Technical Manual

ACSON International
Air Conditioners

PACKAGED AIR CONDITIONER ROOFTOP A SERIES

A4RT-A Series

Cooling only [50Hz]

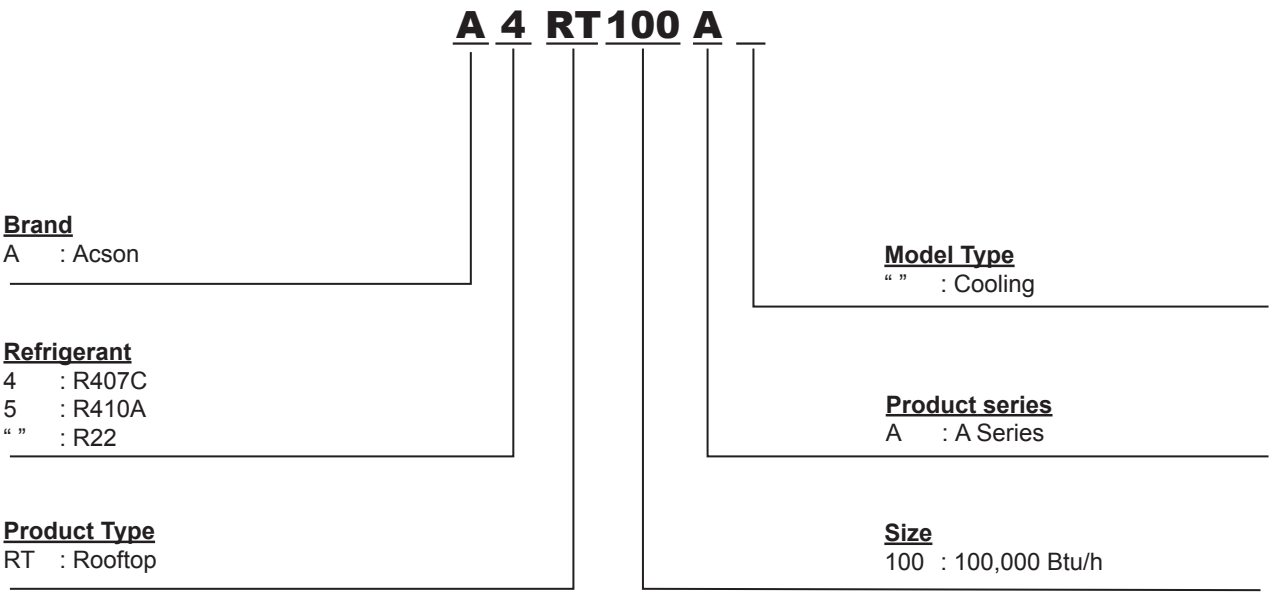
R407C

CONTENTS

PACKAGED AIR CONDITIONER
ROOFTOP A SERIES

* All specifications stated in this technical manual are for Cooling Only unit.
Please contact us for more information about Heat Pump unit.

NOMENCLATURE



PRODUCT LINE UP

A4RT

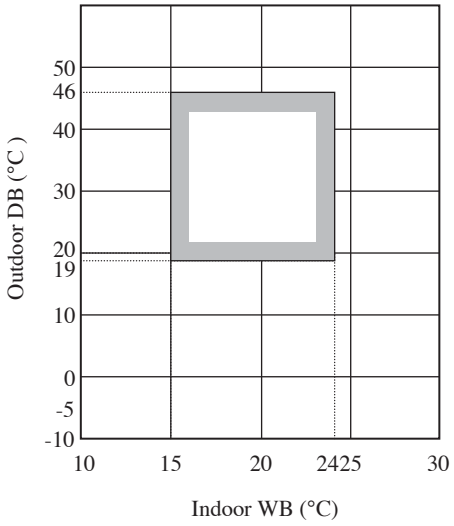
	Classification											
	SLM Controller	Seq. Controller	Capillary Tube	Thermal Expansion Valve (TXV)	Indoor Coil Fin Type		Outdoor Coil Fin Type	Scroll Compressor	Air Filter	Side Flow	Convertible	Filter Drier
					Normal Fin	Blue (Hydrophilic) Fin	Gold (NA549) Fin					
A4RT60A-FXBE	X			X		X	X	X	X	X		X
A4RT80A-FXBA	X		X			X	X	X	X	X	X	X
A4RT100A-FXBA	X		X			X	X	X	X	X	X	X
A4RT120A-FXBB	X			X		X	X	X	X	X	X	X
A4RT150A-FXBE		X	X		X		X	X	X	X	X	X
A4RT200A-FXBE		X	X		X		X	X	X	X	X	X
A4RT250A-FXAA		X		X		X	X	X	X	X		X
A4RT300A-FXBA		X		X		X	X	X	X	X		X
A4RT360A-FXBC		X		X			X	X	X	X		X
A4RT420A-FXAC		X		X			X	X	X	X		X

APPLICATION INFORMATION

OPERATING RANGE

Ensure the operating temperature is in allowance range.

