

TUTTOKOOL R454B TPH Series Packaged Rooftop

TPH Series

Cooling capacity: 24-60 kBtu/h



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Standard Features:

- Quiet horizontal discharge.
- Power-painted galvanized steel cabinet.
- Electric heat kit available as a field-installed option: 5/8/10/15/20kW.
- High-efficiency compressors operate smoothly, quietly, and consistently.
- Internal safeguards protect the compressor against high and low pressure, and coil temperature.
- Aluminum tube/aluminum fin coil.
- High-efficiency ECM blower motor.
- AHRI Certified and ETL listed.
- Compliant with UL-60335 certification.
- Uses more environmentally friendly R454B refrigerant.
- Full series 5mm condenser, higher heat exchange efficiency with less flammable refrigerant charge, safer.
- Full DC variable speed external motor, more efficient, smarter, and quieter.

TPH Series Rooftop Package

1 Product lineup

Model	TPH4024E100A TPH4030E100A TPH4036E100A TPH4042E100A TPH4048E100A TPH4060E100A
Power supply	208/230V-1Ph-60Hz
Appearance	

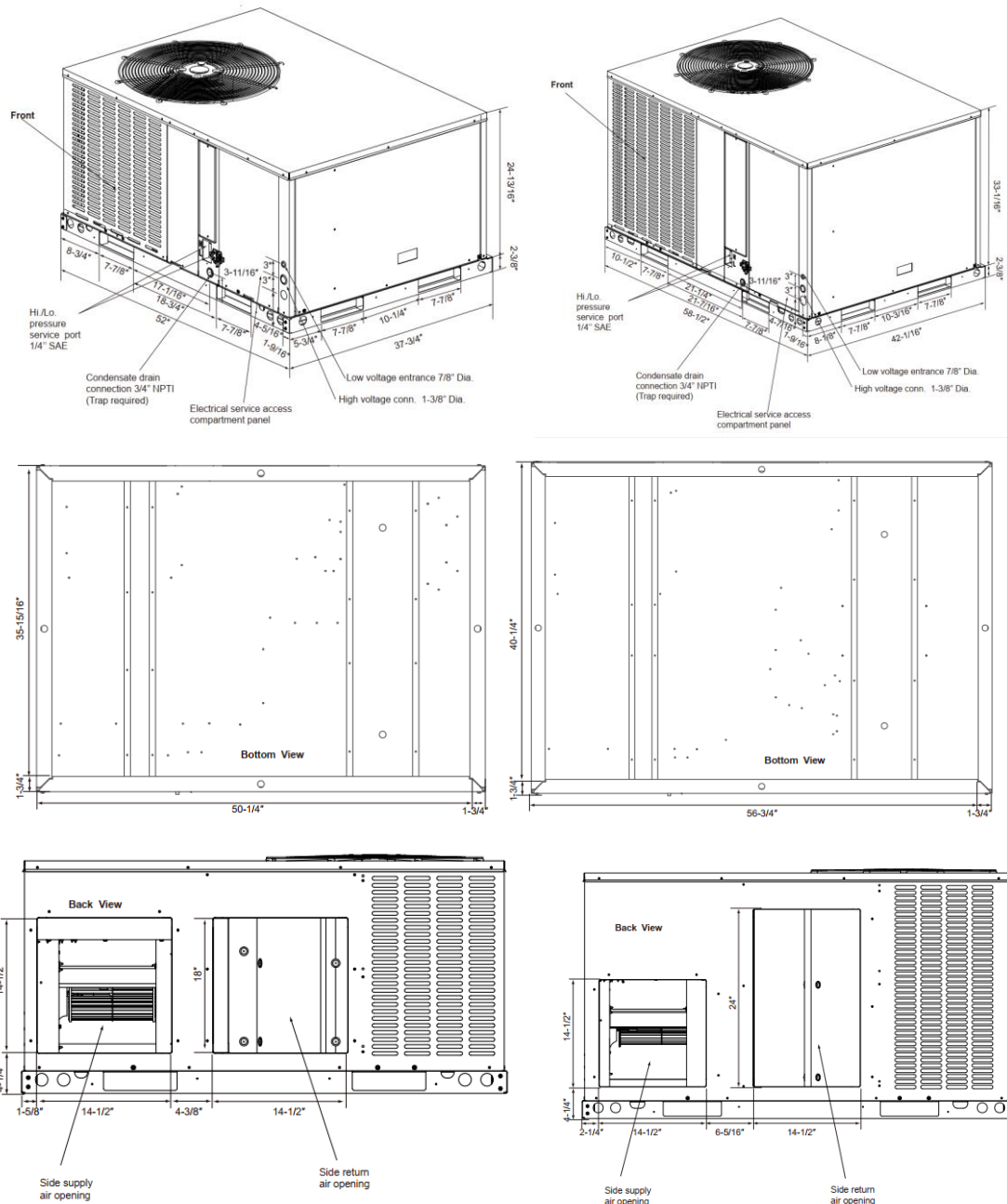
3 Specifications

	TPH4024E100A	TPH4030E100A	TPH4036E100A
NOMINAL CAPACITY			
Cooling (BTU/h)	22,800	28,200	34,200
Heating (BTU/h)	22,400	27,600	34,200
ELECTRICAL DATA			
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253	187/253
Min. Circuit Amps (MCA) (A)	17.9	24.4	27.1
Max. Overcurrent Protection (MOP) (A)	25	30	35
COMPRESSOR			
Type	Rotary	Rotary	Scroll
Stage	Single	Single	Single
Rated Load Amps (RLA) (A)	11.9	15.5	17.6
Locked Rotor Amps (LRA) (A)	55	55	86
OUTDOOR COIL			
Type	Tube & Fin	Tube & Fin	Tube & Fin
Tube outside dia. (mm)	5	5	5
OUTDOOR FAN MOTOR			
Motor Type	ECM	ECM	ECM
Capacitor (uF)	/	/	/
Horsepower (HP)	1/4	1/3	1/3
Full Load Amps (FLA) (A)	1.4	2.1	2.1
Rated Airflow (CFM)	2,250	2,550	2,550
INDOOR COIL			
Type	Tube & Fin	Tube & Fin	Tube & Fin
Tube outside dia. (mm)	7	7	7
INDOOR BLOWER MOTOR			
Motor Type	PSC	ECM	ECM
Capacitor (uF)	/	/	/
Horsepower (HP)	1/4	1/2	1/4
Full Load Amps (FLA) (A)	1.6	2.9	3.0
Rated Airflow (CFM at 0.58 in H ₂ O)	840	1050	1200
REFRIGERATION SYSTEM			
Refrigerant Control	Piston	Piston	Piston
Refrigerant Charge (lbs. - oz.)	3 lbs. 14 oz.	3 lbs. 10 oz.	3 lbs. 12 oz.
SOUND POWER (dB(A))	80	81	81
OPERATION RANGE			
Cooling (°C)	0~46.1	0~46.1	0~46.1
