



ROOFTOP PACKAGED AIR CONDITIONER

TECHNICAL SALES GUIDE

Models Covered:

ACiQ-PHH1824000K000V

ACiQ-PHH1836000K000V

ACiQ-PHH1748000K000V

ACiQ-PHH1760000K000V



As a result of continuous product improvement, the specification and design are subject to change without advanced notice. Consult your manufacturer or your dealer for further details regarding this product. The images and illustrations within this manual are for reference only. The actual shape and size of your product may vary.

VERSION DATE: 12-16-24

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1. PRODUCT LIST

Model	Product Code	Nominal Capacity (Ton)	Refrigerant	Power Supply	Appearance
ACiQ-PHH1824000K000V	810175552408	2	R410A	208/230 1Ph~ 60Hz	
ACiQ-PHH1836000K000V	810175552415	3	R410A	208/230 1Ph~ 60Hz	
ACiQ-PHH1748000K000V	810175552422	4	R410A	208/230 1Ph~ 60Hz	
ACiQ-PHH1760000K000V	810175552439	5	R410A	208/230 1Ph~ 60Hz	

2. NOMENCLATURE

ACiQ	-	PHH	17	48	000	K	00	0	V	--	--
1		2	3	4	5	6	7	8	9	--	--

NO.	Description	Options
1	Product Category	ACiQ=ACiQ Rooftop Packaged Air-conditioner
2	Product Function Code	P = Packaged H = Heat Pump H = Horizontal/Downflow
3	SEER Rating	17 = 17 SEER 18 = 18 SEER
4	Cooling BTU	24K, 36K, 48K, 60K
5	Heating BTU	000

NO.	Description	Options
6	Power Supply (Volts, Ph, Hz)	K = 208/230V, 1 Ph, 60 Hz
7	Factory Installed Options	00 = no factory installed options
8	Standard or low nox	0 = Standard (not low nox)
9	Series	V = Inverter

3.. PRODUCT FEATURES

3.1. Description

The ACiQ Rooftop unit are completely assembled, piped and wired at the factory to provide one-piece shipment and rigging. Each unit is pressurized with a holding charge of refrigerant-410A for storage and shipping. The Gree Rooftop can offer the perfect combination of superior product quality, high operating efficiency and cost efficiency. The compact design, outstanding anti-corrosive cabinet and quiet operation make these units suitable for both light commercial and residential applications. The form dedicated design of each part to the unit assembling, together with complete test, the unit offers reliable operation and comfort experience. Comprehensive protections can guarantee the system safety and prevent damage of critical components such as compressor under harsh working conditions. All sheet metal parts are constructed of commercial grade galvanized steel. The unit external parts are coated with special paint to ensure anti-corrosion performance.

3.2. Features

3.2.1. High energy efficiency and performance

DC inverter design

The ACiQ Rooftop unit meets ETL requirements. The compressor and outdoor fan can adjust the operating frequency according to different room loads, and automatically adjust the capacity output to ensure the comfort of the room environment. At the same time, the power consumption of the unit changes along with the capacity output and the power consumption of unit is low in low-load operation. Compared with the fixed-speed unit, its annual power consumption is lower, which is high-efficiency and power-saving.

DC inverter motor

Adopt DC inverter control. It is more power saving, green and eco-friendly. The unit adopts two-stage inverter compressor and DC motor. It realizes cooling in high temperature of 125°F and heating in ultra low temperature of -22°F through the technologies of low temperature enthalpy-adding, all DC inverter speed regulation, etc. The operation range is wide. Even in extreme high and low temperature, it can meet the cooling and heating demand of the user.

High-efficiency fan blade

New high-efficiency fan blade design adopts CFD simulation technology to optimize the matching of blade type and blade angle. In addition to the special trail edge design, the working area of blade is effectively increased and the air volume is greatly increased.

