SWIMMING POOL

HEAT PUMP UNIT

Installation & Instruction Manual

—— **English Version** ——

Model:

SBR-17.0H-B

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| Mac No. of this unit:	

Dear customers:

In order to use this machine safely, please read this user's manual carefully before using and installation, especially pay attention to each notice remark for usage and maintenance. Also keep it carefully for later use. Heat pump water heater is a professional machine, it may cause damage or hazard when wrong installed. Relevant installation and maintenance shall be done by technical people. Please contact our installation service for reference.

⚠ **Important warning:**

■This appliance can used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance .Cleaning and user maintenance shall not be made by children without supervision.

■Children should be supervised to ensure that they do not play with the appliance.

■The specifications of fuse is: AC250V, 3.15A.

■The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions and these means must be incorporated in the fixed wiring in accordance with the wiring rules.

Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock..

■ The running range of the heat pump:

(1)Heating : outlet water range:15 ~40℃， the ambient temperature
　　　　　range 0 ~ 32℃;

(2) Cooling : outlet water range:8 ~30℃， the ambient temperature
　　　　　range 20 ~ 43℃;

(3) the pressure of water ： 14 ~ 18kpa

■Do not forget to connect the ground wire　　　■ Use an exclusive power source
　　　　　　　　　　　　　　　　　　　　with a circuit breaker
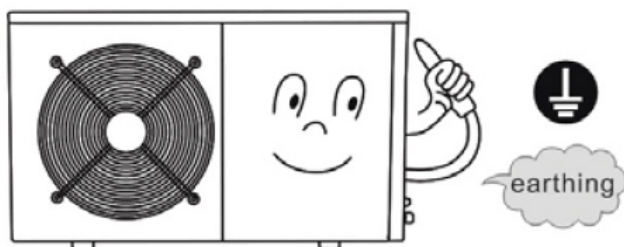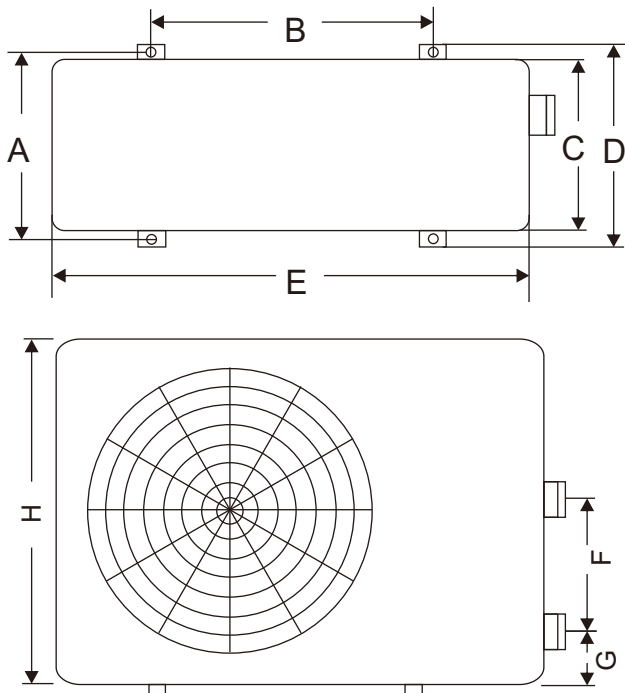
SWIMMING POOL HEAT PUMP

Specification

1.Performance data of Swimming Pool Heat Pump Unit

Model		SBR-17.0H-B
Rated Heating Capacity	KW	17.0
	BTU/h	60000
Rated Cooling Capacity	KW	12.0
	BTU/h	42000
Heating Range	℃	15~40
Cooling Range	℃	8~30
Heating Input Power	W	3700
Cooling Input Power	W	3630
Running Current Heating	A	17.6
Running Current Cooling	A	16.2
COP	W/W	4.6
EER	W/W	3.3
Power Supply	V/PH/Hz	220/1/50
Compressor Type		Scroll
Compressor Nos.		1
Fan Motor Nos.		1
Fan Motor Input	W	90
Fan Speed	RPM	890
Noise	dB(A)	58
Water Connections	inch	1.5
Water Flow Volume	m^3/h	5-8
Water Pressure Drop	Kpa	16
Unit Dimension	L	1115
	W	470
	H	940
Packing Dimension	L	1200
	W	480
	H	1090
Weight	Net Weight	107
	Gross Weight	122

Measurement conditions:
outdoor air temp:24℃/19℃, inlet water temp:27℃
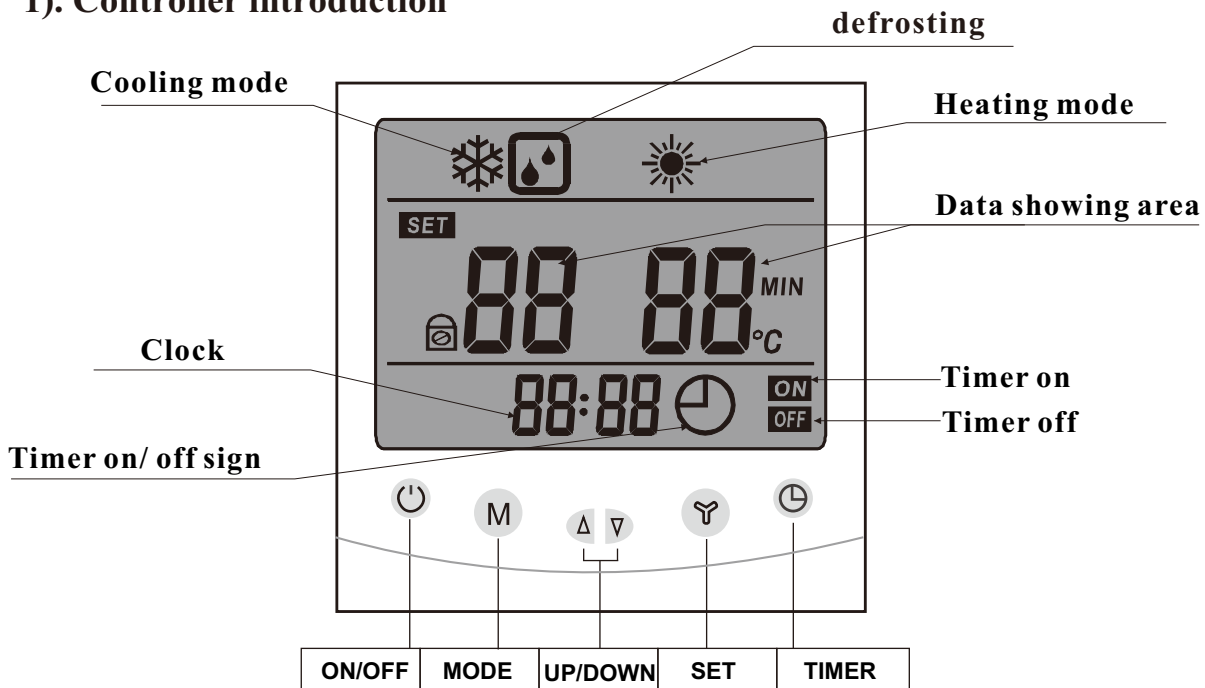
2.The dimension for Swimming Pool Heat Pump