Cooling (°F)	32~114.9	32~114.9	32~114.9
Heating (°C)	-18~30	-18~30	-18~30
Heating (°F)	-0.4~86	-0.4~86	-0.4~86
Dimension & Weight			
Unpacking (W*H*D) mm	958 x 630 x 1321	958 x 630 x 1321	958 x 630x 1321
inch	37.75 x 24.81 x 52	37.75 x 24.81 x 52	37.75 x 24.81 x 52
Packing (W*H*D) mm	965 x 655 x 1340	965 x 655 x 1340	965 x 655 x 1340
inch	38 x 25.81 x 52.76	38 x 25.81 x 52.76	38 x 25.81 x 52.76
Net/Gross weight kg	148/154	148/154	153/159
lb	326/340	326/340	337/351
Shipping per STD 40HQ	84	84	84

TPH Series Rooftop Package

	TPH4042E100A	TPH4048E100A	TPH4060E100A
NOMINAL CAPACITY			
Cooling (BTU/h)	40,500	46,500	56,500
Heating (BTU/h)	40,500	46,000	56,000
ELECTRICAL DATA			
Voltage / Phase (60 Hz)	208/230V-1Ph	208/230V-1Ph	208/230V-1Ph
Min. / Max. Voltage (V)	187/253	187/253	187/253
Min. Circuit Amps (MCA) (A)	29.9	36.0	48.6
Max. Overcurrent Protection (MOP) (A)	40	45	60
COMPRESSOR			
Type	Scroll	Scroll	Scroll
Stage	Single	Single	Single
Rated Load Amps (RLA) (A)	19.9	23.8	32.0
Locked Rotor Amps (LRA) (A)	96	95	125
OUTDOOR COIL			
Type	Tube & Fin	Tube & Fin	Tube & Fin
Tube outside dia. (mm)	5	5	5
OUTDOOR FAN MOTOR			
Motor Type	ECM	ECM	ECM
Capacitor (uF)	/	/	/
Horsepower (HP)	1/3	1/4	1/4
Full Load Amps (FLA) (A)	2.3	2.3	2.8
Rated Airflow (CFM)	3,600	3,600	3,600
INDOOR COIL			
Type	Tube & Fin	Tube & Fin	Tube & Fin
Tube outside dia. (mm)	7	7	7
INDOOR BLOWER MOTOR			
Motor Type	PSC	PSC	ECM
Capacitor (uF)	/	/	/
Horsepower (HP)	1/4	1/2	3/4
Full Load Amps (FLA) (A)	2.7	2.9	5.8
Rated Airflow (CFM at 0.58 in H ₂ O)	1430	1620	1750
REFRIGERATION SYSTEM			
Refrigerant Control	Piston	Piston	Piston
Refrigerant Charge (lbs. - oz.)	5 lbs. 15 oz.	6 lbs. 1 oz.	5 lbs. 15 oz.
SOUND POWER (dB(A))	80	80	81
OPERATION RANGE			
Cooling (°C)	0~46.1	0~46.1	0~46.1
Cooling (°F)	32~114.9	32~114.9	32~114.9
Heating (°C)	-18~30	-18~30	-18~30
Heating (°F)	-0.4~86	-0.4~86	-0.4~86
Dimension & Weight			
Unpacking (W*H*D) mm	1068 x 840 x 1485.9	1068 x 840 x 1485.9	1068 x 840 x 1485.9
inch	42.06 x 33.06 x 58.5	42.06 x 33.06 x 58.5	42.06 x 33.06 x 58.5
Packing (W*H*D) mm	1073 x 865 x 1505	1073 x 865 x 1505	1073 x 865 x 1505
inch	42.24 x 34.07 x 59.25	42.24 x 34.07 x 59.25	42.24 x 34.07 x 59.25
Net/Gross weight kg	206/214	206/214	204/212
lb	454/472	454/472	450/467
Shipping per STD 40HQ	45	45	45

