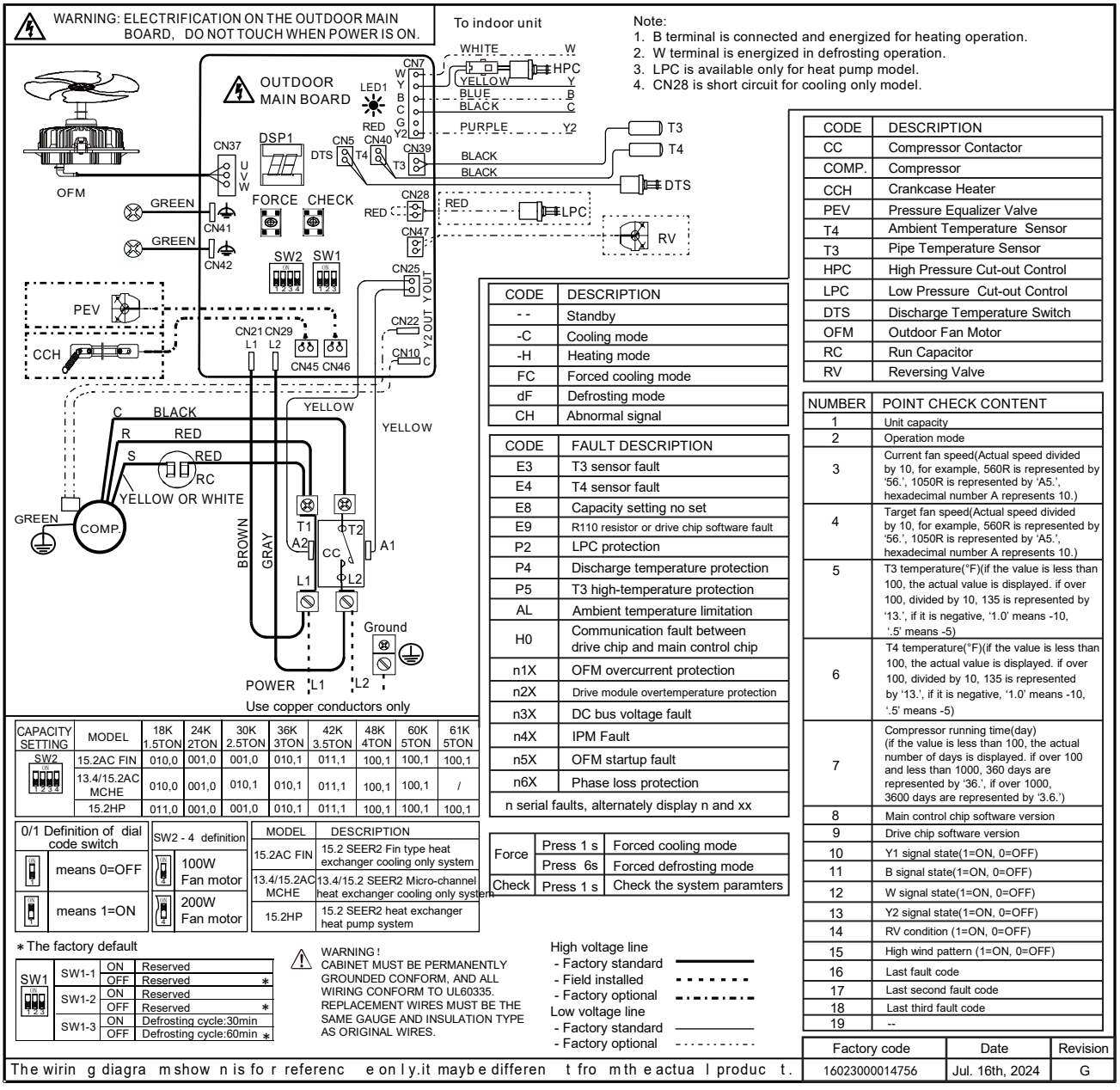
	THP5042A1000A	THP5048A1000A	THP5060A1000A	THP5061A1000A
NOMINAL CAPACITY				
Cooling (BTU/h)	41,000	45,000	54,000	55,000
Heating (BTU/h)	41,000	44,500	54,000	55,000
ELECTRICAL DATA				
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253	187/253	187/253
Min. Circuit Amps (MCA) (A)	26.2	28	36.9	39.6
Max. Overcurrent Protection (MOP) (A)	45.7	48.7	64.6	69.8
COMPRESSOR				
Type	Scroll	Scroll	Scroll	Scroll
Stage	Single	Single	Single	Two-stage
Rated Load Amps (RLA) (A)	19.6	20.8	27.8	30.2
Locked Rotor Amps (LRA) (A)	96	95	125	123
Crankcase Heater	Yes	Yes	Yes	Yes
CONDENSER COIL				
Type	Tube & Fin	Tube & Fin	Tube & Fin	Tube & Fin
Tube Size (O.D) (in.)	3/16	3/16	3/16	9/32
FAN MOTOR				
Motor Type	ECM	ECM	ECM	ECM
Capacitor (uF)	/	/	/	/
Horsepower (HP)	1/3	1/3	1/3	1/3
Full Load Amps (FLA) (A)	1.7	2.0	2.0	1.8
REFRIGERATION SYSTEM				
Liquid Valve Size (O.D.) (in.)	3/8	3/8	3/8	3/8
Suction Valve Size (O.D.) (in.)	3/4	7/8	7/8	7/8
Liquid Line Size (“O.D.) (in.)	3/8	3/8	3/8	3/8
Suction Line Size (“O.D.) (in.)	3/4	7/8	1-1/8	1-1/8
Refrigerant Charge (lbs. - oz.)	6 lbs. 11 OZ.	6 lbs. 11 OZ.	6 lbs. 15 OZ.	9 lbs. 9 OZ.
SOUND POWER (dB(A))	78	78	80	80
OPERATION RANGE				
Cooling (°C)	12.7~48.9	12.7~48.9	12.7~48.9	12.7~48.9
Cooling (°F)	55~120	55~120	55~120	55~120
Heating (°C)	-15~30	-15~30	-15~30	-15~30
Heating (°F)	5~86	5~86	5~86	5~86