Measure: mm

Model Size	SBR-17.0H-B
A	440
B	760
C	425
D	470
E	1115
F	370
G	80
H	935

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3.Wire controller operation guide

1). Controller introduction

2) Wire controller button definition

- ⏻ button

    ---to turn on or turn off your heat pump.

- △ and ▽ button

    -----up and down button to check or change setting.

    Press these two button at the same time for 3seconds, lock the keyboard.

- ⋎ button

    —Change setting. While use △ or ▽ button to check parameter, press ⋎ button at the moment, could change the setting of current parameter. After finished, press ⋎ to confirm.

    Press ⋎ button alone, could come to clock setting. First set the hour data, and use △ or ▽ button to change the hour data.

    Secondly press ⋎ again, to come to minute data setting. Still use △ or ▽ button to change the minuted data. After that, press ⋎ to confirm.

- Ⓜ button

    ---Press Ⓜ button to switch to heating or cooling mode.

    ---Press Ⓜ for 3 seconds in standby status, could enter for Force Defrost.

- 🕒 button

    ----Button for timming.Integrating with up and down button, to set the time for turning on or turning off the heat pump.

3) Parameters

Parameters	Definition	Range	Default	Remark
SET 0	Cold water set point temp	8−25°C	12°C	Can adjust
SET 1	Hot water set point temp	20−40°C	40°C	Can adjust
SET 2	Defrosting Cycle	30−90Min	40Min	Can adjust
SET 3	Temperature to enter to defrosting in heating mode	−30°C−0°C	−7°C	Can adjust
SET 4	Temperature to exit defrosting under heating mode	2−30°C	13°C	Can adjust
SET 5	Defrosting time	1−12Min	8Min	Can adjust
SET 7	System quantity	1 / 2	1	Can adjust
SET 8	Temp difference	2−15°C	5°C	Can adjust
SET 9	Second set point (maximum)	35−40°C	40°C	Can adjust
SET A	Second set point (minimum)	20−25°C	25°C	Can adjust
SET B	Water pump controlling mode: 0: water pump always on 1: water pump shut off after compressor stops for 1 minutes. 2. While reach set point temp, water pump stop 30 minutes, then auto start running for 3 minutes. And stop again 30 minutes, restart running for 3 minutes. (repeat working like that)	0−2	0	Can adjust
1	Inlet water temperature	0~99°C		Tested data
2	Outlet water temperature	0~99°C		Tested data
3	Evaporator tube temperature of system 1	−35~80°C		Tested data
4	Evaporator tube temperature of system 2	−35~80°C		Tested data
7	Ambient temperature	−35~80°C		Tested data
8	Exhaust temp of system 1	0~125°C		Tested data
9	Exhaust temp of system 2	0~125°C		Tested data

4) Failure code and parameter tables

Protect/Failure	Long-distance controller	Remark
Heat ump in Stand-by mode		
Normal running		
Inlet water temperature sensor failure	PP1	
Outlet water temperature sensor failure	PP2	
Coil temperature sensor 1 failure	PP3	
Gas suction side temperature sensor 1 failure	PP4	
Ambient temperature sensor failure	PP5	
Coil temperature sensor 2 failure	PP6	
Winter anti-freezing protection I	PP7	
Winter anti-freezing protection II	PP7	
Gas suction side temperature sensor 2 failure	PP8	
Exhaust temp sensor 1 failure	PP9	
Exhaust temp sensor 2 failure	PP10	
Exhaust 1 high temp protection	PP 11	
Exhaust 2 high temp protection	PP 12	
System high pressure protection	EE1	
System low pressure protection	EE2	
Water flow switch failure	EE3	
Power source wrong/open phase	EE4	
Wire controller communication failure	EE8	
Defrosting	DEFROST	

5) Two ways to connect wifi

a. First way

◎ Install the APP of "SmartLink3 Demo"

◎ Turn on the heat pump, and make sure the area of heat pump installed cover with wifi signal. What's more, make sure your smart phone with wifi connected.

◎ Long press the timer button of LCD controller for 5 seconds. See below pic.

Timer button

◎ Then input the password for example 12345678 of WIFI TP LINK-22233.
   (**The wifi should be your local wifi, and your password of local wifi**)
   And press "Start", see below pic. (Your smart phone should near the controller to ensure easy connected for wifi)
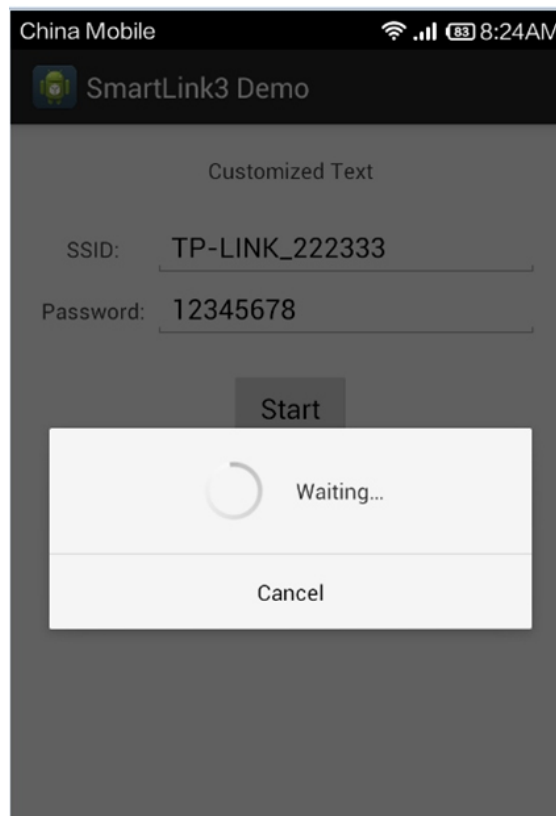
a. First way

◎ It may take 1 minute to match all wifi setting.