4 Dimensional Drawing



Model	Unit Width "W" in. [mm]	Unit Height "H" in. [mm]	Unit Length "D" in. [mm]	Net Weight kg [lb]	Gross Weight kg [lb]
24	37.75 [958]	24.81 [630]	52 [1321]	148 [326]	154 [340]
30	37.75 [958]	24.81 [630]	52 [1321]	148 [326]	154 [340]
36	37.75 [958]	24.81 [630]	52 [1321]	153 [337]	159 [351]
42	42.06 [1068]	33.06 [840]	58.5 [1485.9]	206 [454]	214 [472]
48	42.06 [1068]	33.06 [840]	58.5 [1485.9]	206 [454]	214 [472]
60	42.06 [1068]	33.06 [840]	58.5 [1485.9]	204 [450]	212 [467]

TPH Series Rooftop Package

5 Electrical Heater Kit (Optional)

Electric Heater Kit Electrical Data (only Electric Heat)

Model Number	Volt	Heater Circuit (without units)					
		Model	kW	Stages	Amps	MCA (Amps)	Max Fuse Breaker Size (Amps)
24	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
30	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
		EHK-15G	11.3/15	2	54.2/62.5	68/79	70/80
36	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
		EHK-15G	11.3/15	2	54.2/62.5	68/79	70/80
42	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
		EHK-15G	11.3/15	2	54.2/62.5	68/79	70/80
		EHK-20G	15/20	2	72.3/83.4	91/105	100/110
48	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
		EHK-15G	11.3/15	2	54.2/62.5	68/79	70/80
		EHK-20G	15/20	2	72.3/83.4	91/105	100/110
60	208/230-1-60	EHK-05G	3.8/5	1	18.1/20.8	23/26	25/30
		EHK-08G	5.6/7.5	1	27.1/31.3	34/40	35/40
		EHK-10G	7.5/10	1	36.1/41.7	46/53	50/60
		EHK-15G	11.3/15	2	54.2/62.5	68/79	70/80
		EHK-20G	15/20	2	72.3/83.4	91/105	100/110

1. MCA=Minimum Circuit Ampacity.
2. Maximum Over Current Protection per Standard UL 60335.
3. Fuse or HACR circuit breaker size installed at factory or field installed.

6 Airflow Data

Duct Application(230V)

