QHP Series
50/60Hz Heat Pump
Inverter
Single Phase
2.7kW to 3.5kW

Engineering Databook





The QHP series 50/60Hz Split--System of inverter Heat Pumps are designed for quiet, reliable heating during the winter and cooling during the summer. These heat pump systems provide economy of operation through energy conservation when used with components designated by the manufacturer. The QHP series recovers heat for indoor comfort from outdoor air during the heating season and, by automatically reversing the refrigerant system, remove indoor heat and excess humidity during the cooling season.

FEATURES AND BENEFITS

AVAILABLE SIZES:
Nominal capacity are available from 2.7kW through 3.5kW to meet the needs of residential applications.

CERTIFICATION:
All models are registered with CE mark and EUROVENT.

ELECTRICAL RANGE
Units offered in single phase 220V ~ 240V.

ENVIRONMENTAL REFRIGERANT
The QHP uses R32, the environmentally sound refrigerant that provides home owners with additional peace of mind because R32 has zero ozone--depletion potential, and lower GWP.

UNIT DESIGN:
The copper tube(I-G), coated fin, enhanced sine wave, aluminum fin coil is designed for optimum heat transfer and corrosion protection.

SOUND SHIELD
All ODU have compressor sound SHIELD for noise attenuation.

OPERATING RANGE:
Minimum outdoor operating ambient in cooling mode is -15°C, and maximum is 50°C. Minimum outdoor operating range for heating mode is -15°C, maximum is 24°C.

Auto Photosensitive Display
The unit has a build-in light sensor to detect the ambient brightness. When the light is turned off, the display will dim down gradually, saving energy and offering you a comfortable sleep.

Auto-Restart
If the unit loses power, it will automatically restart with the prior settings once power has been restored.

FEATURES AND BENEFITS(CONT.)

ULTRA-HIGH ENERGY EFFICIENCY

(1)Φ7 and Φ5 hybrid pipe design heat exchanger offers better performance rate, which is 10% more than the conventional heat exchanger.
(2)The leading energy efficiency compressor as core element of the technology.
(3)Optimized air outlet design assists the energy efficiency.

LOW AMBIENT COOLING

With low ambient cooling function, the outdoor fan speed can be changed according to the condenser temperature and AC can run smoothly under the temperature as low as -25℃.

LOW AMBIENT HEATING

The advanced inverter technology to withstand the most extreme weather conditions. You can enjoy comfortable and heating air even when the outdoor temperature is as low as -25℃.

COMFORT HUMIDITY

With smart sensor technology, not only detect the temperature but also detect humidity level of the room. Through smart APP, you can customize your most comfortable humidity level, applicable from 30%~90%.

COMFORT AIRFLOW

Offers the most comfort air flow with warm air down to your toes, feeling spring in every corner of your room. Cool air up to the ceiling, enjoy a more homogeneous coolness around.

STRONG LONG WINDBLAST

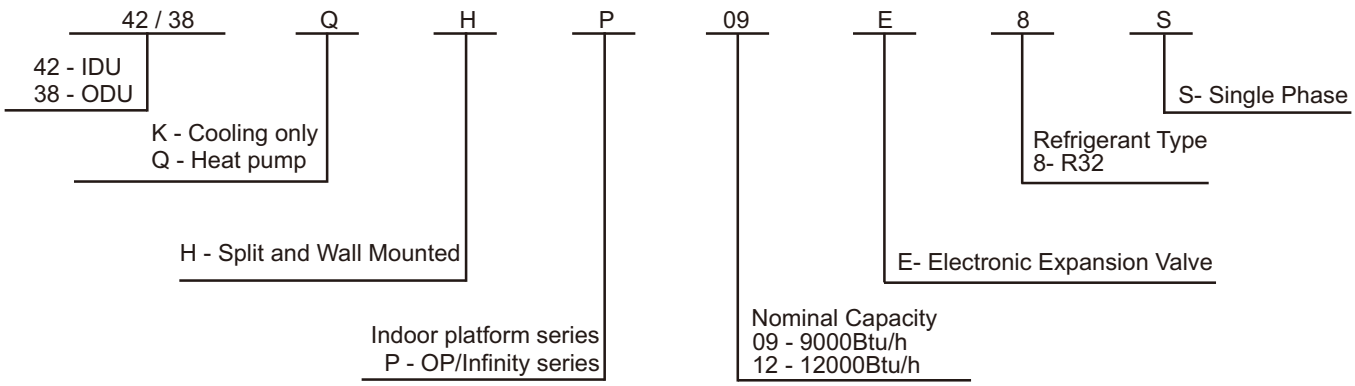
(1)Air outlet design is 110mm wide, 25% bigger than Midea conventional AC.
(2)Take 12000Btu/h OP series as an example, indoor fan is ψ108 mm wide, much bigger than Midea conventional AC as ψ82~94mm.