Heating capacity under low temperature will not decay

The unit adopts double cylinder and two-stage inverter compressor, the evaporation temperature is as low as -40°F . It can enhance the mass flow rate and degree of supercooling of the system and satisfy the heating operation under ultra low temperature of -22°F through air supply enthalpy-adding adjustment, the heating capacity at 15°F will not decay and heating capacity at 5°F will remain 80%, improving the comfort of heating in low temperature effectively and the energy conservation efficiency of it is 30% higher when compared with electrical heating.

3.2.2. High reliability**Excellent grid adaptability**

The ACiQ Rooftop A series adopts anti-grid fluctuations design, performs stably in ultra wide voltage range from 187V to 253V, which is perfectly adapted to the power grid fluctuation during peak hours or other conditions.

Multiple protection design

The ACiQ Rooftop unit is designed with high voltage protection, low voltage protection, overcurrent protection and other protections. It can effectively protect key components such as compressor and motor in abnormal operation and harsh working conditions, extending the service life of the unit and ensuring safer and more reliable operation.

Automatic adjustment of throttling

The ACiQ Rooftop unit adopts throttling of electronic expansion valve, and automatically adjusts the opening degree in throttling according to the system high pressure and discharge temperature. It makes sure that the system parameters are within a reasonable range when the unit operates under all working conditions, to improve the operation reliability and service life of the unit.

Anti-crossflow design of outdoor fan

The outdoor fan of the ACiQ Rooftop unit adopts anti-crossflow startup design to solve the problem that the unit cannot start smoothly in the reverse operation under the high wind environment. The anti-wind startup design allows the unit to fully adapt to the harsh windy environment and start reliably. The outdoor fan runs smoothly, which is safer and more reliable.

3.2.3. Two connection methods for temperature controller Strong adaptation

Two connection methods for temperature controller: two-core electrodeless communication and 24V connection. The anti-electromagnetic interference ability of two-core communication is strong, and the communication distance between wired controller and unit is 100m. Select the general communication cord and telephone wire. While the 24V connection is flexible, suitable for other temperature controllers, convenient for engineering reform and meets the installation demands of different projects.

3.2.4. Easy to use**Auxiliary controller**

The unit can be controlled remotely, or connected to the building control system for central control with other electric equipment, quite simple and convenient.

4. PRODUCT DATA

4.1. Product Data at Rated Condition

Model			ACiQ-PHH1824000K000V	ACiQ-PHH1836000K000V
Capacity	Cooling	kW	7.03	10.08
		BTU/h	24000	34400
	Heating	kW	7.03	10.55
		BTU/h	24000	36000
SEER		-	17.8	17.8
HSPF		-	8.8	8.8
EER		(Btu/h)/W	11	11
COP		W/W	3.4	3.4
Power supply		V/Ph/Hz	208/230/1/60	208/230/1/60
MOP		A	40	40
MCA		A	35	35
Refrigerant charge volume		lbs	11	11
Sound pressure level		dB(A)	63	63
Dimension (W×D×H)	Outline	in	44-1/8×35-3/8×49-3/16	44-1/8×35-3/8×49-3/16
	Package	in	44-5/8×35-15/16×50-13/16	44-5/8×35-15/16×50-13/16
Net weight/Gross weight		lbs	523/545	523/545
Loading quantity	40'GP/40'HQ	unit	26/52	26/52

Model			ACiQ-PHH1748000K000V	ACiQ-PHH1760000K000V
Capacity	Cooling	kW	13.77	16.41
		BTU/h	47000	56000
	Heating	kW	13.77	16.71
		BTU/h	47000	57000
SEER		-	17.8	17
HSPF		-	8.5	8.3
EER		(Btu/h)/W	11	10.6
COP		W/W	3.24	3.18
Power supply		V/Ph/Hz	208/230/1/60	208/230/1/60
MOP		A	45	45
MCA		A	39.1	39.1
Refrigerant charge volume		lbs	14.8	14.8
Sound pressure level		dB(A)	68	68
Dimension (W×D×H)	Outline	in	44-1/8×44-1/8×49-3/16	44-1/8×44-1/8×49-3/16
	Package	in	44-5/8×44-5/8×50-13/16	44-5/8×44-5/8×50-13/16
Net weight/Gross weight		lbs	628/650	628/650
Loading quantity	40'GP/40'HQ	unit	20/40	20/40