3 Dimensions



Model Size	Unit Width "W" in. [mm]	Unit Height "H" in. [mm]	Unit Length "L" in. [mm]	Packing (W*H*D) in. [mm]	Unit Weight (lbs.[kg])
18	23-5/8 [600]	24-15/16 [633]	23-5/8 [600]	24-7/10 × 26-1/4 × 24-7/10 [628 × 652 × 628]	137 [62]
24	28 [710]	24-15/16 [633]	28 [710]	29 × 26-1/4 × 29 [738 × 667 × 738]	149 [68]
30	28 [710]	24-15/16 [633]	28 [710]	29 × 26-1/4 × 29 [738 × 667 × 738]	149 [68]
36	29-1/8 [740]	24-15/16 [633]	29-1/8 [740]	30-1/5 × 26-1/4 × 30-1/5 [768 × 667 ×7 68]	165 [75]
42	28 [710]	33-3/16 [843]	28 [710]	29 × 34-1/2 × 29 [738 × 877 × 738]	181 [82]
48	28 [710]	33-3/16 [843]	28 [710]	29 × 34-1/2 × 29 [738 × 877 × 738]	197 [89]
60	29-1/8 [740]	33-3/16 [843]	29-1/8 [740]	30-1/5 × 34-1/2 × 30-1/5 [768 × 877 × 768]	208 [94]
61	29-1/8 [740]	33-3/16 [843]	29-1/8 [740]	30-1/5 × 34-1/2 × 30-1/5 [768 × 877 × 768]	213 [97]

4 Wiring Diagram



Note:
1. B terminal is connected and energized for heating operation.
2. W terminal is energized in defrosting operation.
3. LPC is available only for heat pump model.
4. CN28 is short circuit for cooling only model.