If connected successful, it could show "**SmartLink Compelted**" as below pic.
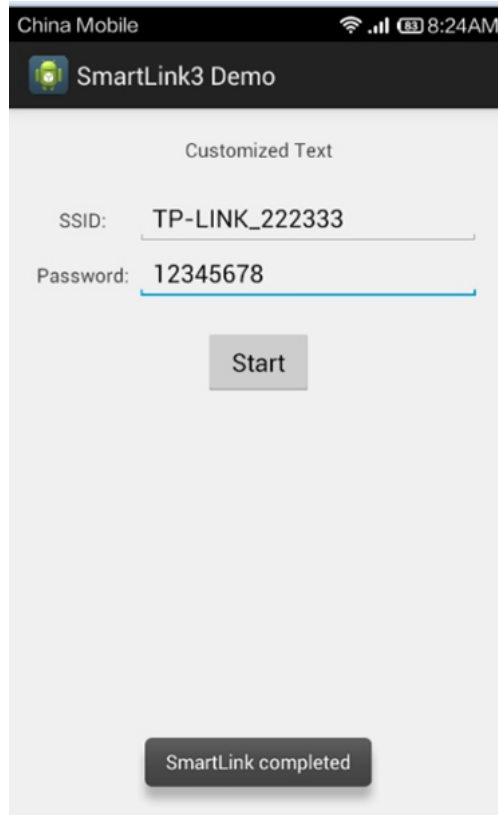
◎ If failed, it could show "**time out**"as below pic, then you have to repeat step 3 & 4 again.
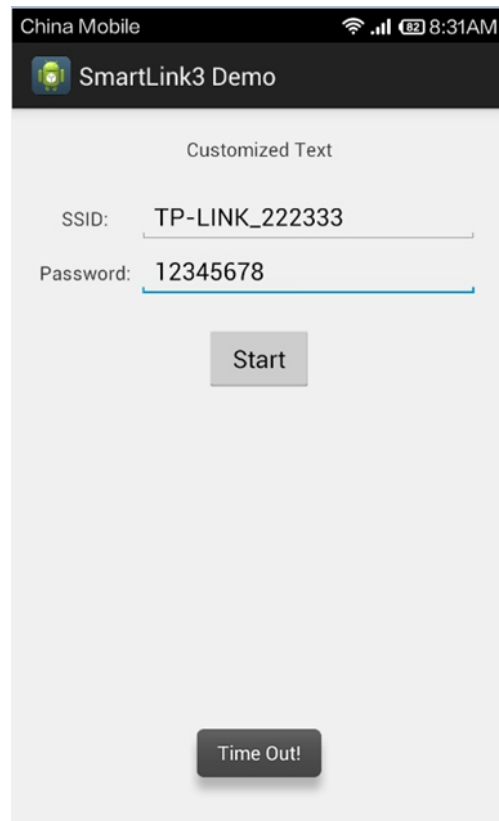
b. Second way for wifi setting

◎ Turn on the heat pump.

◎ Use laptop or smart phone to find wifi "HF-LPB100"and connect it.

◎ Open website of "10.10.100.254", input user name and password as below.

User name: admin   Password: admin

After that, you could find below interface.

◎ Select work mode, change to STA mode. And then press Save.
See below ref pic.