Notice:

(1) The capacity stated above is measured under following conditions:

Mode	Outdoor Temperature °C(°F)	Indoor Temperature °C(°F)
Cooling	35°C DB/24°C WB (95°F DB/76°F WB).	26.7°C DB/19.4°C WB (80.1°F DB/66.9°F WB).
Heating	8.3°C DB/6.1°C WB (46.9°F DB/42.9°F WB)	21.1°C DB/15.6°C WB (70°F DB/60°F WB).

(2) The technical parameters are changed along with the products improvement; please refer to the name plate of the unit for actual data.

4.2. Working Range

Mode	Range of Outdoor Temperature °C(°F)
Cooling	-5(23)~52(125.6)
Heating	-30(-22)~24(75.2)

5. CAPACITY CORRECTION

5.1. Model: ACiQ-PHH1824000K000V

Outdoor Temperature DB (HD)	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
-22 (70%)	19200	18800	18000
-15 (70%)	20800	20400	19600
-5 (70%)	22800	22300	21400
5 (70%)	24500	24000	23000
17 (70%)	24500	24000	23000
32 (75%)	24500	24000	23000
47 (80%)	24500	24000	23000
60 (70%)	27200	26600	25600

Outdoor Temperature DB	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
50	18600	23300	26500
65	18600	23300	26500
75	18600	23300	26500
85	17700	22200	25200
95	16900	21100	24000
105	15200	19000	21600
115	14400	18100	20500

5.2. Model: ACiQ-PHH1836000K000V

Outdoor Temperature DB (HD)	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
-22 (70%)	19200	18800	18000
-15 (70%)	22800	22300	21400
-5 (70%)	26100	25600	24500
5 (70%)	29400	28800	27600
17 (70%)	33900	33200	31900
32 (75%)	36700	36000	34600
47 (80%)	36700	36000	34600
60 (70%)	40800	40000	38400

Outdoor Temperature DB	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
50	27200	34000	38600
65	27200	34000	38600
75	27200	34000	38600
85	25900	32400	36800
95	24200	30300	34400
105	21800	27200	31000
115	20700	25900	29400

5.3. Model: ACiQ-PHH1748000K000V

Outdoor Temperature DB (HD)	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
-22 (70%)	34500	33800	32500
-15 (70%)	37900	37100	35600
-5 (70%)	42200	41400	39700
5 (70%)	45900	45000	43200
17 (70%)	47900	47000	45100
32 (75%)	47900	47000	45100
47 (80%)	47900	47000	45100
60 (70%)	53200	52200	50100

Outdoor Temperature DB	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
50	35500	44400	50400
65	35500	44400	50400
75	35500	44400	50400
85	33800	42200	48000
95	33100	41400	47000
105	29800	37200	42300
115	28300	35400	40200

5.4. Model: ACiQ-PHH1760000K000V

Outdoor Temperature DB (HD)	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
-22 (70%)	31400	30800	29500
-15 (70%)	37800	37100	35600
-5 (70%)	42400	41600	39900
5 (70%)	47100	46200	44300
17 (70%)	58100	57000	54700
32 (75%)	58100	57000	54700
47 (80%)	58100	57000	54700
60 (70%)	64500	63300	60700

Outdoor Temperature DB	Indoor Temperature		
	15°C (60 °F)	21°C (70 °F)	27°C (80 °F)
°F	Capacity Btu/h	Capacity Btu/h	Capacity Btu/h
50	42100	52700	59900
65	42100	52700	59900
75	42100	52700	59900
85	40100	50200	57000
95	39400	49300	56000
105	33500	41900	47600
115	29500	36900	41900

6. AIR VOLUME STATIC PRESSURE CURVE

Some units fan motor speed is adjustable, there are multiple static pressure mode, namely P03, P04, P05, P06, P07. Unit default static pressure mode is P05. The user can choose the suitable static pressure mode according to the actual air volume demand. External static pressure should stay within the minimum and maximum limits shown in the table below in order to ensure proper operation of both cooling, heating, and electric heating operation.