Cooling



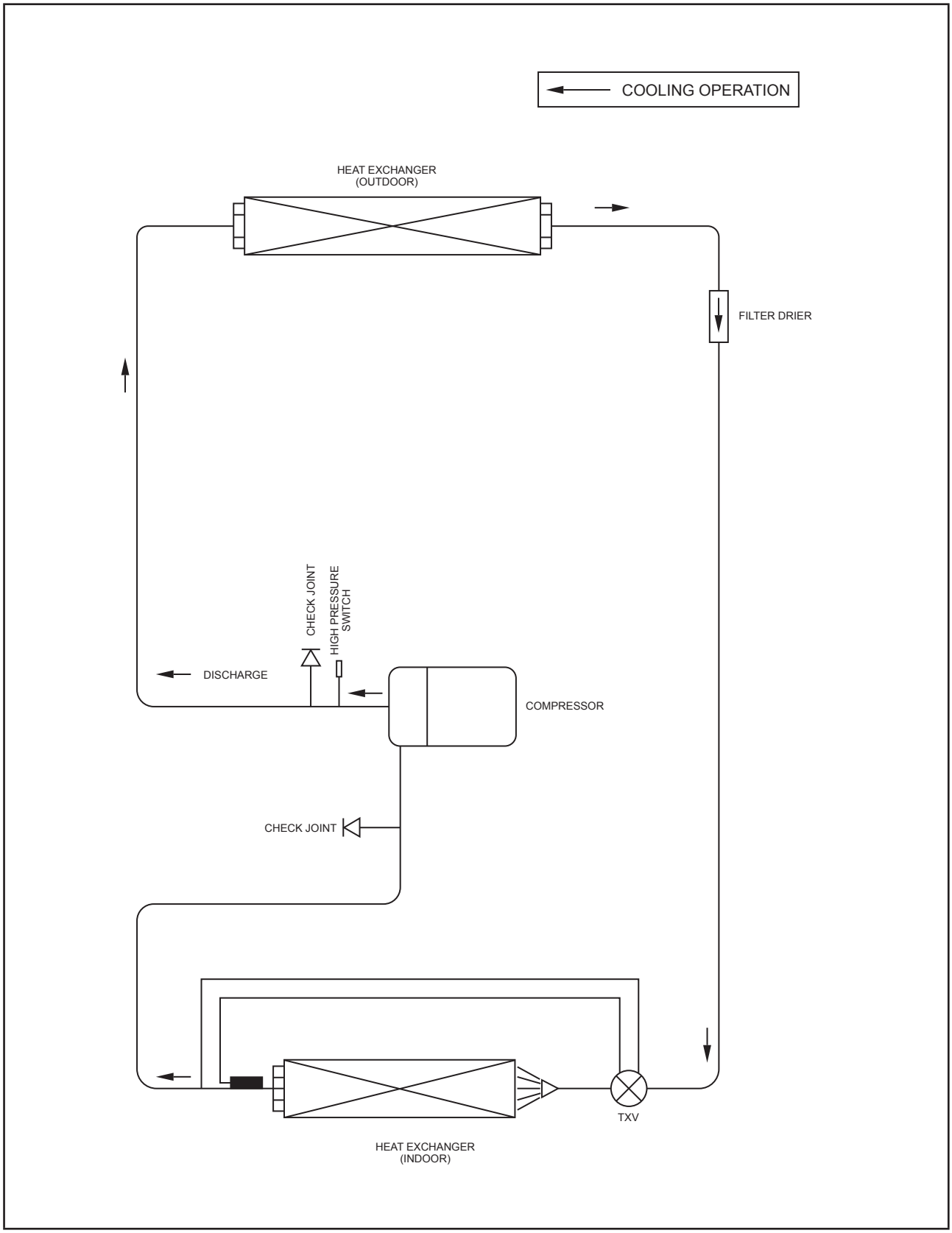
Note:
- WB = Wet Bulb
- DB = Dry Bulb

⚠ Caution :

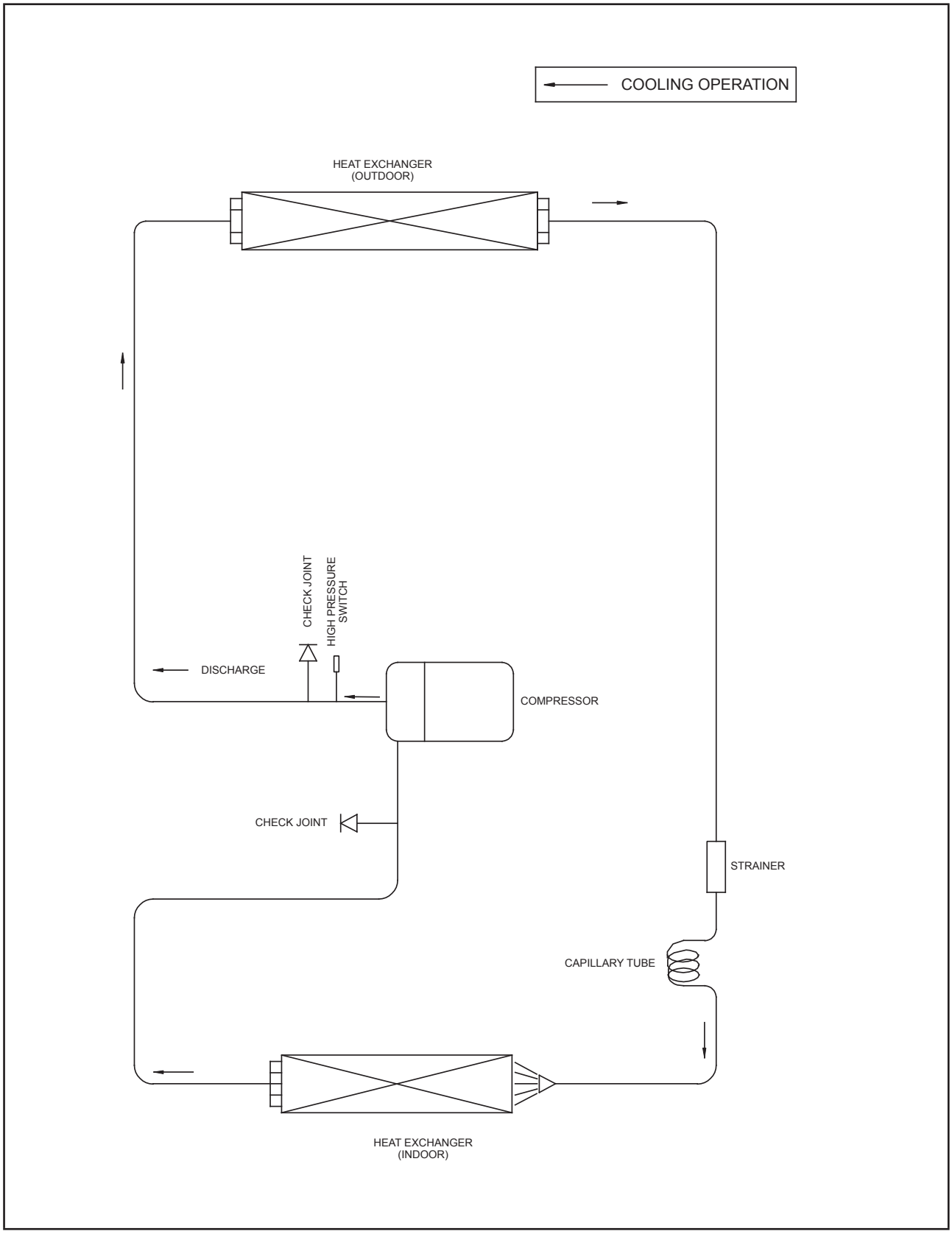
The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