Model Number	Motor Speed		SCFM								
			External Static Pressure in H ₂ O[kPa]								
			0[0]	0.1[.02]	0.2[.05]	0.3[.07]	0.4[.10]	0.5[.12]	0.6[.15]	0.7[.17]	0.8[.20]
24	Low-Tap(1)	SCFM	885	841	795	743	/	/	/	/	/
		Watts	227	224	221	216	/	/	/	/	/
		Amps	2.07	2.07	2.06	2.05	/	/	/	/	/
	Mid-Tap(2) (Factory)	SCFM	/	/	/	988	957	882	767	/	/
		Watts	/	/	/	339	323	307	291	/	/
		Amps	/	/	/	2.31	2.28	2.26	2.24	/	/
	High-Tap(3)	SCFM	/	/	/	/	/	996	967	928	896
		Watts	/	/	/	/	/	412	392	379	361
		Amps	/	/	/	/	/	2.65	2.57	2.52	2.46
30	Low-Tap(1)	SCFM	911	869	828	782	723	/	/	/	/
		Amps	0.9	1.0	1.0	1.1	1.2	/	/	/	/
		Watts	103	113	122	131	141	/	/	/	/
	Mid-Tap(2)	SCFM	/	1031	995	961	927	876	829	782	740
		Amps	/	1.3	1.4	1.5	1.6	1.7	1.7	1.8	1.9
		Watts	/	159	170	180	190	203	213	222	230
	High-Tap(3) (Factory)	SCFM	/	/	/	/	1079	1050	1015	967	926
		Amps	/	/	/	/	2.0	2.1	2.2	2.3	2.4
		Watts	/	/	/	/	246	257	270	286	297
36	Low-Tap(2)	SCFM	1073	1031	995	961	927	876	/	/	/
		Amps	1.2	1.3	1.4	1.5	1.6	1.7	/	/	/
		Watts	148	159	170	180	190	203	/	/	/
	Mid-Tap(3)	SCFM	/	1177	1142	1110	1079	1050	1015	967	926
		Amps	/	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4
		Watts	/	209	221	233	246	257	270	286	297
	High-Tap(4) (Factory)	SCFM	/	/	/	/	/	1232	1205	1178	1152
		Amps	/	/	/	/	/	2.8	2.9	3.0	3.1
		Watts	/	/	/	/	/	347	361	374	386
42	Low-Tap(1) (Factory)	SCFM	/	/	/	/	1554	1495	1429	1340	1230
		Watts	/	/	/	/	527	510	469	465	432
		Amps	/	/	/	/	2.29	2.22	2.15	2.02	1.88
	Mid-Tap(2)	SCFM	/	/	/	/	/	/	/	1503	1384
		Watts	/	/	/	/	/	/	/	566	533
		Amps	/	/	/	/	/	/	/	2.46	2.32
	High-Tap(3)	SCFM	/	/	/	/	/	/	/	/	1548
		Watts	/	/	/	/	/	/	/	/	662
		Amps	/	/	/	/	/	/	/	/	2.88
48	Low-Tap(1)	SCFM	1735	1701	1654	1608	1554	1495	1429	1340	/
		Watts	579	573	561	545	527	510	469	465	/
		Amps	2.52	2.49	2.44	2.37	2.29	2.22	2.15	2.02	/
	Mid-Tap(2) (Factory)	SCFM	/	/	/	1790	1730	1665	1591	1503	1384
		Watts	/	/	/	658	642	614	592	566	533
		Amps	/	/	/	2.86	2.79	2.67	2.57	2.46	2.32
	High-Tap(3)	SCFM	/	/	/	/	/	/	1761	1666	1548
		Watts	/	/	/	/	/	/	732	704	662
		Amps	/	/	/	/	/	/	3.18	3.06	2.88
60	Low-Tap(3) (Factory)	SCFM	1830	1784	1742	1700	1658	1618	1579	1542	1503
		Amps	2.4	2.5	2.7	2.8	2.9	3.0	3.1	3.2	3.3
		Watts	306	320	336	350	365	380	392	407	420
	Mid-Tap(4) (Factory)	SCFM	1983	1943	1906	1862	1824	1784	1745	1709	1674
		Amps	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.9	4.0
		Watts	391	406	421	438	453	469	486	501	515
	High-Tap(5)	SCFM	2250	2201	2159	2120	2083	2047	2023	1978	1946
		Amps	4.3	4.4	4.5	4.6	4.7	4.9	5.0	5.1	5.2
		Watts	562	575	593	609	627	645	666	682	700

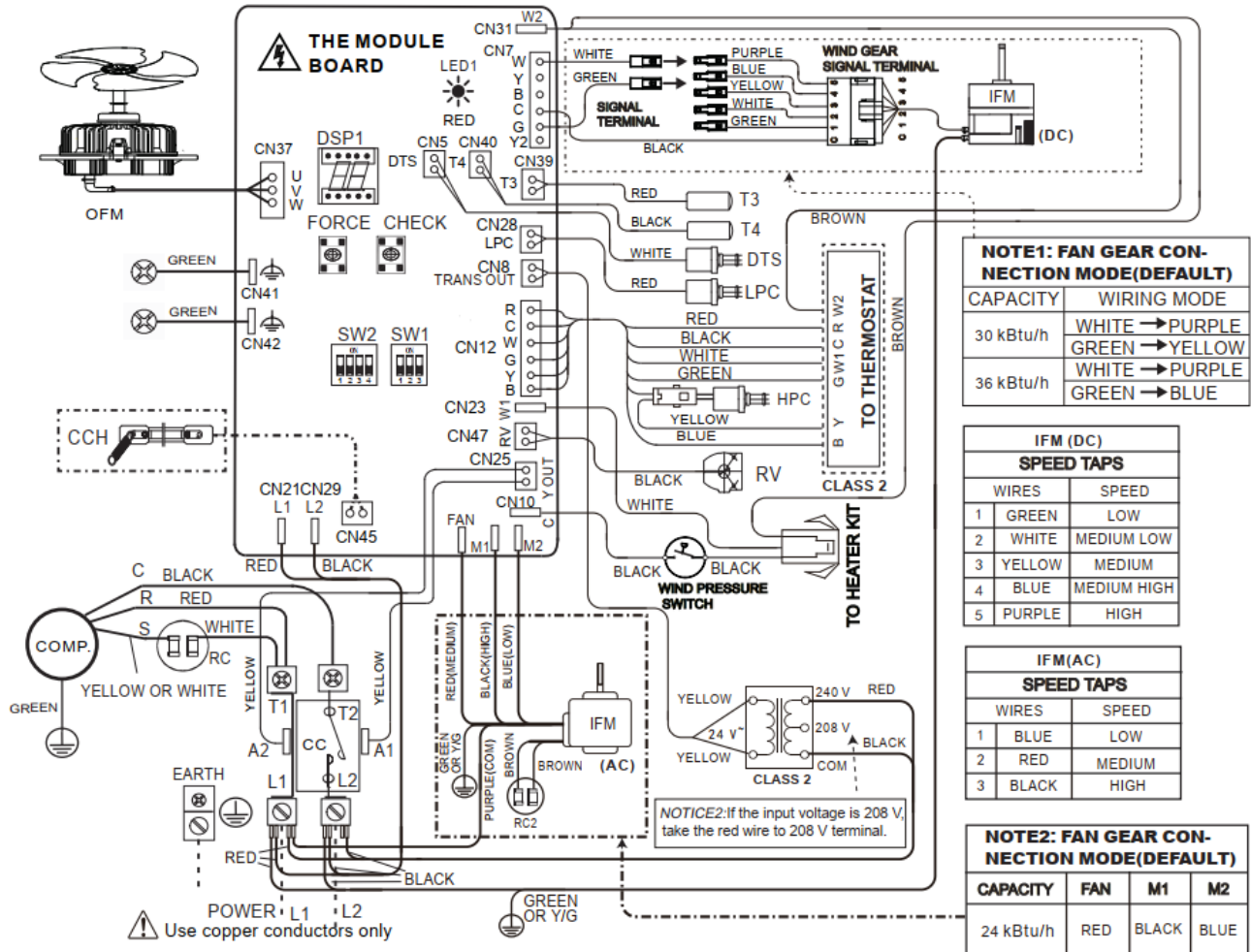
- The above airflow data for reference only.
- The air distribution system has the greatest effect on airflow. The duct system is totally controlled by the contractor. For this reason, the contractor should use only industry-recognized procedures.
- The installers should balance the air distribution system to ensure proper quiet airflow to all rooms in the home. This ensures a comfortable living space.
- Heat pump systems require a specified airflow. Each ton of cooling requires between 300 and 450 cubic feet of air per minute (CFM), or 400 CFM nominally.
- Duct design and construction should be carefully done. System performance can be lowered dramatically due to poor duct design.
- Air supply diffusers must be selected and located carefully. They must be sized and positioned to deliver treated air along the perimeter of the space. If they are too small for their intended airflow, they become noisy. If they are not located properly, they cause drafts. Return air grilles must be properly sized to carry air back to the blower. If they are too small, they also cause noise.
- The installers should balance the air distribution system to ensure proper quiet airflow to all rooms in the home. This ensures a comfortable living space.