INTELLIGENT EYE

The intelligent eye includes two functions. These two function is selected through the IR remote button.
(1)wind flow away from people.
(2)wind flow follows the people.
Besides, with intelligent eye, the unit can achieve energy saving mode when people are away.
(1)When you are away for 30 minutes, automatically lowers the frequency to save energy(for inverter modes only).
(2)When you are away for 2 hours, automatically shuts down.
(3)When you returns to the room, automatically turns on.

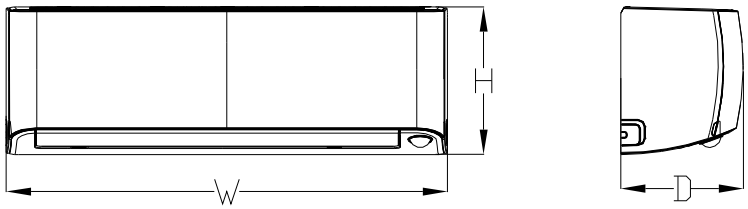
QHP

PRODUCT NUMBER NOMENCLATURE



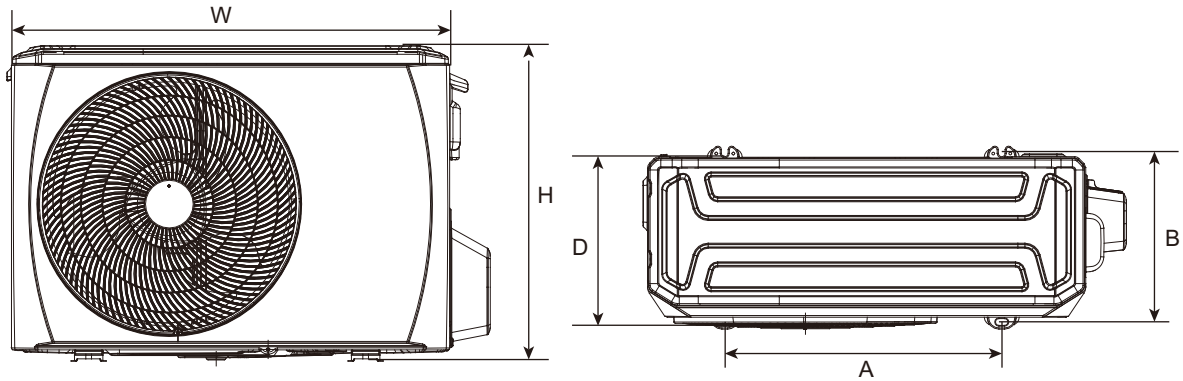
DIMENSION

■ Indoor



Model	W	D	H
42QHP09E8S	895	248	298
42QHP12E8S	895	248	298

■ Outdoor



Model	W	H	D	A	B
38QHP09E8S	800	554	333	514	340
38QHP12E8S	800	554	333	514	340

ELECTRICAL DATA

MODEL	V/PH	OPERATING VOLTS*		COMPRESSOR		INDOOR FAN MOTOR		OUTDOOR FAN MOTOR		MRC	MAX FUSE** OR CKT BKR AMPS
		Max.	Min.	MODEL	RLA	MODEL	FLA	MODEL	FLA		
QHP09	220-240 / 1	254	207	KTN110D42UFZ	5.95	ZKFP-20-8-6-7	0.22	ZKFN-34-8-1-3	0.39	10.0	16
QHP12				KTN110D42UFZ	5.95	ZKFP-20-8-6-7	0.22	ZKFN-34-8-1-3	0.39	13.0	20