REFRIGERANT CIRCUIT DIAGRAMS

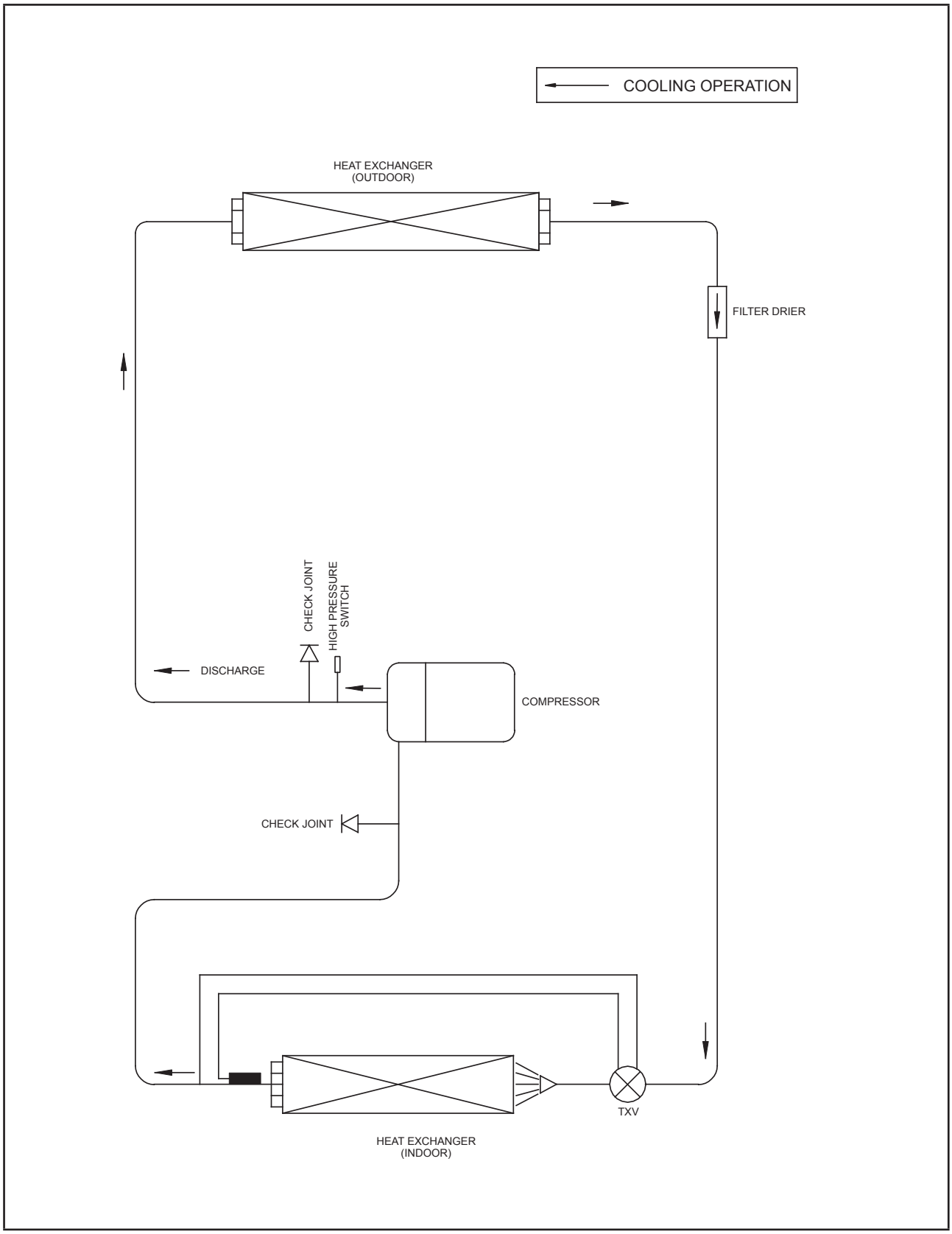
MODEL: A4RT60A



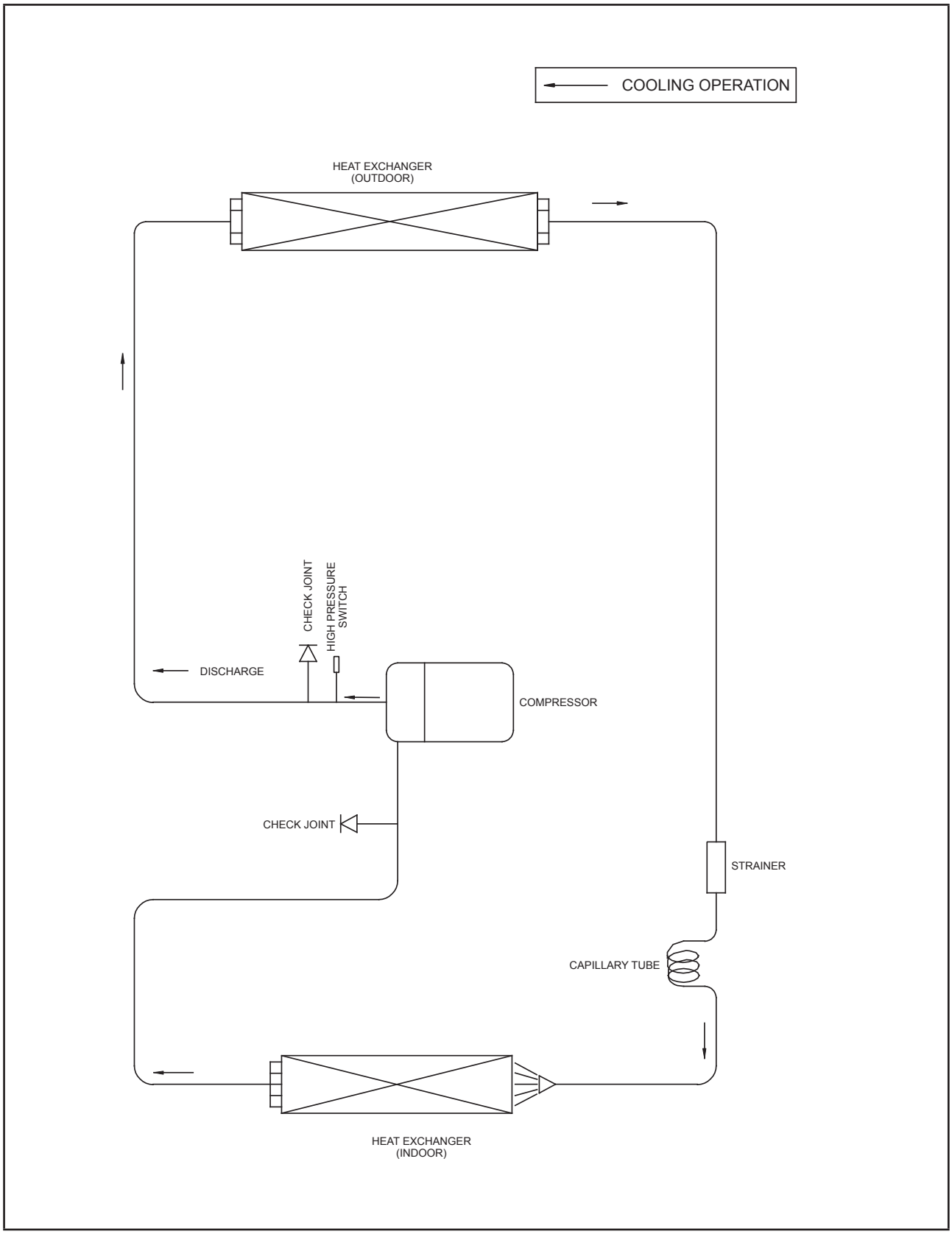
MODEL: A4RT80/100A



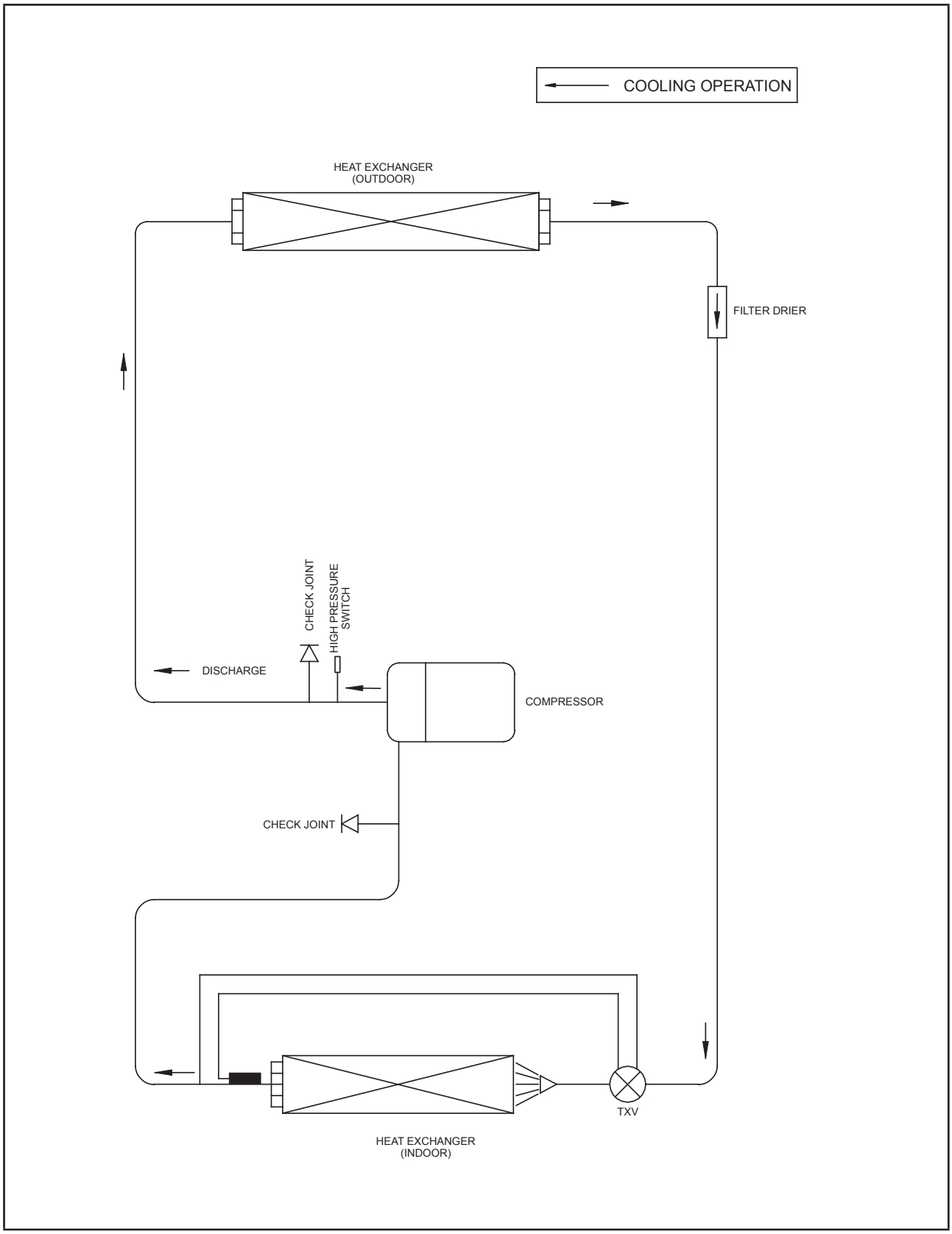
MODEL: A4RT120A



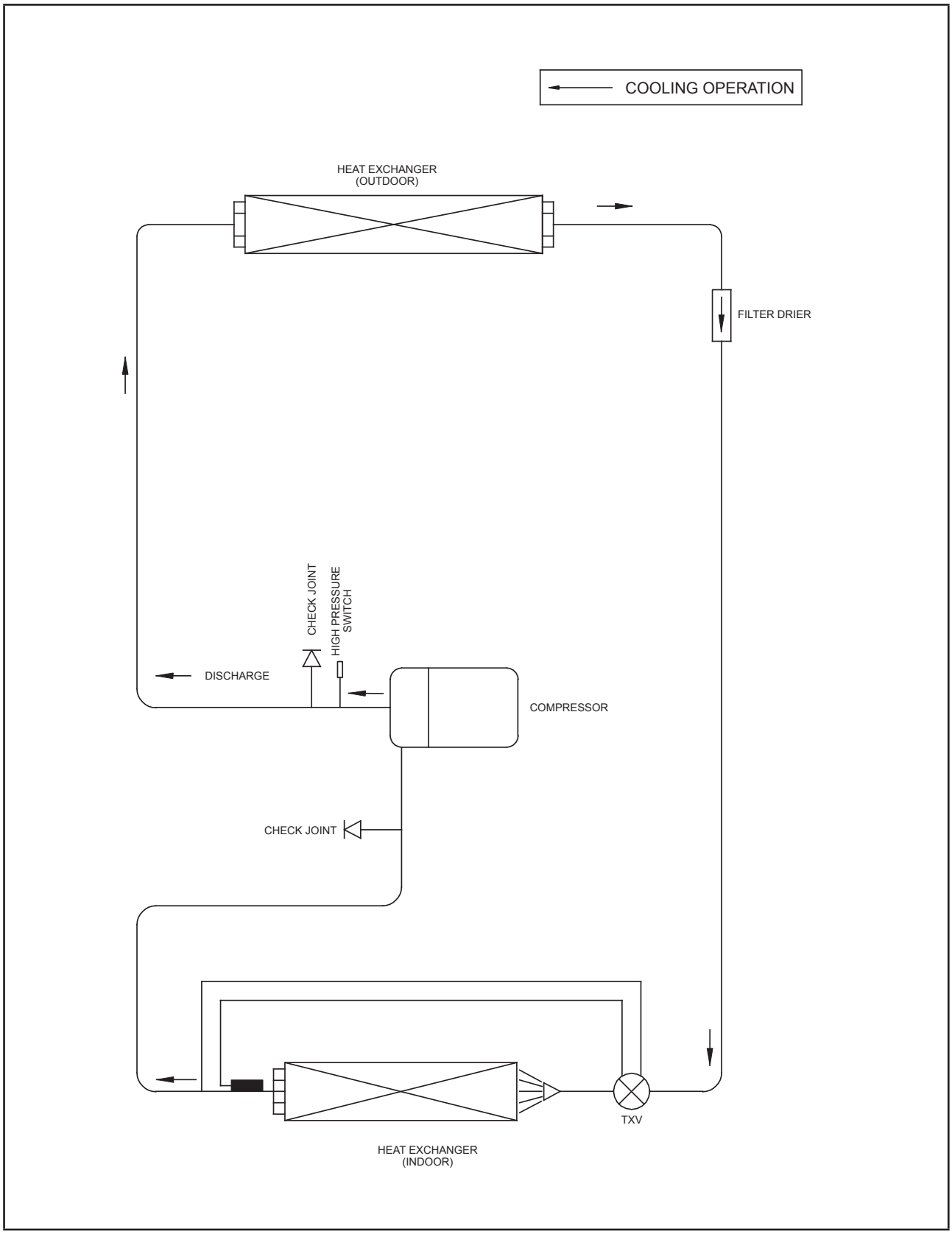
MODEL: A4RT150/200A



MODEL: A4RT250/300A

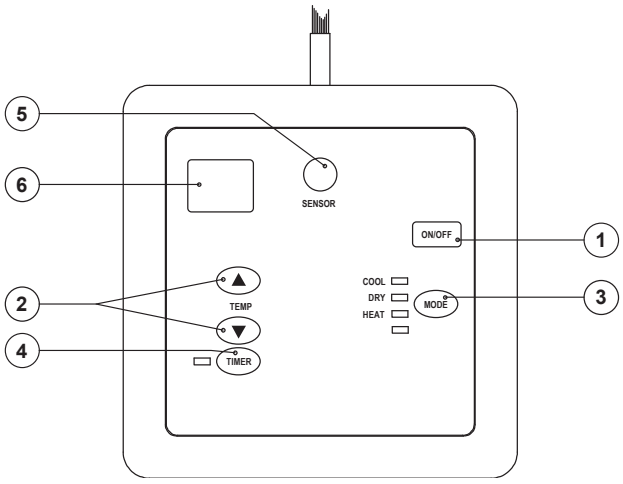


MODEL: A4RT360/420A



CONTROLLERS

SLM Wired Controller (Model: A4RT60/80/100/120A)



SLM

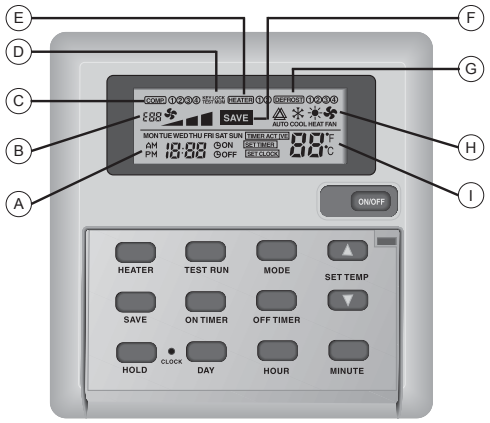
1. **"ON/OFF" Switch**
   - Press to start the air conditioner unit.
   - Press again to stop the unit.
2. **Temperature Setting**
   - Set the desired room temperature.
   - Press button to increase or decrease the set temperature. Setting range are between16ºC to 30ºC (60ºF to 80ºF).
3. **Operation Modes**
   - Press the "mode" button for select the type of operating mode.
   - Cooling Only : COOL, DRY, FAN
   - COOL LED light on)
4. **Timer**
   - Press the set button to select the switch timer of the air conditioner unit (the setting range is between 1 to 15 hours).
5. **Sensor**
   - Infra red sensor to receive signals from wireless controller.
6. **LED Display**
   - To display the set temperature (in ºC) and timer delay setting (in hours).
7. **Transmission Source**
   - To transmit signals to the air conditioner.