b. Second way for wifi setting

◎ Then select STA setting, press Scan, then press Save. See below refer pic.
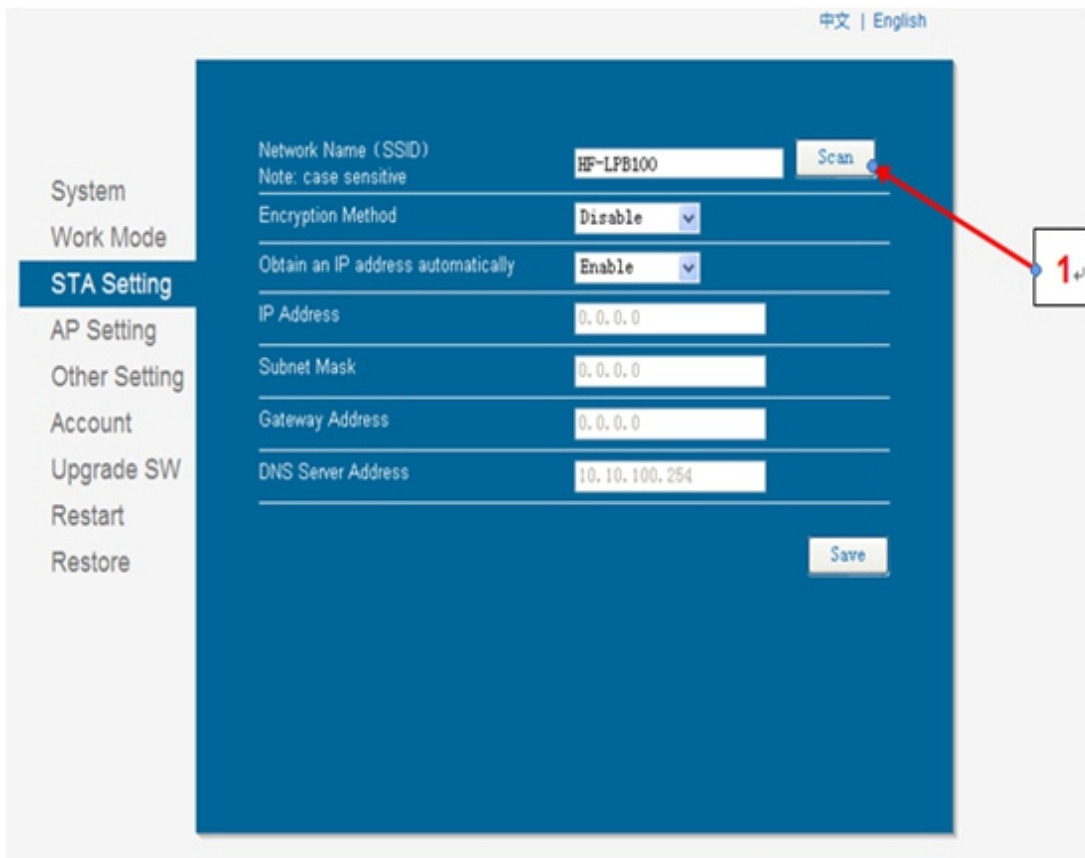
◎ Please choose the safety and reliable local area network which available. Then press OK to Confirm.
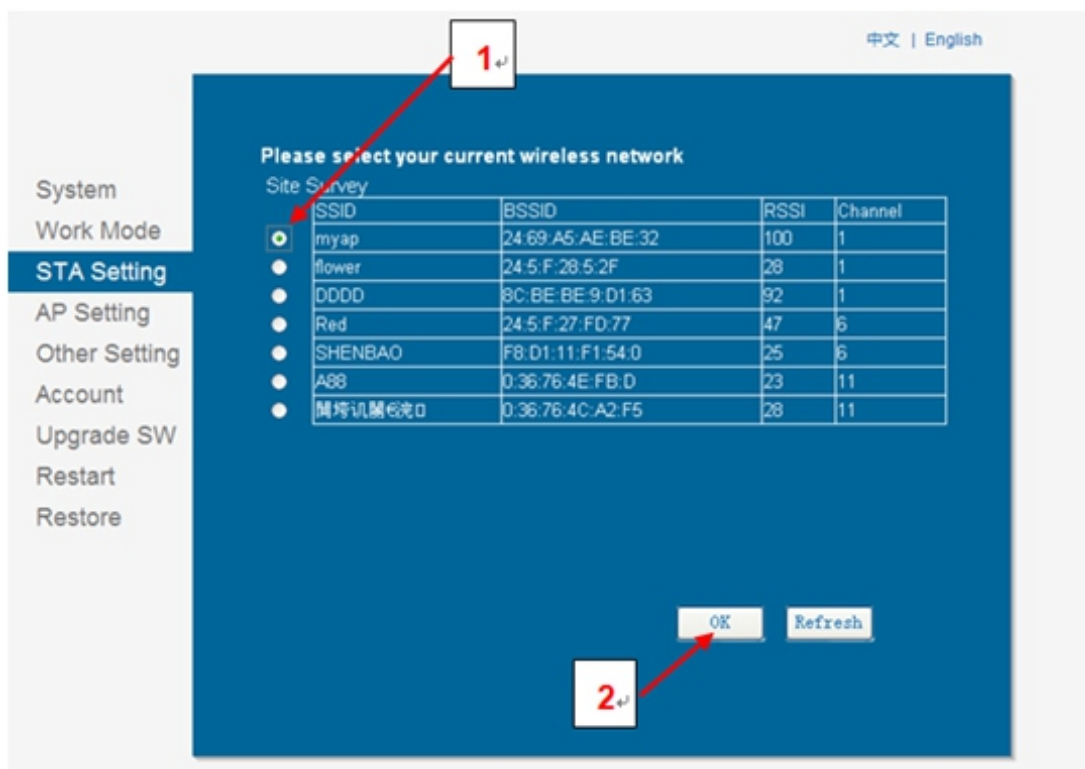
b. Second way for wifi setting