*Permissible limits of the voltage range at which the unit will operate satisfactorily.

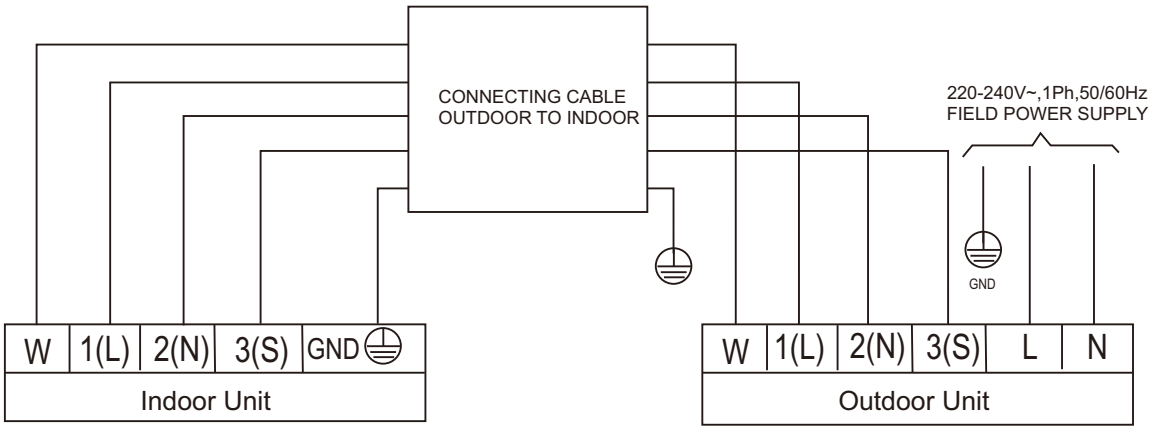
**Time---Delay fuse.