TPH Series Rooftop Package

- An air velocity meter or airflow hood can give a reading of system CFM.
- During installation, installer should select the air speed according to the actual setting static pressure. Please refer to the Air Flow Data

7 Wiring Diagram

24/30/36K



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

SW1	SW1-1	SW1-2	SW1-3	DEFINITION
	ON	OFF	ON	13.4HP package(only used for replacing board)
	OFF	ON	OFF	Reserved
	ON	ON	ON	Reserved
	OFF	OFF	OFF	Defrosting cycle:30 min
	ON	ON	ON	Defrosting cycle:60 min

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

Extra-low-voltage line
 - Factory standard
 - Factory optional

MODEL	DESCRIPTION
13.4 HP	13.4 SEER heat exchanger package unit

CODE	DESCRIPTION
CC	Compressor Contactor
COMP.	Compressor
CCH	Crankcase Heater
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
IFM	Indoor Fan Motor
RC	Run Capacitor
RV	Reversing Valve

CAPACITY SETTING	MODEL	24 kBTu/h 2 TON	30 kBTu/h 2.5 TON	36 kBTu/h 3 TON	SW2 - 4 definition
SW2	13.4 HP	001,1	010,1	010,1	100 W Fan motor
		42 kBTu/h 3.5 TON	48 kBTu/h 4 TON	60 kBTu/h 5 TON	200 W Fan motor
		100,1	100,1	100,1	

0/1 DEFINITION OF DIP SWITCH	CODE	DESCRIPTION
means 0=OFF	--	Standby
	-C	Cooling mode
means 1=ON	-H	Heating mode
	FC	Forced cooling mode
	dF	Defrosting mode
	CH	Abnormal signal

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

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(Target 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	Y signal state(1=ON, 0=OFF)
11	B signal state(1=ON, 0=OFF)
12	W1 signal state(1=ON, 0=OFF)
13	W2 signal state(1=ON, 0=OFF)
14	RV(4-Way Valve) condition (1=ON, 0=OFF)
15	High fan speed mode (1=ON, 0=OFF)
16	Last fault code
17	Last second fault code
18	Last third fault code
19	--

TPH Series Rooftop Package

 WARNING!

Cabinet must be permanently earthed, and all wiring conform to UL60335.
Replacement wires must be the same gauge and insulation type as original wires.