◎ Make sure the Encryption Method choose **WPA2PSK**, and Encryption Algorithm choose **AES**. Input the **password** of your local area network. Then press **Save**.
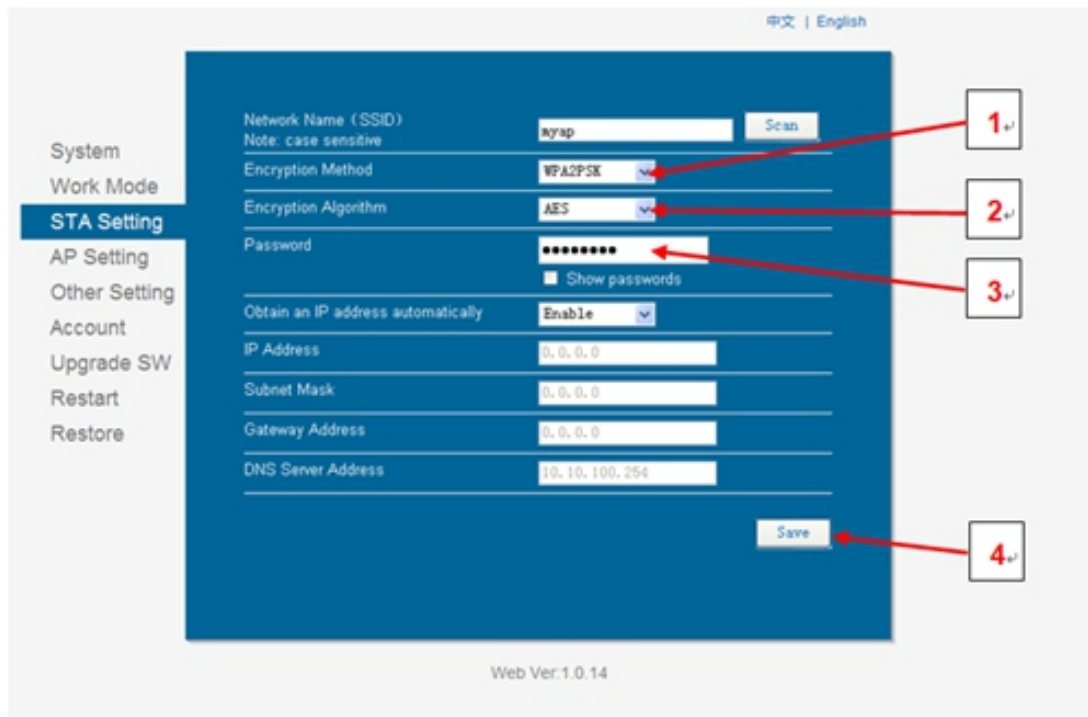
◎ After finished all above steps, come to Restart interface, and press OK to confirm RESTART. See below pic.
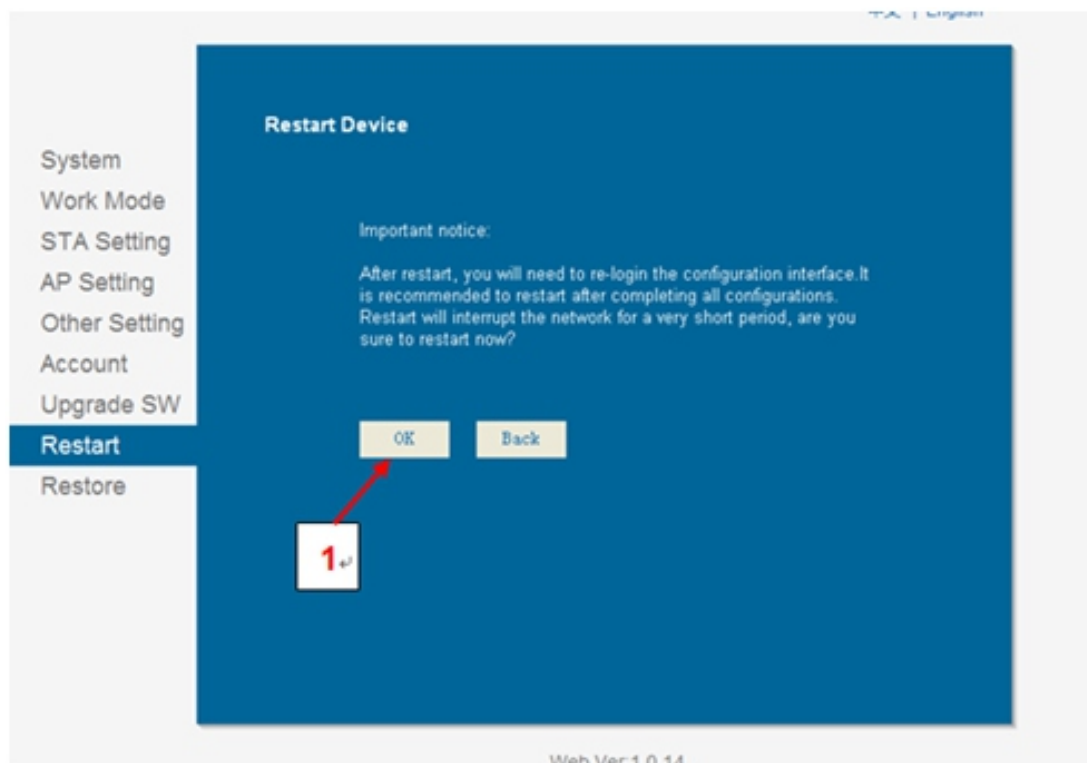
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c. Remarks

◎ Make sure to press "SAVE" for each setting.

◎ If IP address changed, all above setting need to re-set.

◎ If you try first way of "Smartlink3 DOMO" and failed, then try the second way for wifi setting.

Have to long press Turn on/off button (see below pic) for 10 seconds, otherwise, wifi signal will never come out.

Turn on/off button

d. Fast Inquiry

◎ After wifi connected successful, you could have inquire about heat pump status by below website.   http://app.xlink.cn:9001/query.html

Or you could scan below QR Code to enter the website for Heat pump status checking.

Fast inquire (only to check 1 or 2 heat pump units)

◎ Agent research (Able to check all the heat pumps as order). Or visit below website.

http://app.xlink.cn:9001/login.html

6) Setting about S1,S2 & S3 switch

 S1 Switch---Second set point

 S2 Switch---Long distance demand for heating

 S3 Switch---Long distance demand for cooling

Please refer to the wiring diagram for the location of above S1, S2 & S3 switch.

(1)Heat pump turns on when S2 or S3 switch has well connected.

 While S2 or S3 has connected, suddenly press the off button on the LCD controller.

 Heat pump will stop for 3 minutes. However, heat pump continues to turn on if S2

 or S3 still has been connected after 3 minutes.

(2)The Timer function is out of validity either S2 or S3 switch has connected.

(3)Heat pump turns off when S2 or S3 switch is disconnected. Meanwhile, need to

 use LCD controller to turn on /off the heat pump.

(4)Second set point available when S1 switch has well connected.

 At the same time, water temp set point setting decided by ambient temp, Parameter

 SET 9 and Parameter SET A. (Both C & D parameter could be adjusted).

 Parameter SET 9 (maximum setting range 40-50 °C , default 50°C)

 Parameter SET A (minimum setting range 20-30°C, default 30°C)