FLA ---Full Load Amps

MRC ---Maximum Running Current

RLA ---Rated Load Amps

CONNECTION DIAGRAMS



IDU TERMINAL BLOCK

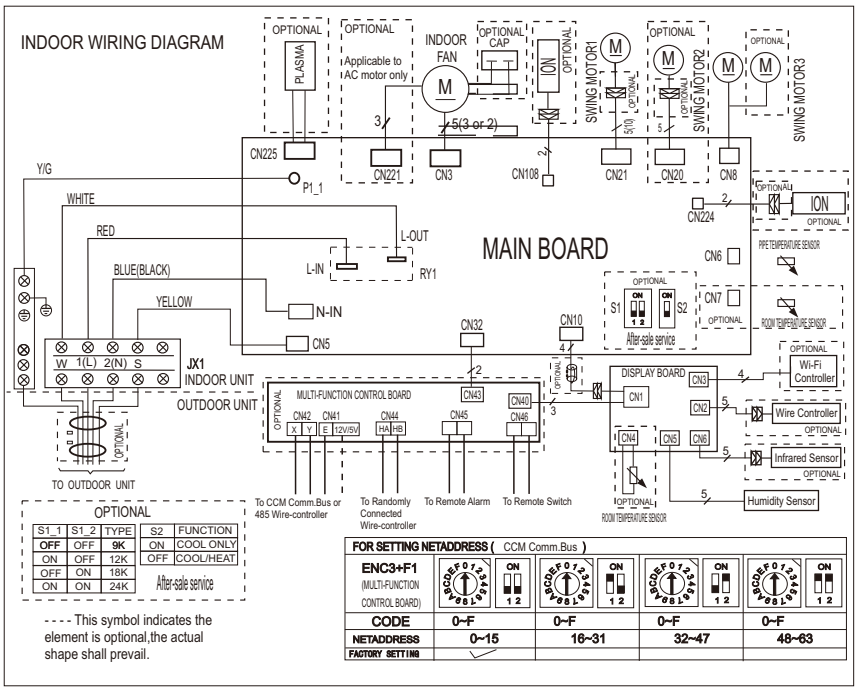
ODU TERMINAL BLOCK

Notes:

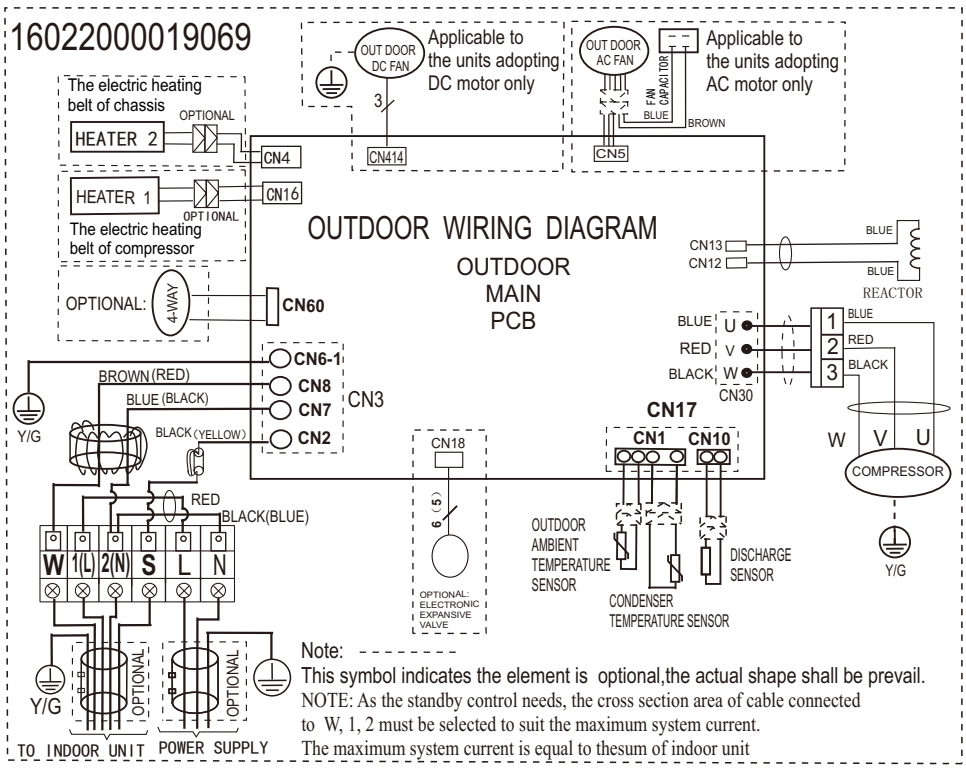
1. Do not use thermostat wire for any connection between indoor and outdoor units.
2. All connections between indoor and outdoor units must be as shown. The connections are sensitive to polarity and will result in a fault code.