Error	Seven Segments
Room Sensor missing/Short	E1 blinking
Indoor coil sensor missing/Short	E2 blinking
Outdoor coil sensor missing/Short	E3 blinking
Compressor overload	E4 blinking
Outdoor abnormal compressor overload trip or gas leak	E5 blinking

Sequential Controller (Model: A4RT150/200/250/300/360/420A)

Sequential Controller Functions

1) Sequential Controller LCD Display



A : Time display
B : Error indication
C : Compressor running display (up to 4 compressors)
D : Key lock display
E : Heater display (up to 2 heaters)
F : Energy saving mode display
G : Compressor defrost cycle display (up to 4 compressors)
H : Operation mode display
I : Temperature set display

2) Operating Guide

a) ON/OFF Key

Press once to start the air conditioning unit.
Press again to stop the unit.
The operation lamp next to the key lights up and goes off respectively when the unit is running or not running.
Caution : In the case when the ON/OFF key is pressed immediately after the operation is stopped, the unit will not restart until 3 minutes later to protect the compressor.

b) Selecting Operation Mode

Press the MODE key to select the type of operating mode. Consecutive press of the key switches the operation over “COOL” and “FAN”

c) Save Mode

Press the SAVE key to select the energy saving function. This option is only available for “COOL”, “HEAT” and “AUTO” modes.

d) Auxiliary Electric Heater

If the “HEAT” mode provides insufficient heating to a room even at the highest temperature setting (30ºC), press the HEATER key to activate the auxiliary electric heater. For models with two heaters, consecutive press of the key allows the selection of one or both heaters active.

e) Temperature Setting

To set the desired room temperature, press (▲) or (▼) to increase or decrease the set temperature in the range of 16ºC to 30ºC. Press both (▲) and (▼) simultaneously to toggle between ºC and ºF setting.

f) Time Setting

Real time Clock
Press the CLOCK key once to activate set clock mode.
Press again to disable set clock mode.
Under set clock mode, the time of the present day can be set by pressing the respective MINUTE, HOUR and DAY key.

7-days timer

Press the **ON TIMER** key to activate auto-ON timer mode. Under this mode, press the respective **MINUTE, HOUR** and **DAY** key to select the time of the week when the air-conditioning unit is to automatically start running. Press the **ON TIMER** key again to save the setting.

Press the **OFF TIMER** key to activate auto-OFF timer mode. Under this mode, press the respective **MINUTE, HOUR** and **DAY** key to select the time of the week when the air-conditioning unit is to automatically stop running. Press the **ON TIMER** key again to save the setting.

Then to activate the 7-days timer, press and hold the **TIMER ACTIVE** key until the word "TIMER ACTIVE" appears on the LCD screen. Repeat the same step to disable the 7-days timer.

g) Other Function

Key Lock

Press the **MINUTE** key 3 times consecutively and fast to activate the key lock. A "KEY LOCK" symbol will appear on the LCD screen. At this point, only the ON/OFF key is valid.
To disable the key lock, again press the **MINUTE** key 3 times consecutively and fast.

Test run

Press the TEST key 2 times consecutively to test run the unit.

3) Error Code

When the system is on and an error occurs, the **ON/OFF** LED on the LCD panel will blink and an error code is shown. When the system is off and there is a thermistor error, the **ON/OFF** LED is off but the error code is still displayed. Each error code represents different message as below

Error code	Possible fault	Error code	Possible fault
E01	Require manual reset (possible causes)		
E02	Compressor 1 high temperature (overload)	E20	Indoor coil sensor 1 open
E03	Compressor 2 high temperature(overload)	E21	Indoor coil sensor 2 open
E06	Compressor 1 high pressure trip / contact open	E24	Outdoor coil sensor 1 short
E07	Compressor 2 high pressure trip / contact open	E25	Outdoor coil sensor 2 short
E10	Compressor 1 trip / low R-22 / outdoor abnormal	E28	Outdoor coil sensor 1 open
E11	Compressor 2 trip / low R-22 / outdoor abnormal	E29	Outdoor coil sensor 2 open
E14	Room sensor short	E32	Compressor 1 de-ice
E15	Room sensor open	E33	Compressor 2 de-ice
E16	Indoor coil sensor 1 short		
E17	Indoor coil sensor 2 short		

4) Installation Of LCD Remote Controller

a) Accessories

The following accessories are included. If any part is missing, contact your dealer immediately.

1 Remote controller
2 Wooden screw 4.1 x 16 (2 pieces)
3 Instruction manual

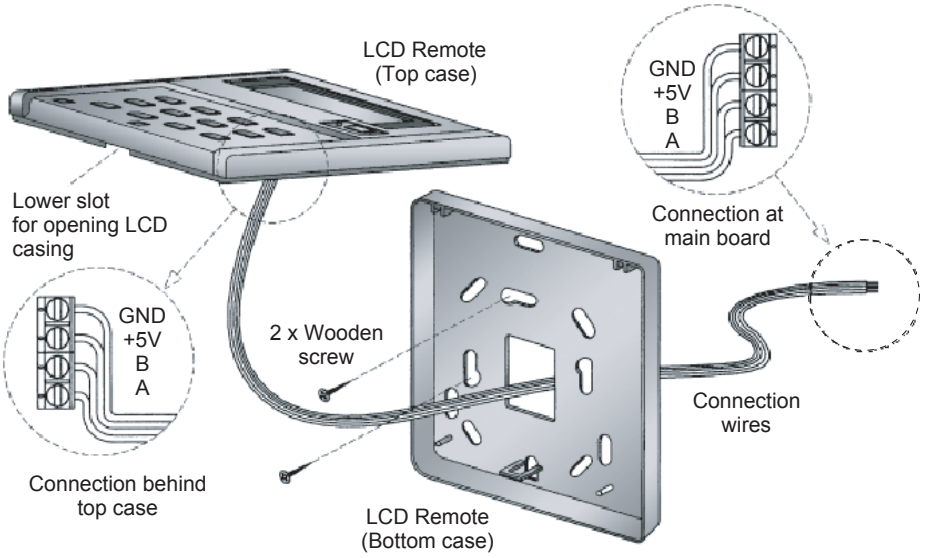
b) Step-by-step guide

i) First, open up the casing of the LCD remote controller into its top and bottom case using a screwdriver. To do this, insert the screwdriver into the lower slot and slide it in the outward direction.

ii) Fix the bottom case onto the wall with the 2 wooden screws provided. Then, insert the 4 connecting wires (from the main board) through the slot on the lower right.

iii) Connect one end in each of the 4 wires to the terminal block behind the top case as shown below. The wire that goes into the “GND” terminal at the top case must be connected at the other end to the “GND” terminal at the main board. The same goes for the “+5V”, “B” and “A” connection.

iv) Fasten back the top and bottom case into place. Hook the two upper claws into their respective slots and snap the lower part shut.



5) Auto Random Restart

When power is resumed, the unit will automatically restart and operate at the previous setting as before power failure occurred. (Remove jumper at JH/JP1 to cancel the auto random restart function. Please refer to wiring diagram for the location of JH/JP1 Jumper).

PRECAUTION & INSTALLATION

Safety Precautions

Before installing the air conditioner unit, please read the following safety precautions carefully.

⚠ WARNING

- Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.
- All field wiring must be installed in accordance with the national wiring regulation.
- Ensure that the rated voltage of the unit corresponds to that of the name plate before commencing wiring work.
- According to the wiring diagram.
- The unit must be GROUNDED to prevent possible hazard due to insulation failure.
- All electrical wiring must not touch the refrigerant piping, compressor and any moving parts of the fan motors.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
  Before installing the air conditioner unit, please read the following safety precautions carefully.