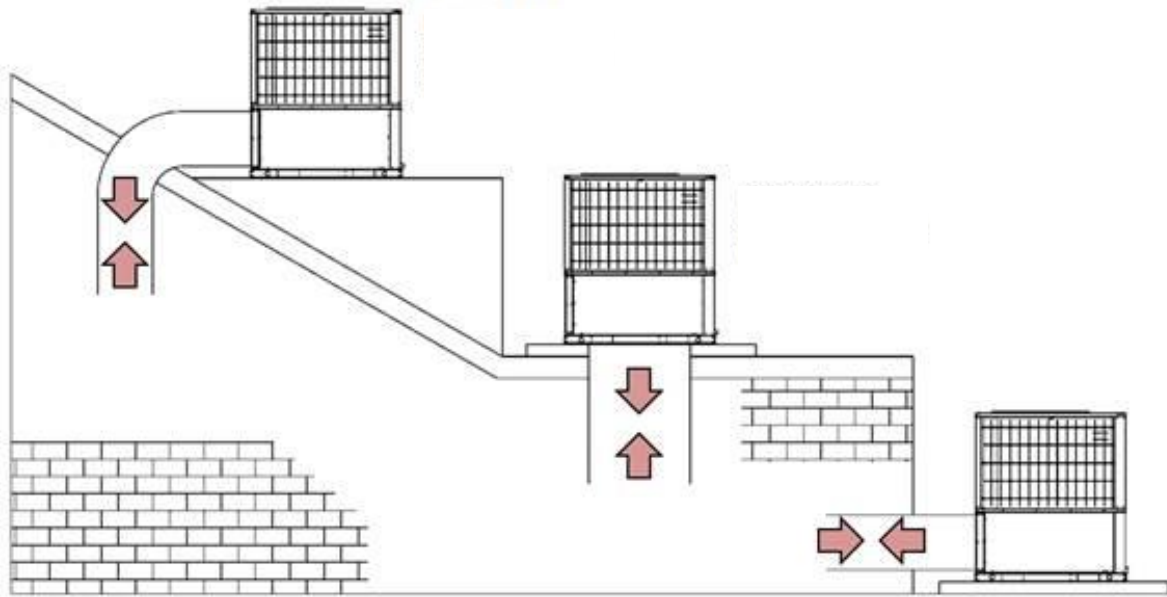
6.1. Model: ACiQ-PHH1824000K000V & ACiQ-PHH1836000K000V

Model	ACiQ-PHH1824000K000V & ACiQ-PHH1836000K000V								
Level	Static pressure:Inches W.C.(Pa)								
	0 (0)	0.1 (25)	0.2 (50)	0.3 (75)	0.4 (100)	0.5 (125)	0.6 (150)	0.7 (175)	0.8 (200)
Speed 4 (CFM)	1216	-	-	-	-	-	-	-	-
Speed 5 (CFM)	1293	-	-	-	-	-	-	-	-
Speed 6 (CFM)	1368	1264	-	-	-	-	-	-	-
Speed 7 (CFM)	1447	1348	1230	-	-	-	-	-	-
Speed 8 (CFM)	1501	1436	1327	1195	-	-	-	-	-
Speed 9 (CFM)	1506	1464	1417	1383	-	-	-	-	-
Speed 10 (CFM)	1498	1466	1423	1378	1280	-	-	-	-
Speed 11 (CFM)	1514	1472	1424	1385	1344	1303	-	-	-
Speed 12 (CFM)	1505	1467	1420	1375	1340	1303	1258	-	-
Speed 13 (CFM)	1510	1463	1424	1380	1340	1297	1258	1216	-