 A. When ambient temp < 5°C, set point temp refer to the data of Parameter SET 9

 B. When ambient temp >15°C, set point temp refer to the data of Parameter SET A

 C When < ambient temp < 15°C, set point temp = Data of Parameter SET 9-(Data of

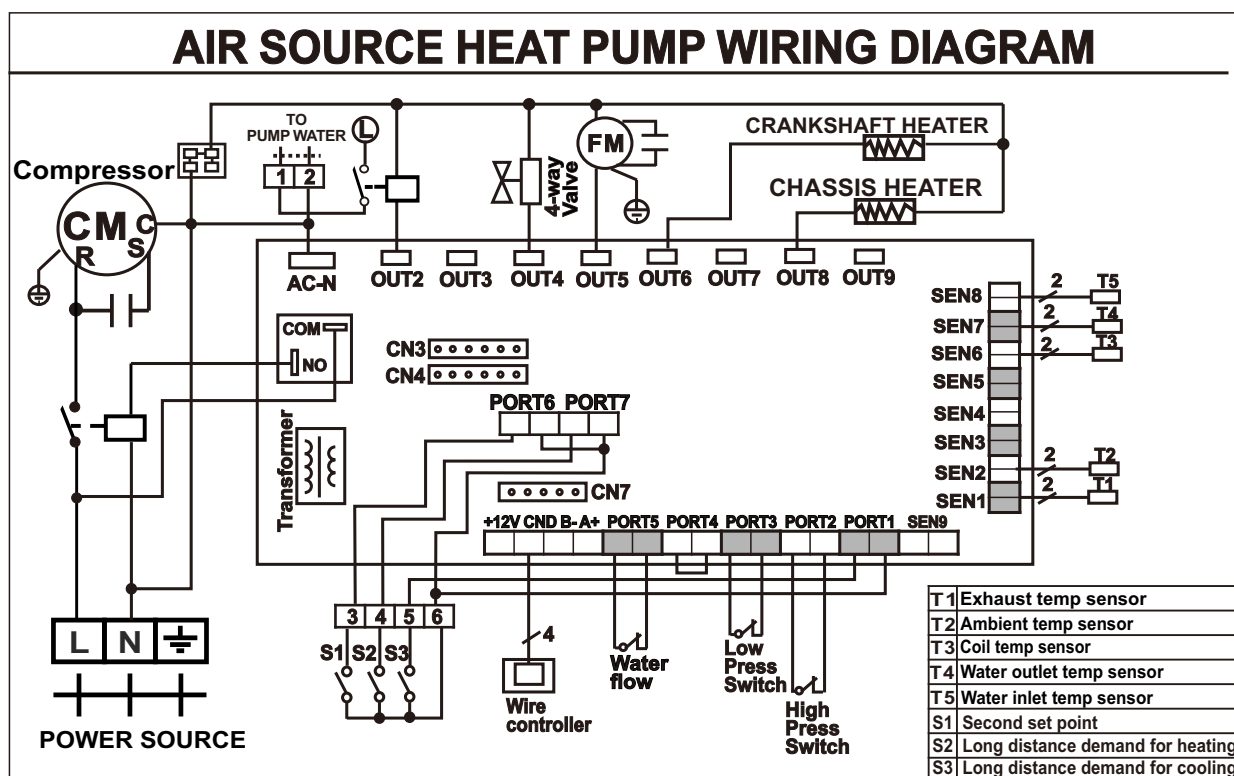 parameter SET 9- data of parameter SET A)/ (15-5)*(ambient temp -5).

 For example, when ambient temp is 18 deg c, Parameter SET 9 is 50 deg c, Parameter

 SET A is 30 deg c.Then set point temp=50-(50-30)/(15-5)*(18-5)

(5)When S1 disconnected, set point temp control by LCD controller.

 (Refer to the setting of Parameter SET 9 & SET A (default setting 50° C & 30°C)

4. Wiring diagram

AIR SOURCE HEAT PUMP WIRING DIAGRAM

T 1	Exhaust temp sensor
T 2	Ambient temp sensor
T 3	Coil temp sensor
T 4	Water outlet temp sensor
T 5	Water inlet temp sensor
S1	Second set point
S2	Long distance demand for heating
S3	Long distance demand for cooling

5. Maintenance

○ To check the water supply device often. You should avoid the condition of no water or air entering into system, or that will influence unit's performance and reliability. You should clear the water filter regularly to avoid unit's damage by filter' jam.

○ There should be dry, sanitary and ventilation around the unit. To clean the side condenser regularly for good heating exchanging and saving energy.

○ To check the power supply and cable connection often, to see if there is abnormal action or bad smell about the electrical component. If yes, Contact Installer immediately.

○ Please discharge all water in the water pump and water system lest freeze the water pump or water system.You should discharge the water at the bottom of water pump if the units will stop for long time. And you should check the units thoroughly and fill the system with water fully before power on the units again.

Service

1.How to obtain Service For Pool Owner

If you are having trouble with the unit, please contact the Installer immediately.

1. Provide your Dealer with the following information:

A. Serial # located on back panel nameplate .

B. Proof of Installation Date(Bill of sale or original invoice only)

C. Description of the Symptoms

2.For Installing Dealer

If your customer is having a problem and you as the installing dealer have verified that the cause is NOT external to my company(such as tripped breaker, clogged pool filter, inadequate pump run time, etc.) following these steps will help you obtain the fastest service possible for your customer.

1. Help your customer gather the following information:

A. Serial # located on back panel nameplate .

B. Proof of Installation Date(Bill of sale or original invoice only)

3.Will Ever Need Freon

Unless there is a leak in the sealed refrigeration system, the factory charge of freon should last for the life of the unit. Freon is very stable and should not degrade or breakdown even under severe operating conditions. If your unit needs freon, then it has a leak, and adding freon will not solve the problem. The leak must be located and repaired. Fortunately, freon leaks are very uncommon and usually are due to shipping.

Attachment 1

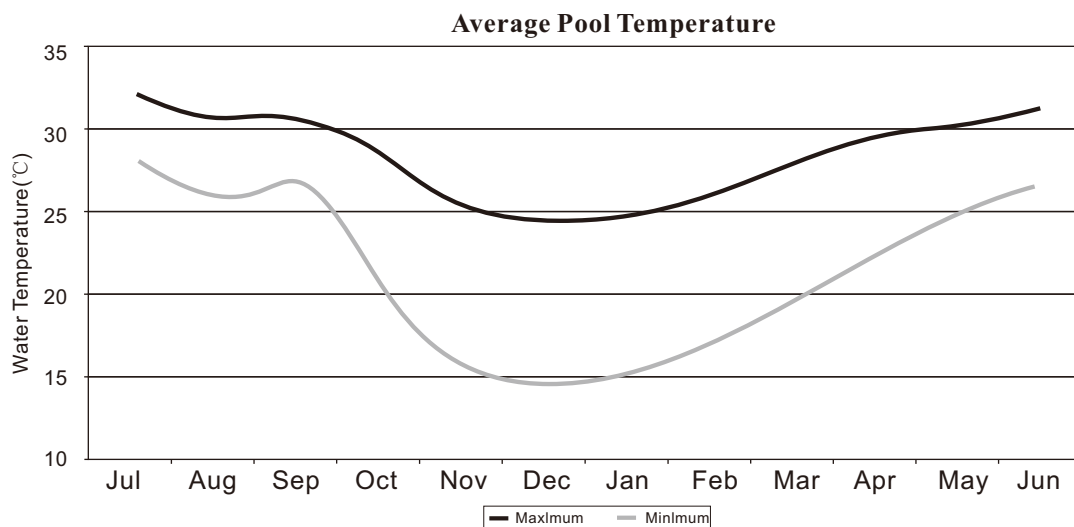## SWIMMING POOL HEATING SYSTEM EVALUATION