⚠ CAUTION

Please take note of the following important points when installing

- **Do not install the unit where leakage of fl**

  If gas leaks and accumulates around the unit, it may cause fire ignition.

- **Confirm drainage piping is connected properly**

  If the drainage piping is not connected perfectly, it may cause water leakage which will dampen the furniture.

- **Do not overcharge the unit**

  This unit is factory pre-charged. Over charge will cause over current or damage to the compressor.

- **Ensure that the unit panel is closed after service or installation.**

  Unsecured panel will cause unit to operate noisily.

Installation

All series of air conditioners are designed for outdoor installations and are to be placed on a slab or rooftop. However, if the air conditioner is to be installed in a plant room, please contact your equipment supplier prior to installation for further advise.

Access to the compressors, control wiring, and fans for service and installation purpose must be provided. Please see item 1: Space Required Around Units for recommendations.

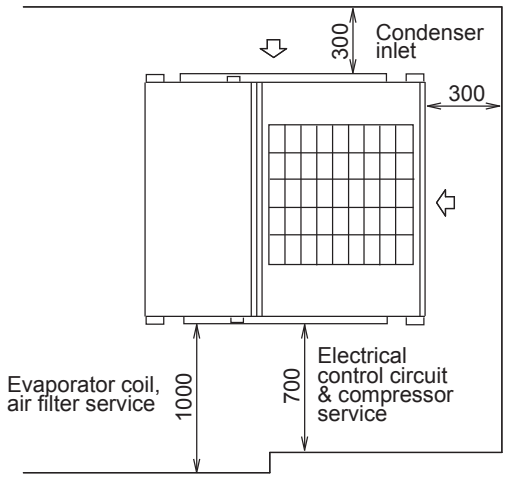
1. Space Required Around Units.

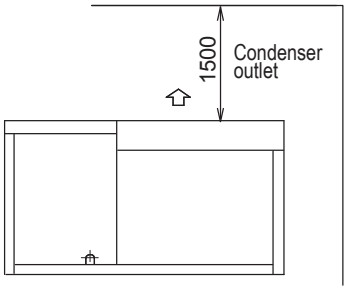
(1) Care must be taken to prevent recirculation of air. To stabilize compressor and condensing pressure, it is recommended that wherever possible the condenser air inlet side should be faced away from prevailing winds. Please see diagrams below.

(2) For rooftop installation, the type of mounting base depends on the construction of the roof. A built-up roof may not support the weight of the unit. Hence, it may be necessary to support the unit by adding structural members below it.

(3) The units are equipped with hoisting hangers for rigging and hoisting of the unit. Please see item 3: Lifting method for further information.
The hoisting plates are located on the top of the unit. When hoisting the unit with a crane, spreader bars must be used to prevent damage to side panels by the supporting cables.

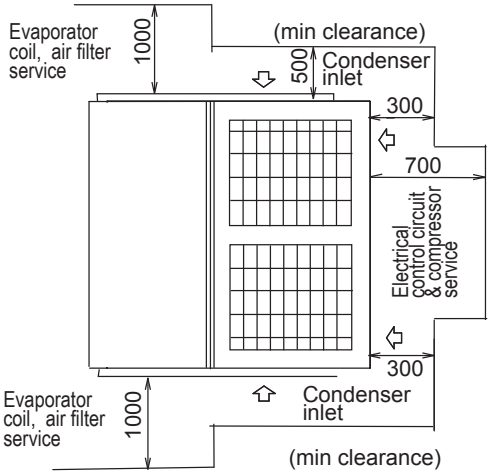
A4RT60/80/100/120A

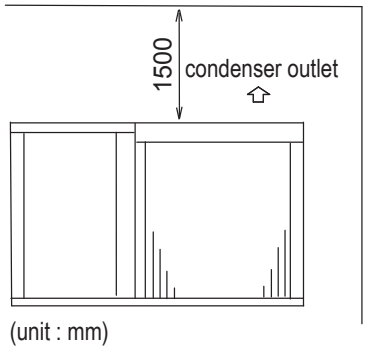




(unit : mm)

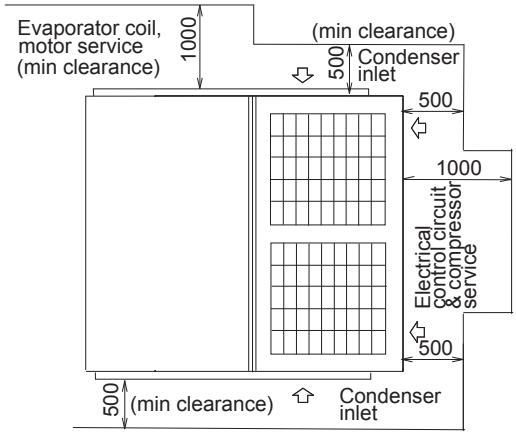
A4RT150/200A

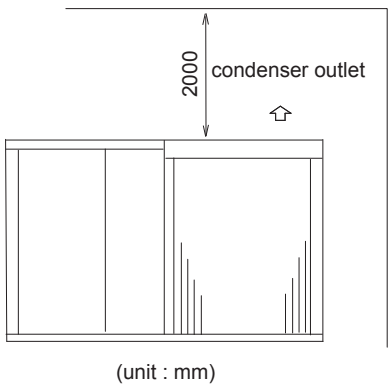




(unit : mm)

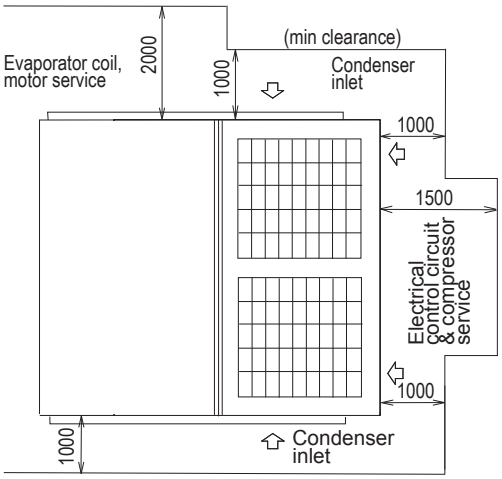
A4RT250/300A

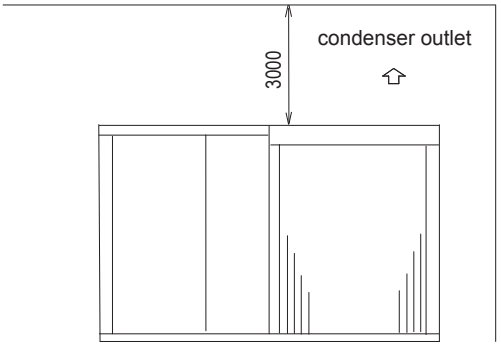




(unit : mm)

A4RT360/420A





(unit : mm)

2. Duct Construction.

(1) Series MRT side flow units are equipped with horizontal supply and return air openings. Duct connection to the unit should be made with duct flanges and secured directly to the air openings with flexible duct connectors to avoid normal noise transmission.
(2) For vertical air supply, a field supply plenum should be used. The figure shows the recommended method for duct connection.
(3) To prevent air leakage, all duct seams should be taped. Duct runs in air spaces that are not air-conditioned must be insulated and provided with a vapor barrier. Ducts exposed outdoors must be weather proofed. For quiet operation, we recommend that the insulation on the supply duct be placed inside, lining the duct.
(4) Where ducts from outdoors enter a building, the duct openings in the building should be sealed with weather stripping to prevent rain, dirt, sand, etc. from entering the building.
(5) Correctly sized filters must be fitted. There is no provision within the unit for the placement of filter. However, the filters may be installed in the return air chamber.
(6) Duct earth wiring must be connected. Please refer to the section “Outlines and dimensions” for the correct position.