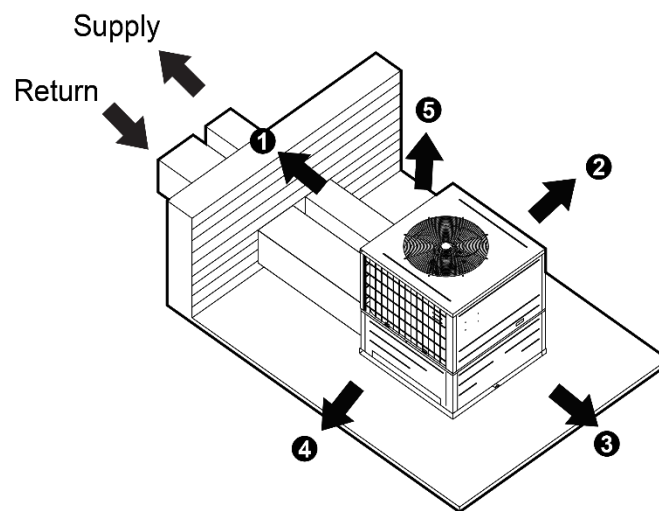
6.2. Model: ACiQ-PHH1748000K000V & ACiQ-PHH1760000K000V

Model	ACiQ-PHH1748000K000V & ACiQ-PHH1760000K000V								
Level	Static pressure:Inches W.C.(Pa)								
	0 (0)	0.1 (25)	0.2 (50)	0.3 (75)	0.4 (100)	0.5 (125)	0.6 (150)	0.7 (175)	0.8 (200)
Speed 4 (CFM)	1517	/	/	/	/	/	/	/	/
Speed 5 (CFM)	-	1464	/	/	/	/	/	/	/
Speed 6 (CFM)	-	1533	/	/	/	/	/	/	/
Speed 7 (CFM)	-	-	1517	/	/	/	/	/	/
Speed 8 (CFM)	-	-	1533	/	/	/	/	/	/
Speed 9 (CFM)	-	-	-	1525	/	/	/	/	/
Speed 10 (CFM)	-	-	-	-	1517	/	/	/	/
Speed 11 (CFM)	-	-	-	-	-	1558	1492	/	/
Speed 12 (CFM)	-	-	-	-	-	1566	1525	1480	/
Speed 13 (CFM)	-	-	-	-	-	1591	1538	1497	1470

7. Installation Positions and Clearances



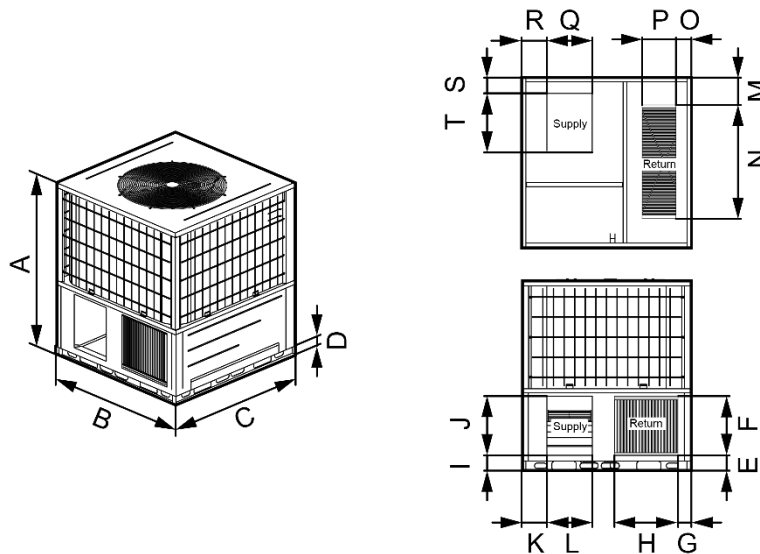
7.1. Installation Clearances



ACiQ-PHH1824000K000V, ACiQ-PHH1836000K000V, ACiQ-PHH1748000K000V, & ACiQ-PHH1760000K000V

Installation clearances		
Dimension(minimum)	mm	inch
A	600	24
B	1100	43
C	860	34
D	1100	43
E	1524	60