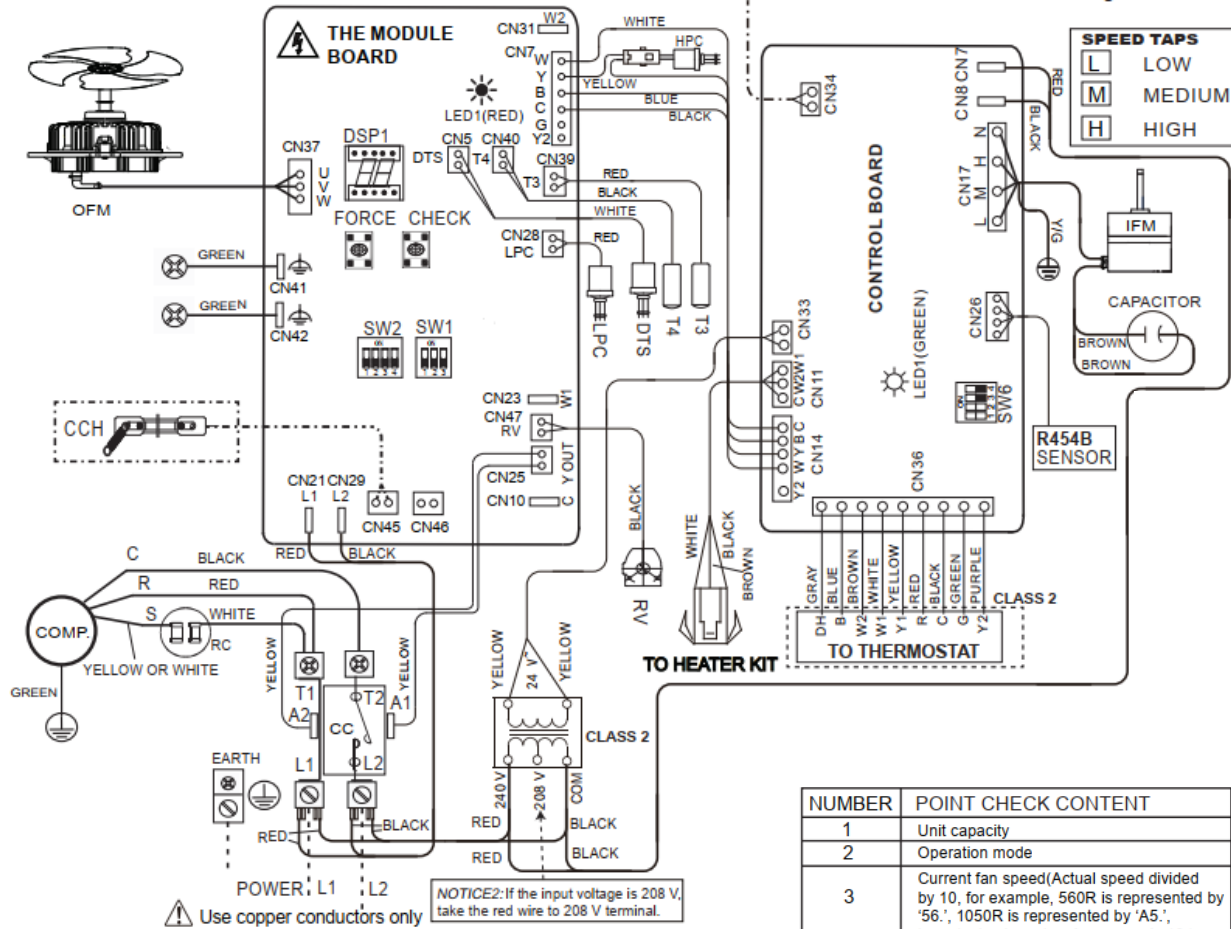
Notice:

1. B terminal is connected and energized for heating operation.
2. W terminal is energized in defrosting operation.

TPH Series Rooftop Package

42/48K

- WARNING: HAZARDOUS VOLTAGE. DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. INSURE THAT ALL CAPACITORS HAVE DISCHARGED STORED VOLTAGE.**
- FOR REFRIGERANT LEAK PROTECTION**
LEAK ALARM DEVICE
- NOTICE1:**
1. B terminal is connected and energized for heating operation.
2. W terminal is energized in defrosting operation.



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	

CODE	DESCRIPTION
CC	Compressor Contactor
COMP.	Compressor
CCH	Crankcase Heater
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
IFM	Indoor Fan Motor
Force	Press 1 s Forced cooling mode
Check	Press 6 s Forced defrosting mode
	Press 1 s Check the system parameters

LED1(GREEN) STATUS	CONTENT
STEADY ON	Normal Operation
OFF	Power Supply Fault
KEEP FLASHING	Refrigerant Leak Protection
3 FLASH/CYCLE	R454B Refrigerant Sensor Fault
4 FLASH/CYCLE	R454B Refrigerant Sensor Communication Fault
8 FLASH/CYCLE	R454B Refrigerant Sensor Over Service Life

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

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(Target 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	W1 signal state(1=ON, 0=OFF)
13	W2 signal state(1=ON, 0=OFF)
14	Y2 signal state(1=ON, 0=OFF)
15	RV(4-Way Valve) condition (1=ON, 0=OFF)
16	High fan speed mode (1=ON, 0=OFF)
17	Last fault code
18	Last second fault code
19	Last third fault code