Optional Feature (Down Flow)*

Series MRT down flow units are equipped with vertical supply and return air openings. Duct connection to the unit should be made with duct flanges to avoid normal noise transmission. When connecting duct earth wiring for down flow configuration, we must use accessory screw attached on the control box cover.
* Site modification required. Please refer to item 6:
OPTIONAL FEATURES for details.

3. Lifting Method.

When the unit is to be lifted and moved, attach ropes to the hoisting hangers (4 pieces) provided on the top corners of the unit. When the unit is lifted, its center of gravity tends to shift the unit to one side. Imbalance such as that in the figure should be attained. The angles at which the ropes suspend the unit should be at least 60º at the compressor end and at least 45º at the condenser end. Care should be taken to avoid contact with the unit while it is being lifted.

4. Drain Piping.

(1) The condensate drain fitting (R1) is provided. The drain pipe can be led out at the right or left side. Please see Chapter 10: Outlines & Dimensions for further details.
(2) The drain pipe must be provided with a trap on the outside of the unit and also installed at an incline for proper drainage, as shown below.
(3) To prevent condensate formation and leakage, provide the drain pipe with insulation to safeguard against sweating.
(4) Upon completion of the piping work, check that there is no leakageand that the water drains off properly.

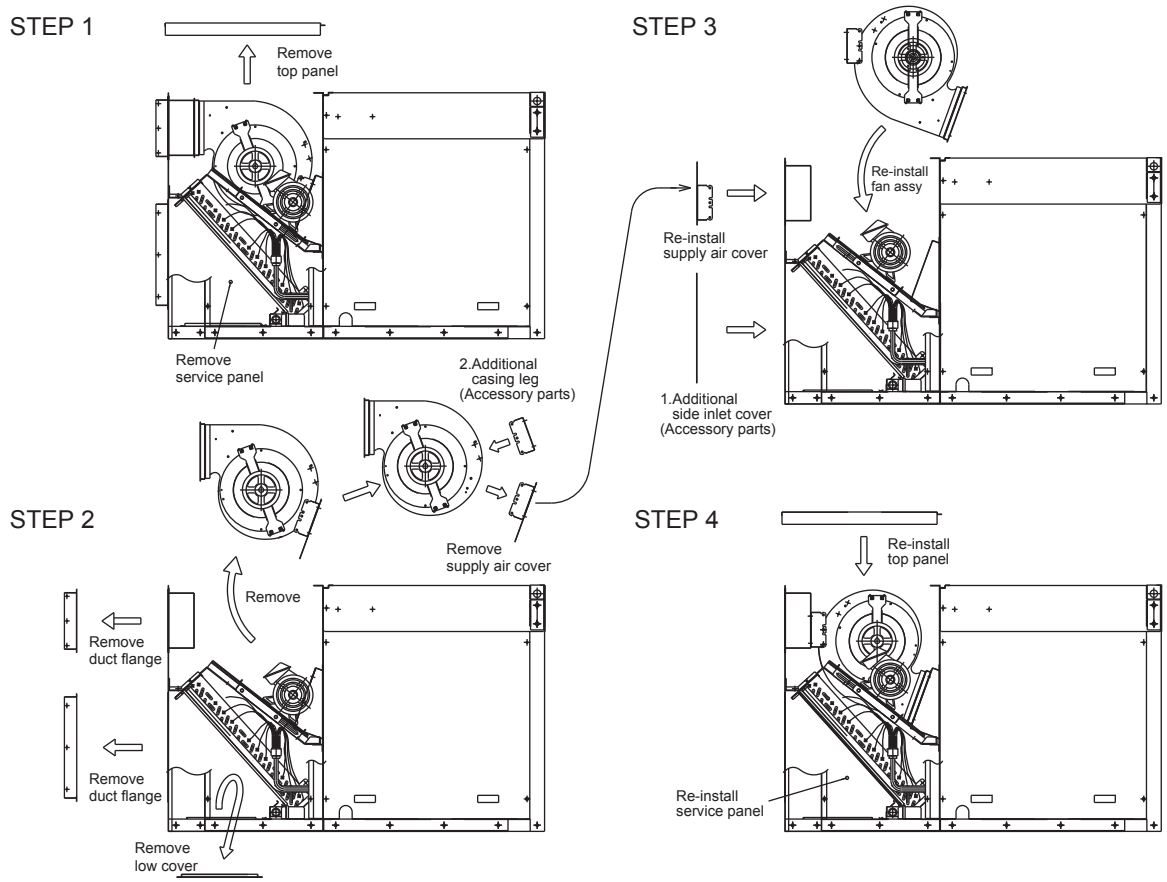
5. Refrigerant Charge

An additional charge is unnecessary.
The table below shows the amount of the charge when the unit is shipped from the factory.

Model	A4RT60A	A4RT80A	A4RT100A	A4RT120A	A4RT150A
Refrigerant charge per circuit (kg)	4.6	4.6	5.9	5.6	2 x 3.9
	A4RT200A	A4RT250A	A4RT300A	A4RT360A	A4RT420A
Refrigerant charge per circuit (kg)	2 x 4.2	2 x 9.6	2 x 10.4	14.5 , 18.0	2 x 18.0

6. Optional Features (Down Flow) - Site Modification Required.
Reconstruction Method. (From Side Flow To Down Flow)
(For A4RT80/100/120/150/200A Only)

Series A4RT side flow units are able to be modified to down flow in the field with the help of additional accessory items.
The following diagrams show the necessary steps to reconstruct the unit from side flow to down flow.



7. Special Precautions When Dealing With Refrigerant R407C Unit

(1) What Is New Refrigerant R407C?

R407C is a zeotropic refrigerant mixture which has Zero Ozone Depletion Potential (ODP = 0) and thus, conforms to the Montreal Protocol regulation. It requires Polyol-ester (POE) oil for its compressor's lubricant. Its refrigerant capacity and performance are about the same as the refrigerant R22.

(2) Components

Mixture of composition by weight: R32(23%), R125(25%), R134a(52%)

(3) Characteristic

- R407C liquid and vapor components have different compositions when the fluid evaporates or condenses. Hence, when a leak occurs and only vapor leaks out, the composition of the refrigerant mixture left in the system will change and subsequently affect the system performance. DO NOT add new refrigerant to a leaked system. It is recommended that the system should be evacuated thoroughly before recharging with R407C.
- When refrigerant R407C is used, the composition will differ depending on whether it is in gaseous or liquid phase. Hence when charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to make certain that only original composition of R407C is being charged into the system.
- POE oil is used as a lubricant for R407C compressor, which is different from the mineral oil used for R22 compressor. Extra precaution must be taken to avoid exposing the R407C system to moist air.

(4) Check List Before Installation/servicing

- Tubing
  Refrigerant R407C is more easily affected by dust of moisture compared with R22, make sure to temporarily cover the ends of the tubing prior to installation
- Compressor oil
  No additional charge of compressor oil is permitted.
- Refrigerant
  No other refrigerant other that R407C
- Tools
  Tools specifically for R407C only (must not be used for R22 or other refrigerant)
  i) Gauge manifold and charging hose
  ii) Gas leak detector
  iii) Refrigerant cylinder/charging cylinder
  iv) Vacuum pump c/w adapter
  v) Flare tools
  vi) Refrigerant recovery machine

(5) Handling And Installation Guidelines

Like R22 systems, the handling and installation of R407C systems are closely similar. All precautionary measures; such as ensuring no moisture, no dirt or chips in the system, clean brazing using nitrogen, and thorough leak check and vacuuming are equally important requirements. However, due to the zeotropic nature of R407C and its hydroscopic POE oil, additional precautions must be taken to ensure optimum and trouble-free system operation.