7.2. Outline Dimension

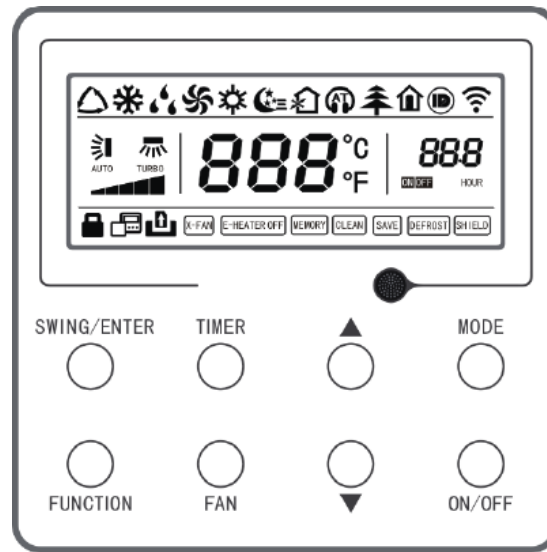


ACiQ-PHH1824000K000V, ACiQ-PHH1836000K000V, ACiQ-PHH1748000K000V, ACiQ-PHH1760000K000V

Dimension	A		B		C		D	
ACiQ-PHH1824000K000V & ACiQ-PHH1836000K000V	49-1/4 (1250)		44 (1120)		35-7/16 (900)		2-1/2 (65)	
	Side air vents							
	E	size of air return		G	I	size of air supply		K
		F	H			J	L	
	4-7/16 (113)	17-8/16 (445)	16-9/16 (420)	3-7/16 (87)	3-15/16 (101)	15-6/16 (390)	11-13/16 (300)	6-3/16 (157)
	Bottom air vents							
	M	size of air return		O	R	size of air supply		S
		N	P			Q	T	
	5-14/16 (149)	23-1/16 (586)	8-10/16 (219)	3-11/16 (93)	6-3/16 (156)	11-14/16 (302)	13-12/16 (350)	3-10/16 (92)
Dimension	A		B		C		D	
ACiQ-PHH1748000K000V & ACiQ-PHH1760000K000V	49-1/4 (1250)		44 (1120)		44 (1120)		2-1/2 (65)	
	Side air vents							
	E	size of air return		G	I	size of air supply		K
		F	H			J	L	
	4 (101)	15-3/8 (390)	16-1/2 (420)	3-3/8 (87)	4 (101)	15-3/8 (390)	11-3/4 (300)	6-1/2 (166)
	Bottom air vents							
	M	size of air return		O	R	size of air supply		S
		N	P			Q	T	
	7-7/8 (199)	28 (711)	9 (228)	3-3/4 (96)	6-1/2 (166)	11-3/4 (300)	15-3/8 (390)	4 (103)

Note: Above diagrams may be different from actual model.