TPH Series Rooftop Package

Hazardous voltage line

- Factory standard ———
- Field installed - - - - -
- Factory optional - - - - -

Extra-low-voltage line

- Factory standard ———
- Factory optional - - - - -

0/1 DEFINITION OF DIP SWITCH	
	means 0=OFF
	means 1=ON

CAPACITY SETTING	MODEL	24 kBTu/h 2 TON	30 kBTu/h 2.5 TON	36 kBTu/h 3 TON
SW2 	13.4 HP	001,1	010,1	010,1
		42 kBTu/h 3.5 TON	48 kBTu/h 4 TON	60 kBTu/h 5 TON
		100,1	100,1	100,1
SW2 - 4 definition				
	100 W Fan motor		200 W Fan motor	
SW1 	SW1-1	ON	13.4HP package (only used for replacing board)	
		OFF	Reserved	
	SW1-2	ON	Reserved	
		OFF	Reserved	
	SW1-3	ON	Defrosting cycle:30 min	
		OFF	Defrosting cycle:60 min	
MODEL	DESCRIPTION			
13.4 HP	13.4 SEER heat exchanger package unit			



CAUTION:

- 1: Use copper wire (75 °C min.) only between disconnect switch and unit.
- 2: To be wired in accordance with NEC and local codes.
- 3: If any of the original wires, as supplied, must be replaced. Use the same or equivalent type wires.
- 4: If the input voltage is 208 V, please change the transformer tap by taking the red wire to 208 V terminal.
- 5: The rated output operating condition of CN34 is 24 VAC/1A or 30 VDC/1A or 250 VAC/1A. Please refer to the manual for wiring methods.



WARNING !

Cabinet must be permanently earthed, and all wiring conform to UL60335.
Replacement wires must be the same gauge and insulation type as original wires.

Notice3:

- 1: If connected to the 1-Stage controller, please short the signals Y1 and Y2.
- 2: Connect R to R, G to G, Y to Y, etc. See outdoor instruction for details.
- 3: If some signal lines of **CN36** are not used, please wrap them up separately with **CAP**.

SETTING INSTRUCTIONS

	DIP SWITCH		G	W/W1/W2
SW6-1,2 FAN SPEED TAPS			L	H
			L	H
			M	H
			H	H
SW6-3		0 S OFF-DELAY		
		90S OFF-DELAY (FACTORY DEFAULT)		
NOT USED				
SW6-4		FACTORY DEFAULT		