1. The charts displayed for an outdoor pool
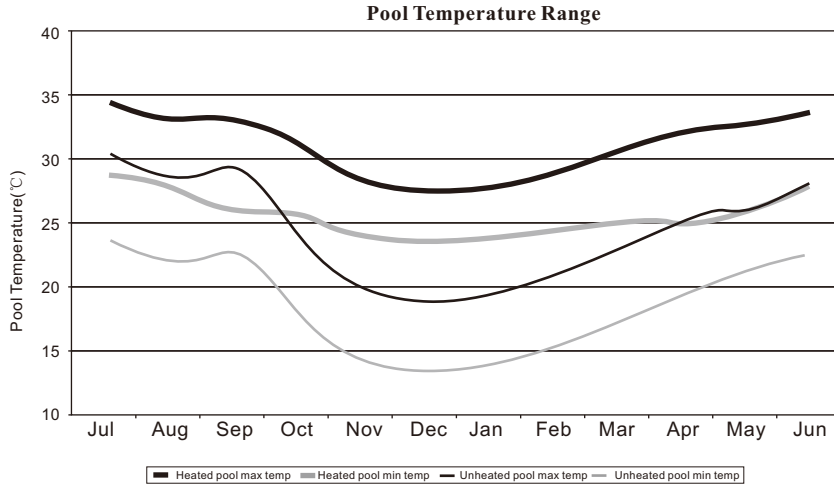
Energy flows in a heated pool

Energy flows in an unheated pool

Pool temperature

Range of pool temperature(max exceeded for 5% of the time and mini temperature exceed for 95% of the time.)

Average Pool Temperature

Pool Temperature Range

2.The charts displayed for an indoor pool are

Energy flows for indoor pool.
Pool temperature during daytime operating period.
Space temperature during daytime operating period.
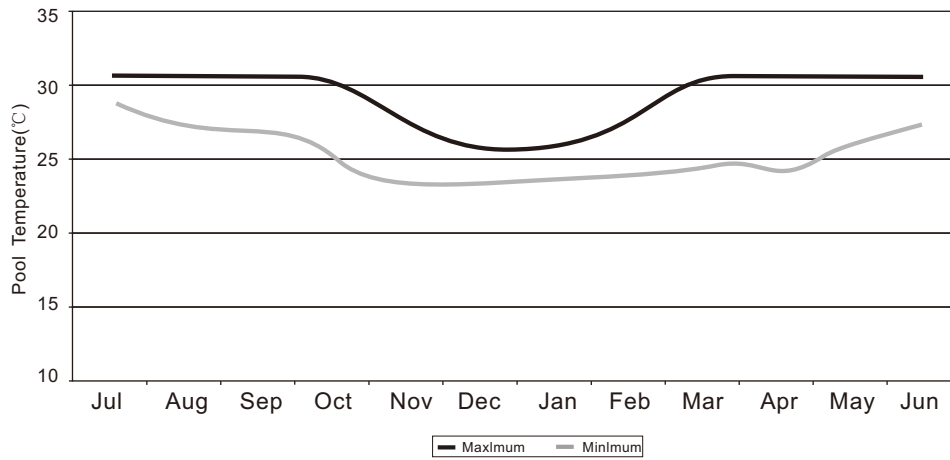**Space humidity during daytime operating period.**
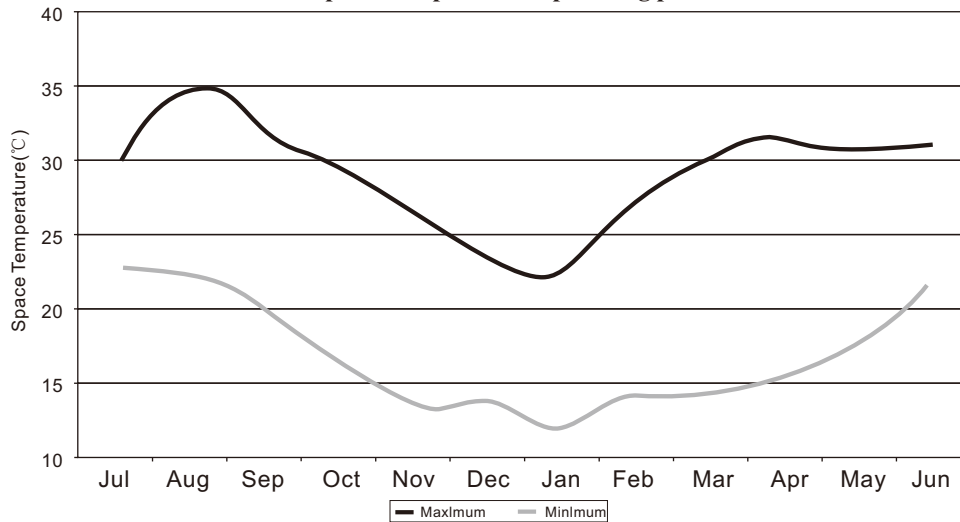**Pool temperature at night.**
Space temperature at night.
Space humidity at night.
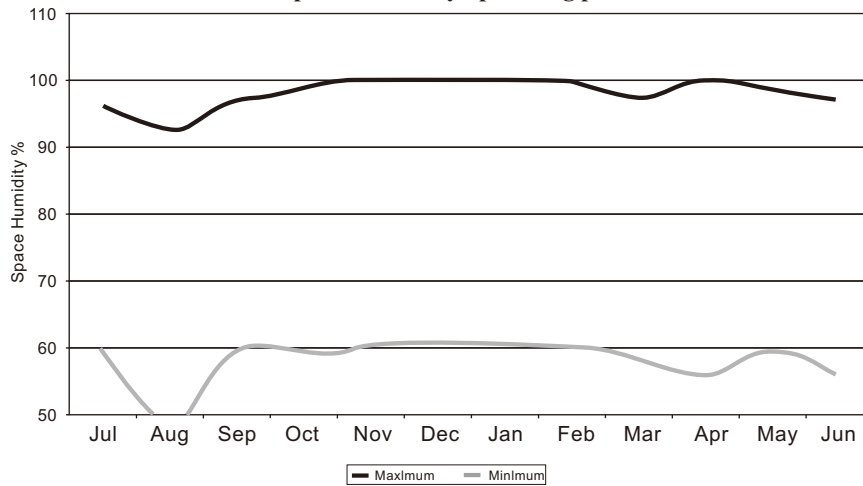**Some of the charts are.**