WIRING DIAGRAMS

Wiring diagram for 42QHP09E8S & 42QHP12E8S



Wiring diagram 38QHP09E8S & 38QHP12E8S



SPECIFICATION FOR QHP MODELS

OUTDOOR UNIT		38QHP09E8S	38QHP12E8S
Cool capacity	kW	2.64 (1.0-4.1)	3.52 (1.0-4.7)
Heating capacity	kW	4.20 (0.8-5.1)	4.20 (0.8-6.3)
Heating capacity at -7℃	kW	3.8	4.2
Heating capacity at -10℃	kW	3.6	4.1
Heating capacity at -15℃	kW	3.5	3.8
Heating capacity at -20℃	kW	2.9	3.1
Heating capacity at -25℃	kW	2.7	3.0
P design capacity cooling	kW	2.64	3.52
P design capacity heating (warmer)	kW	3.10	3.10
P design capacity heating (average)	kW	2.40	2.40
P design capacity heating (colder)	kW	3.70	3.70
Temp range cooling	℃	-25~46	-25~46
Temp range heating	℃	-25~24	-25~24
SEER/ SCOP(warmer)/ SCOP(average)/ SCOP(colder)	W/W	9.3 / 6.2 / 5.2 / 4.2	9.0 / 6.2 / 5.2 / 4.2
Energy label		A+++ / A+++ / A+++ / A+	A+++ / A+++ / A+++ / A+
Yearly energy consumption	kWh	100 / 700 / 647 / 1266	137 / 700 / 647 / 1266
EER/ COP	W/W	5.18 / 4.72	4.40 / 4.72
Voltage, Hz		220-240V~, 50/60Hz	220-240V~, 50/60Hz
Standard current (cooling)	A	3.1	3.7
Standard input (cooling)	W	510	800
Standard current (heating)	A	4.0	4.0
Standard input (heating)	W	890	890
Rated current	A	10.0	13.0
Rated input	W	2415	3105
Refrigerant amout	kg	0.87	0.87
Compressor model		KTN110D42UFZ	KTN110D42UFZ
Refrigerant oil/ oil quantity	ml	ESTEL OIL VG74 / 350 ml	ESTEL OIL VG74 / 350 ml
Liquid side/ Gas side	mm(inch)	Φ6.35/Φ9.52 (1/4"/3/8")	Φ6.35/Φ9.52 (1/4"/3/8")
Standard piping length	m	5	5
Min piping length	m	3	3
Max piping length	m	25	25
Max difference	m	10	10
Additional charge	g/m	12	12

INDOOR UNIT		42QHP09E8S	42QHP12E8S
Indoor fan motor Input	W	60	60
Indoor fan motor max current	A	0.7	0.7
Sound power level	dB(A)	60	60
Sound pressure level (high/med/low/silence)	dB(A)	41/38/26/21	42/39/28/22
Air flow (high/med/low/silence)	m^3/h	540/460/340/190	570/490/360/210
Weight (Net/Gross)	kg	13.0 / 17.0	13.0 / 17.0
Dimensions (W?D?H)	mm	895?248?298	895?248?298
Packing (W?D?H)	mm	985?330?370	985?330?370

OUTDOOR UNIT		38QHP09E8S	38QHP12E8S
Sound power level	dB(A)	61	63
Sound pressure level	dB(A)	58	58
Airflow	m^3/h	2000	2000
Weight (Net/Gross)	kg	36.5 / 40.0	36.5 / 40.0
Dimensions (W?D?H)	mm	800?333?554	800?333?554
Packing (W?D?H)	mm	920?390?615	920?390?615

Note

* Sound data @ cooling mode

*-7℃/-10℃/-15℃/-20℃/-25℃ heating @ free frequency

CAPACITY TABLE

Trend of total & sensible Heat Capacity / Indoor & Outdoor Air Temperature

Product models: 42/38QHP09E8S

Specification of product at standard condition.

Standard Condition		
	Indoor	27ºCDB/19ºCWB
	Outdoor	35ºCDB/24ºCWB

Total Cooling Capacity(TC)	4100 W
Sensible Heat Capacity(SHC)	3031 W

Cooling	Outdoor conditions (DB)						
Indoor Conditions	(W)	25℃	30℃	35℃	40℃	43℃	46℃
21/15℃ DB/WB	TC	2477	3280	3404	3126	2831	1656
	SC	1802	2434	2597	2464	2276	1357
	Input	854	1291	1553	1667	1655	1057
24/17℃ DB/WB	TC	2655	3532	3718	3481	3187	1882
	SC	1912	2585	2779	2678	2506	1518
	Input	855	1301	1574	1697	1690	1082
27/19℃ DB/WB	TC	2841	3884	4100	3780	3410	1978
	SC	2072	2824	3031	2885	2666	1589
	Input	872	1327	1606	1733	1725	1104
32/23℃ DB/WB	TC	2894	4095	4504	4348	4035	2405
	SC	1963	2768	3061	3010	2847	1741
	Input	863	1334	1637	1785	1788	1151