TPH Series Rooftop Package

60K

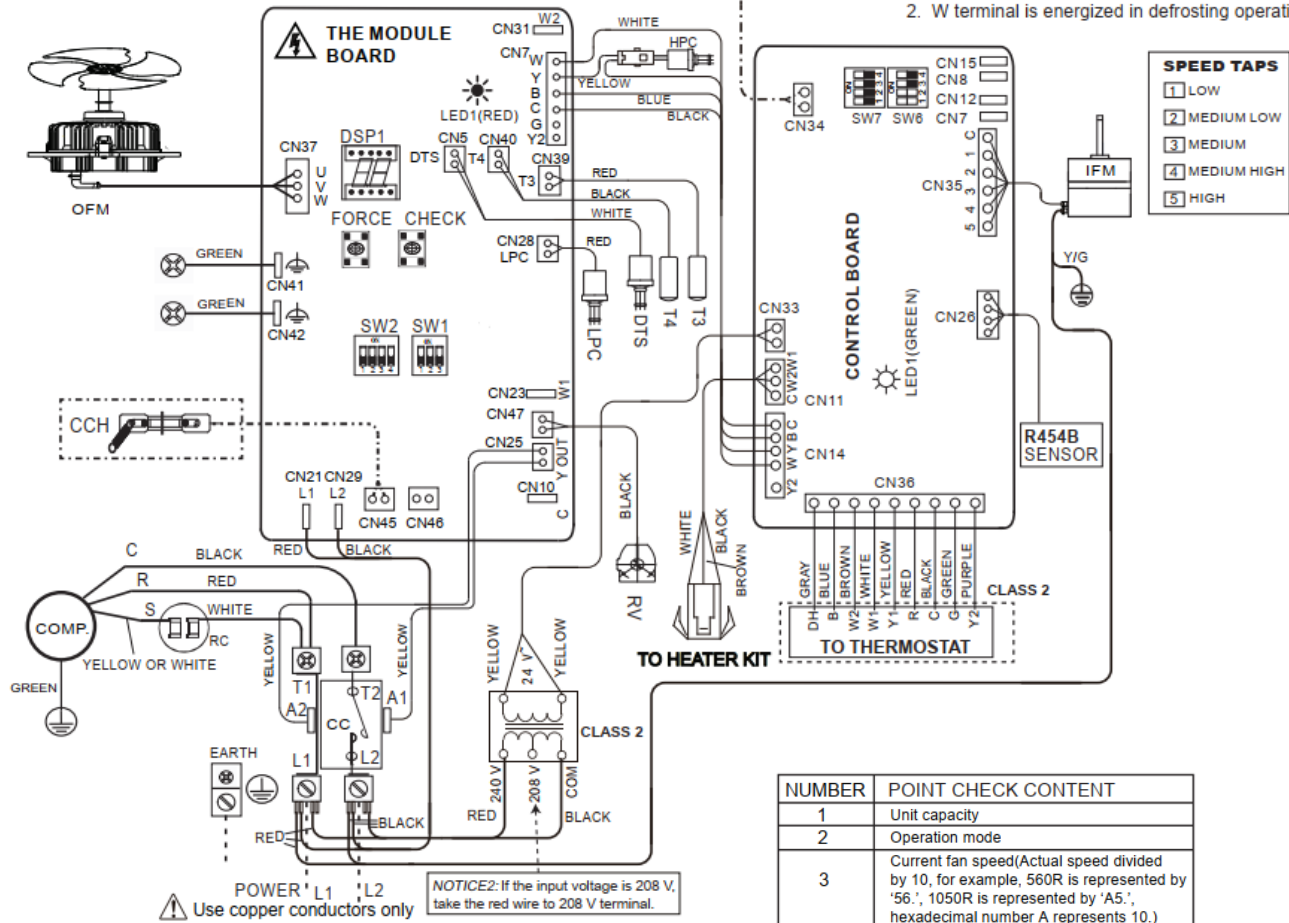


WARNING: HAZARDOUS VOLTAGE. DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. INSURE THAT ALL CAPACITORS HAVE DISCHARGED STORED VOLTAGE.

FOR REFRIGERANT LEAK PROTECTION
LEAK ALARM DEVICE

NOTICE1:

1. B terminal is connected and energized for heating operation.
2. W terminal is energized in defrosting operation.



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	

CODE	DESCRIPTION
CC	Compressor Contactor
COMP.	Compressor
CCH	Crankcase Heater
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
IFM	Indoor Fan Motor
Force	Press 1 s Forced cooling mode
Check	Press 6 s Forced defrosting mode
Check	Press 1 s Check the system paramters

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(Target 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	W1 signal state(1=ON, 0=OFF)
13	W2 signal state(1=ON, 0=OFF)
14	Y2 signal state(1=ON, 0=OFF)
15	RV(4-Way Valve) condition (1=ON, 0=OFF)
16	High fan speed mode (1=ON, 0=OFF)
17	Last fault code
18	Last second fault code
19	Last third fault code

LED1(GREEN) STATUS	CONTENT
STEADY ON	Normal Operation
OFF	Power Supply Fault
KEEP FLASHING	Refrigerant Leak Protection
3 FLASH/CYCLE	R454B Refrigerant Sensor Fault
4 FLASH/CYCLE	R454B Refrigerant Sensor Communication Fault
8 FLASH/CYCLE	R454B Refrigerant Sensor Over Service Life

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

TPH Series Rooftop Package

Hazardous voltage line

- Factory standard _____
- Field installed - - - - -
- Factory optional - - - - -

Extra-low-voltage line

- Factory standard _____
- Factory optional - - - - -

0/1 DEFINITION OF DIP SWITCH

	means 0=OFF		means 1=ON
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CAUTION:

- 1: Use copper wire (75 °C min.) only between disconnect switch and unit.
- 2: To be wired in accordance with NEC and local codes.
- 3: If any of the original wires, as supplied, must be replaced. Use the same or equivalent type wires.
- 4: If the input voltage is 208 V, please change the transformer tap by taking the red wire to 208V terminal.
- 5: The rated output operating condition of CN 34 is 24 V AC/1A or 30 V DC/1A or 250 V AC/1A. Please refer to the manual for wiring methods.



WARNING!

Cabinet must be permanently earthed, and all wiring conform to UL60335.
Replacement wires must be the same gauge and insulation type as original wires.

CAPACITY SETTING	MODEL	24 kBTu/h 2 TON	30 kBTu/h 2.5 TON	36 kBTu/h 3 TON
	13.4 HP	001,1	010,1	010,1
		42 kBTu/h 3.5 TON	48 kBTu/h 4 TON	60 kBTu/h 5 TON
		100,1	100,1	100,1

SW2 - 4 definition	
	100 W Fan motor
	200 W Fan motor

	SW1-1	ON	13.4HP package (only used for replacing board)
		OFF	Reserved
	SW1-2	ON	Reserved
		OFF	Reserved
	SW1-3	ON	Defrosting cycle:30 min
		OFF	Defrosting cycle:60 min

MODEL	DESCRIPTION
13.4 HP	13.4 SEER heat exchanger package unit

SETTING INSTRUCTIONS

1-STAGE CONTROLLER

	DIP SWITCH	Y1 OR G	W/W1/W2
SW6-1,2 FAN SPEED TAPS		2	3
		3	4
		4	5
		5	5

NOT USED

SW6-3,4		FACTORY DEFAULT
SW7-1,2 SW7-3,4		FACTORY DEFAULT

Notice:

- 1: If connected to the 1-Stage controller, please short the signals Y1 and Y2.
- 2: Connect R to R, G to G, Y to Y, etc. See outdoor instruction for details.
- 3: If some signal lines of **CN36** are not used, please wrap them up separately with **CAP**.