Pool Temperature operating period

Space Temperature operating period

Space Humidity operating period

The position of installing unit

Top 1000mm Above

Inlet

Inlet

Inlet

1000mm Above

1000mm Above

1000mm Above
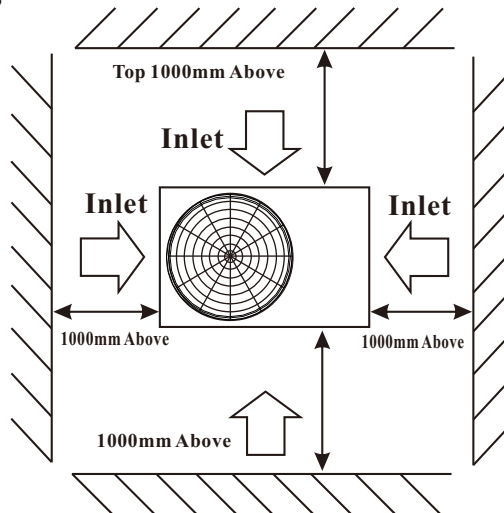
Attachment 2

The Installation about Heat Pump & Chlorinator

Pressure-type Chlorinator or Brominator

Check-valve

Chlorinator

Filter

Water Pump

P-trap

Check-valve
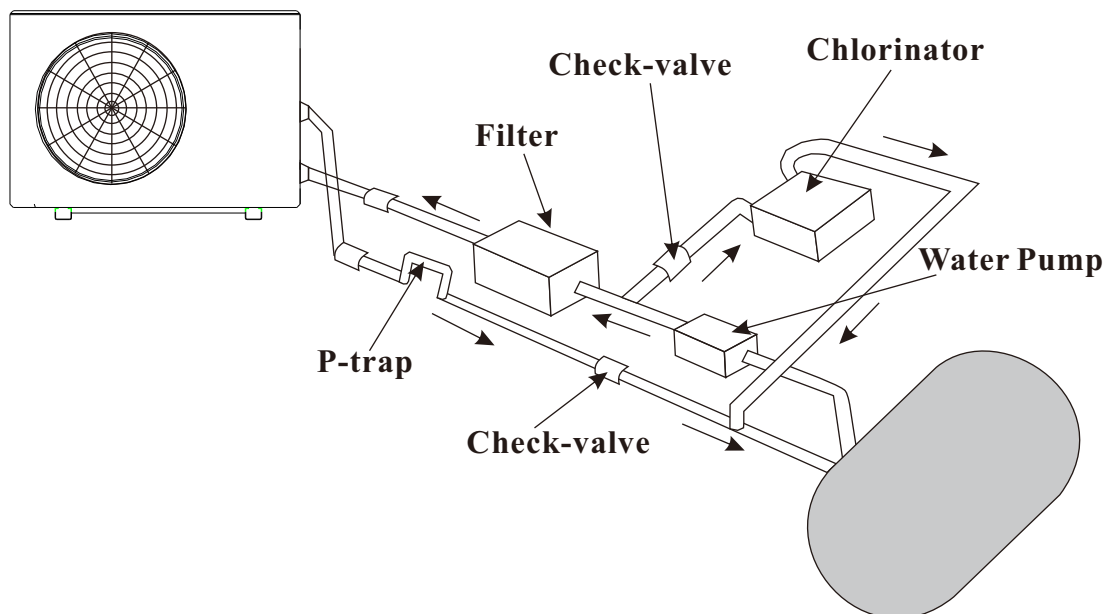
Attachment 3

Common Units Conversion

Linear Measure
1 inch=25.4 millimetres
1 foot=12 inches=0.3048 metre
1 yard=3 feet=0.9144 metre
1 (statute)mile=1760 yards=1.609 kilometres
1 nautical mile=1852 m.

Square Measure
1 square inch=6.45 sq.centimetres
1 square foot=144 sq.in.=9.29 sq.decimetres
1 square yard=9 sq.ft.=0.836 sq.metre
1 acre=4840 sq.yd.=0.405 hectare
1 square mile=640 acres=259 hectares

Cubic Measure
1 cubic inch=16.4 cu.centimetres
1 cubic foot=1728 cu.in.=0.0283 cu.metre
1 cubic yard=27 cu.ft.=0.765 cu.metre

Capacity Measure
Britich
1 pint 20 fluid oz.=34.68 cu.in.=0.568 lite
1 quart=2 pints=1.136 litres
1 gallon=4 quart=4.546 litres
1 peck=2 gallons=9.092 litres
1 bushel=4 pecks=36.4 litres
1 quarter=8 bushels=2.91 hectolitres
American dry
1 pint=33.60 cu.in.=0.550 litre
1 quart=2 pints=1.101 litres
1 peck=8 quarts=8.81 litres
1 bushel=4 pecks=35.3 litres
American liquid
1 pint=16 fluid oz.=28.88 cu.in.=0.473 litre
1 quart=2 pints=0.946 litre
1 gallon=4 quarts=3.785 litres

Avoirdupois Weight
1 grain=0.065 gram
1 dram=1.772 grams
1 ounce=16 drams=28.35 grams
1 pound=16 ounces=7000 grains=0.4536 kilogram
1 stone=14 pounds=6.35 kilograms
1 quarter= 2 stones=12.70 kilograms
1 hundredweight=4 quarters=50.80 kilograms
1 short ton=2000 pounds=0.907 tonne
1 (long)ton=20 hundredweight=1.016 tonnes

energy、power
1 usrt=3024 kcal/h=3516 w
1 kcal/h=1.163 w
1 kw=860 kcal/h
1 btu/h=0.293 w

velocity, flux
1 m/s=196.85 fpm
1 cfm=1.699 cmh
1 gpm=0.27276 cmh
1 gpm=0.2271 cmh

Pressure
1 bar=100000 pa
1 psi=0.0703 kgf/cm2
1 kgf/cm2=98000 pa
1 mm aq.=9.8 pa
1 mm hg=133.28 pa
1 m H2O=9800 pa=0.1 kgf/cm2