Standard Condition		
	Indoor	20ºCDB/ -ºCWB
	Outdoor	7ºCDB/ 6ºCWB

Total Cooling Capacity(TC)	5100 W

Heating	Outdoor conditions (DB)								
Indoor Conditions	(W)	12℃	7℃	2℃	-7℃	-10℃	-15℃	-20℃	-25℃
15/-℃ DB/WB	TC	5499	5320	4218	3861	3658	3557	2947	2744
	Input	1701	1651	1495	1447	1428	1422	1415	1407
18/-℃ DB/WB	TC	5178	5049	4038	3716	3521	3423	2836	2641
	Input	1741	1651	1553	1590	1569	1563	1556	1547
20/-℃ DB/WB	TC	5150	5100	3936	3800	3600	3500	2900	2700
	Input	1788	1710	1574	1565	1544	1538	1531	1522
22/-℃ DB/WB	TC	4788	4961	3544	3669	3476	3380	2800	2607
	Input	1653	1697	1574	1640	1618	1612	1605	1595

CAPACITY TABLE

Trend of total & sensible Heat Capacity / Indoor & Outdoor Air Temperature

Product models: 42/38QHP12E8S

Specification of product at standard condition.

Standard Condition

Indoor	27ºCDB/19ºCWB
Outdoor	35ºCDB/24ºCWB

Total Cooling Capacity(TC)	4700 W
Sensible Heat Capacity(SHC)	3474 W

Cooling	Outdoor conditions (DB)						
Indoor Conditions	(W)	25℃	30℃	35℃	40℃	43℃	46℃
21/15℃ DB/WB	TC	2789	3760	3902	3584	3245	1898
	SC	2029	2791	2977	2825	2610	1556
	Input	996	1533	1844	1979	1965	1255
24/17℃ DB/WB	TC	2989	4050	4262	3990	3654	2157
	SC	2152	2963	3185	3070	2873	1739
	Input	996	1545	1869	2015	2006	1284
27/19℃ DB/WB	TC	3199	4451	4700	4333	3909	2268
	SC	2333	3237	3474	3307	3057	1821
	Input	1017	1576	1907	2057	2048	1311
32/23℃ DB/WB	TC	3258	4695	5163	4984	4625	2757
	SC	2210	3173	3509	3451	3263	1996
	Input	1006	1585	1943	2119	2123	1366

QHP

Standard Condition

Indoor	20ºCDB/ -ºCWB
Outdoor	7ºCDB/ 6ºCWB

Total Cooling Capacity(TC)	6300 W

Heating	Outdoor conditions (DB)								
Indoor Conditions	(W)	12℃	7℃	2℃	-7℃	-10℃	-15℃	-20℃	-25℃
15/-℃ DB/WB	TC	6907	6572	5171	4269	4167	3863	3151	3049
	Input	2371	2263	2033	1920	1901	1856	1833	1819
18/-℃ DB/WB	TC	6505	6237	4949	4108	4011	3717	3032	2935
	Input	2427	2263	2111	2110	2088	2039	2014	1999
20/-℃ DB/WB	TC	6471	6300	4824	4200	4100	3800	3100	3000
	Input	2492	2344	2140	2076	2055	2007	1982	1967
22/-℃ DB/WB	TC	6016	6128	4344	4055	3958	3669	2993	2896
	Input	2305	2327	2141	2176	2154	2103	2077	2061