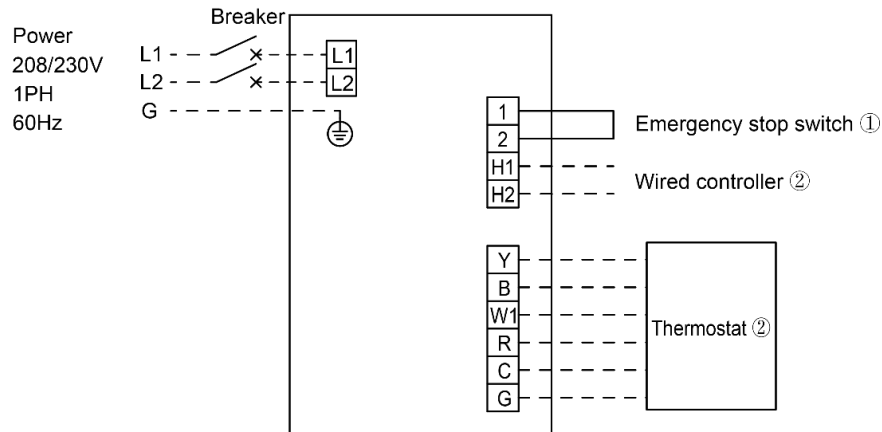
8. CONTROLLER



9. WIRING DIAGRAM

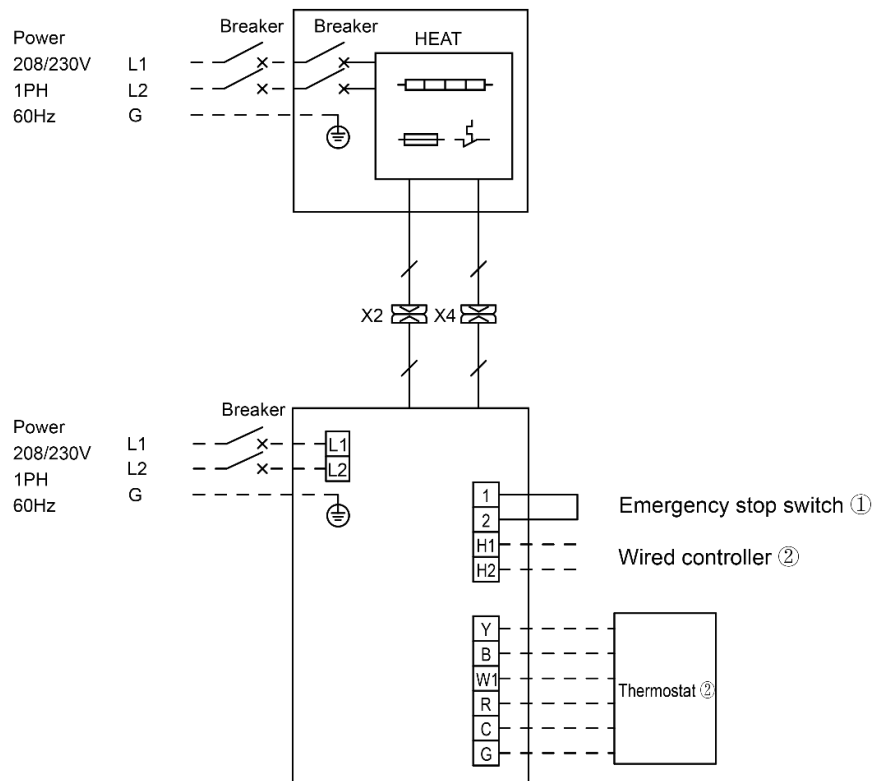
9.1. Field Wiring Diagrams

Model: ACiQ-PHH1824000K000V, ACiQ-PHH1836000K000V, ACiQ-PHH1748000K000V, ACiQ-PHH1760000K000V Without electric heater:



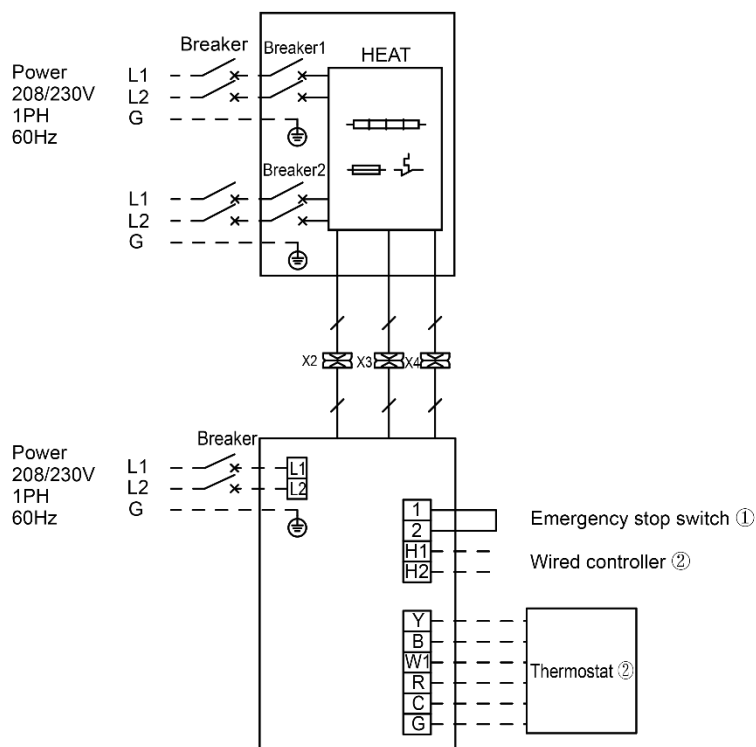
Note: ① The factory has been short-circuited, when the user needs to connect the emergency stop switch, please remove the corresponding short-circuit wire
② The unit can only be connected to a thermostat or wire controller

With electric heater:



Note: ① The factory has been short-circuited, when the user needs to connect the emergency stop switch, please remove the corresponding short-circuit wire
② The unit can only be connected to a thermostat or wire controller

Fig. with ECOHTR05KW, ECOHTR10KW



Note: ①The factory has been short-circuited, when the user needs to connect the emergency stop switch, please remove the corresponding short-circuit wire

②The unit can only be connected to a thermostat or wire controller

Fig. with ECOHTR15KW, ECOHTR20KW

9.2. Specification of Power Supply Wire and Circuit Breaker

Model	Power supply	Fuse capacity (A)	Maximum over-current protection(A)	Minimum circuit ampacity(A)
ACiQ-PHH1748000K000V ACiQ-PHH1760000K000V	208/230V-1Ph-60Hz	45	45	39.1
ACiQ-PHH1824000K000V ACiQ-PHH1836000K000V	208/230V-1Ph-60Hz	40	40	35

Notice:

- ① An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.
- ② The circuit breaker and power cord specification in above sheet is based on max power (max current) of the unit.
- ③ The power cord specification in above sheet is based on ambient temperature of 40 ℃.
- ④ If the supply cord is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.
- ⑤ The circuit breaker specification in above sheet is based on ambient temperature of 40 ℃. If the working condition is different, please adjust it according to the specification sheet of circuit breaker.

10. ACCESSORIES

Part Name	Model	Product Code	Model
			ACiQ-PHH1824000K000V ACiQ-PHH1836000K000V ACiQ-PHH1748000K000V ACiQ-PHH1760000K000V
Wired Controller			●

Note: “●” means standard, “○” means optional

ACiQ reserves the right to modify the specifications without prior notice. Please confirm the final specifications with sales representative.

Electric Heater Kits Available

SN.	Heater kit model	Code	Description	Ref. unit use(ton)
1	ECOHTR05KW	320004060202	Circuit breaker, 5kW heat strip	2.0/3.0/4.0/5.0
2	ECOHTR10KW	320004060200	Circuit breaker, 10kW heat strip	2.0/3.0/4.0/5.0
3	ECOHTR15KW	320004060201	Circuit breaker, 15kW heat strip	4.0/5.0
4	ECOHTR20KW	320004060204	Circuit breaker, 20kW heat strip	4.0/5.0

Note:

ACiQ is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements.

All features and specifications are subject to change without prior notice.

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ACiQ

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website, please check for the latest version.