CODE	DESCRIPTION
CC	Compressor Contactor
COMP.	Compressor
CCH	Crankcase Heater
PEV	Pressure Equalizer Valve
T4	Ambient Temperature Sensor
T3	Pipe Temperature Sensor
HPC	High Pressure Cut-out Control
LPC	Low Pressure Cut-out Control
DTS	Discharge Temperature Switch
OFM	Outdoor Fan Motor
RC	Run Capacitor
RV	Reversing Valve

CODE	DESCRIPTION
- -	Standby
-C	Cooling mode
-H	Heating mode
FC	Forced cooling mode
dF	Defrosting mode
CH	Abnormal signal

CODE	FAULT DESCRIPTION
E3	T3 sensor fault
E4	T4 sensor fault
E8	Capacity setting no set
E9	R110 resistor or drive chip software fault
P2	LPC protection
P4	Discharge temperature protection
P5	T3 high-temperature protection
AL	Ambient temperature limitation
H0	Communication fault between drive chip and main control chip
n1X	OFM overcurrent protection
n2X	Drive module overtemperature protection
n3X	DC bus voltage fault
n4X	IPM Fault
n5X	OFM startup fault
n6X	Phase loss protection
n serial faults, alternately display n and xx	

NUMBER	POINT CHECK CONTENT
1	Unit capacity
2	Operation mode
3	Current fan speed(Actual speed divided by 10, for example, 560R is represented by '56.', 1050R is represented by 'A5.', hexadecimal number A represents 10.)
4	Target fan speed(Actual speed divided by 10, for example, 560R is represented by '56.', 1050R is represented by 'A5.', hexadecimal number A represents 10.)
5	T3 temperature(°F)(if the value is less than 100, the actual value is displayed. if over 100, divided by 10, 135 is represented by '13.', if it is negative, '1.0' means -10, '.5' means -5)
6	T4 temperature(°F)(if the value is less than 100, the actual value is displayed. if over 100, divided by 10, 135 is represented by '13.', if it is negative, '1.0' means -10, '.5' means -5)
7	Compressor running time(day) (if the value is less than 100, the actual number of days is displayed. if over 100 and less than 1000, 360 days are represented by '36.', if over 1000, 3600 days are represented by '3.6.')
8	Main control chip software version
9	Drive chip software version
10	Y1 signal state(1=ON, 0=OFF)
11	B signal state(1=ON, 0=OFF)
12	W signal state(1=ON, 0=OFF)
13	Y2 signal state(1=ON, 0=OFF)
14	RV condition (1=ON, 0=OFF)
15	High wind pattern (1=ON, 0=OFF)
16	Last fault code
17	Last second fault code
18	Last third fault code
19	--

CAPACITY SETTING	MODEL	18K 1.5TON	24K 2TON	30K 2.5TON	36K 3TON	42K 3.5TON	48K 4TON	60K 5TON	61K 5TON
SW2	15.2AC FIN	010,0	001,0	001,0	010,1	011,1	100,1	100,1	100,1
	13.4/15.2AC MCHE	010,0	001,0	010,1	010,1	011,1	100,1	100,1	/
	15.2HP	011,0	001,0	001,0	010,1	011,1	100,1	100,1	100,1

0/1 Definition of dial code switch		SW2 - 4 definition	
	means 0=OFF		100W Fan motor
	means 1=ON		200W Fan motor

MODEL	DESCRIPTION
15.2AC FIN	15.2 SEER2 Fin type heat exchanger cooling only system
13.4/15.2AC MCHE	13.4/15.2 SEER2 Micro-channel heat exchanger cooling only system
15.2HP	15.2 SEER2 heat exchanger heat pump system

Force	Press 1 s	Forced cooling mode
	Press 6s	Forced defrosting mode
Check	Press 1 s	Check the system paramters

∗ The factory default

SW1	SW1-1	ON	Reserved
		OFF	Reserved ∗
	SW1-2	ON	Reserved
		OFF	Reserved ∗
	SW1-3	ON	Defrosting cycle:30min
		OFF	Defrosting cycle:60min ∗

WARNING !
CABINET MUST BE PERMANENTLY GROUNDED CONFORM, AND ALL WIRING CONFORM TO UL60335. REPLACEMENT WIRES MUST BE THE SAME GAUGE AND INSULATION TYPE AS ORIGINAL WIRES.

High voltage line
- Factory standard
- Field installed
- Factory optional

Low voltage line
- Factory standard
- Factory optional

The wiring diagram shown is for reference only. It may be different from the actual product.

Factory code	Date	Revision
16023000014756	Jul. 16th, 2024	G