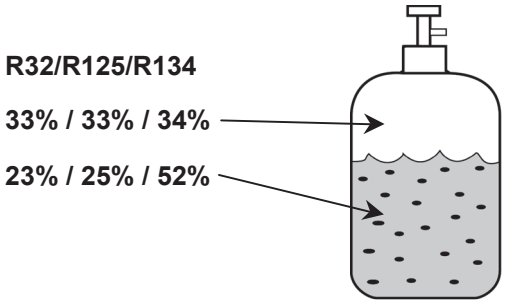
(a) Filter-dryer must be installed along the liquid line for all R407C air conditioners. This is to minimise the contamination of moisture and dirt in the refrigerant system. Filter-dryer must be of molecular sieve type. For a heat-pump system, install a two-way flow filter dryer along the liquid line.

(b) During installation or servicing, avoid prolong exposure of the internal part of the refrigerant system to moist air. Residual POE oil in the piping and components can absorb moisture from the air.

(c) Ensure that the compressor is not exposed to open air for more than the recommended time specified by its manufacturer (typically less than 10 minutes). Remove the seal-plugs only when the compressor is about to be brazed.

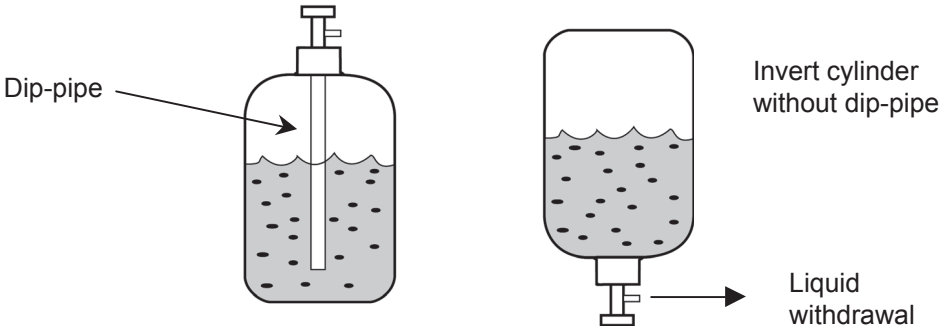
(d) The system should be thoroughly vacuumed to 1.0 Pa (-700mmHg) or lower. This vacuuming level is more stringent than R22 system so as to ensure no incompressible gas and moisture in the system.

(e) When charging R407C, ensure that only liquid is being withdrawn from the cylinder or can. This is to ensure that only the original composition of R407C is being delivered into the system. The liquid composition can be different from the vapor composition.



Composition of R407C in vapour phase
is different from liquid phase.

(f) Normally, the R407C cylinder or can is being equipped with a dip-pipe for liquid withdrawal. However, if the dip -pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.



(g) When servicing leaks, the top-up method, commonly practiced for R22 system, is not recommended for R407C systems. Unlike R22 where the refrigerant is of a single component, the composition of R407C (which is made-up of three different components) may have changed during the leak. Consequently, atop-up may not ensure that the R407C in the system is of the original composition. This composition shift may adversely affect the system performance. It is recommended that the system be evacuated thoroughly before recharging with R407C.

8. Electric Wiring

Construct The Earth Connection.

All electrical work must be carried out by a suitable quali ed electrical trades-person and in accordance with local supply authority requirements and associated regulators.

The unit is to be wired directly from an electrical distribution board either by a circuit breaker (preferred) or HRC fuse.

Fix power source wiring to control box by using buffer bushing for sensible force (PG connection or the like). Connect control wiring to control terminal block through the knockout hole of control box using ordinary bushing.

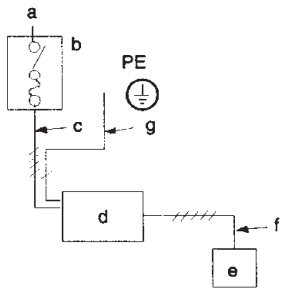
NOTE : Earth wiring must be connected.

Arrangement such as terminal block in control box.

Method For Connecting Electric Wire

Please carry out the wiring after consulting with local electric power company on local regulations.

(I) The entire wiring diagram of unit.



a.	Power supply
b.	Main switch/fuse (eld supply)
c.	Power supply wiring for unit
d.	Unit
e.	Remote controller
f.	Connection wiring for unit / remote controller (no polarity)
g.	Earth

(II) Electrical wiring

Remove the panel on the right side A4RT060~120A or the rear side A4RT150~420A of the unit and connect the units power supply wiring to the proper terminals in the control box.
Connect the wires by following the wiring diagram. Mis-connection will damage the controller.

(III) Wiring example and selection of earth leakage breaker

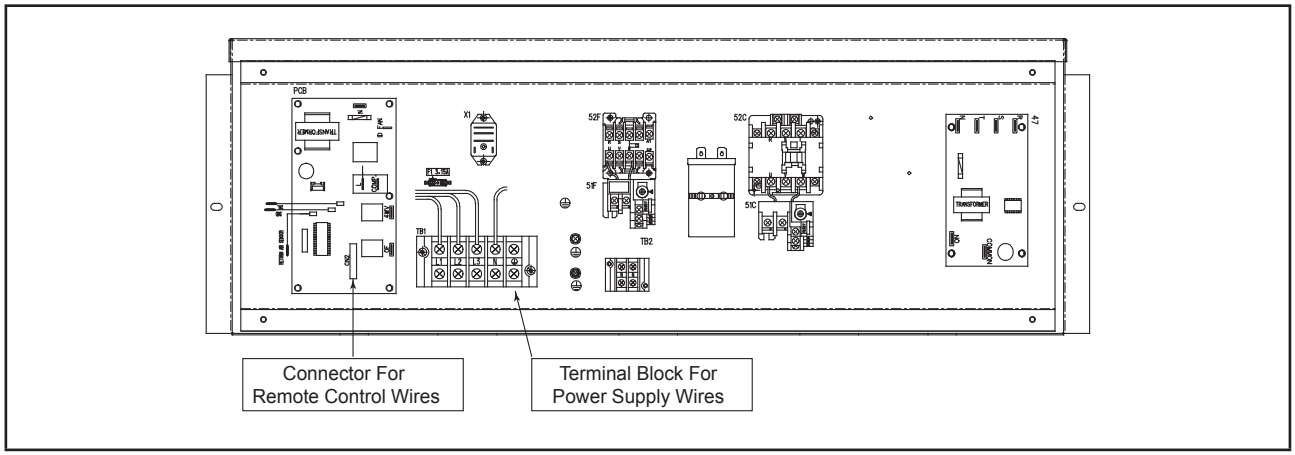
380~415V, 50Hz, 3Ø

Model	Power cable	Breaker capacity	Over current protection switch	Earth cable
A4RT60A	8 mm^2	40A	40A	8 mm^2 over
A4RT80A	14 mm^2	50A	50A	14 mm^2 over
A4RT100A	14 mm^2	50A	50A	14 mm^2 over
A4RT120A	14 mm^2	50A	50A	14 mm^2 over
A4RT150A	22 mm^2	100A	100A	22 mm^2 over
A4RT200A	22 mm^2	100A	100A	22 mm^2 over
A4RT250A	38 mm^2	125A	125A	38 mm^2 over
A4RT300A	38 mm^2	125A	125A	38 mm^2 over
A4RT360A	38 mm^2	125A	125A	22 mm^2 over
A4RT420A	38 mm^2	125A	125A	22 mm^2 over

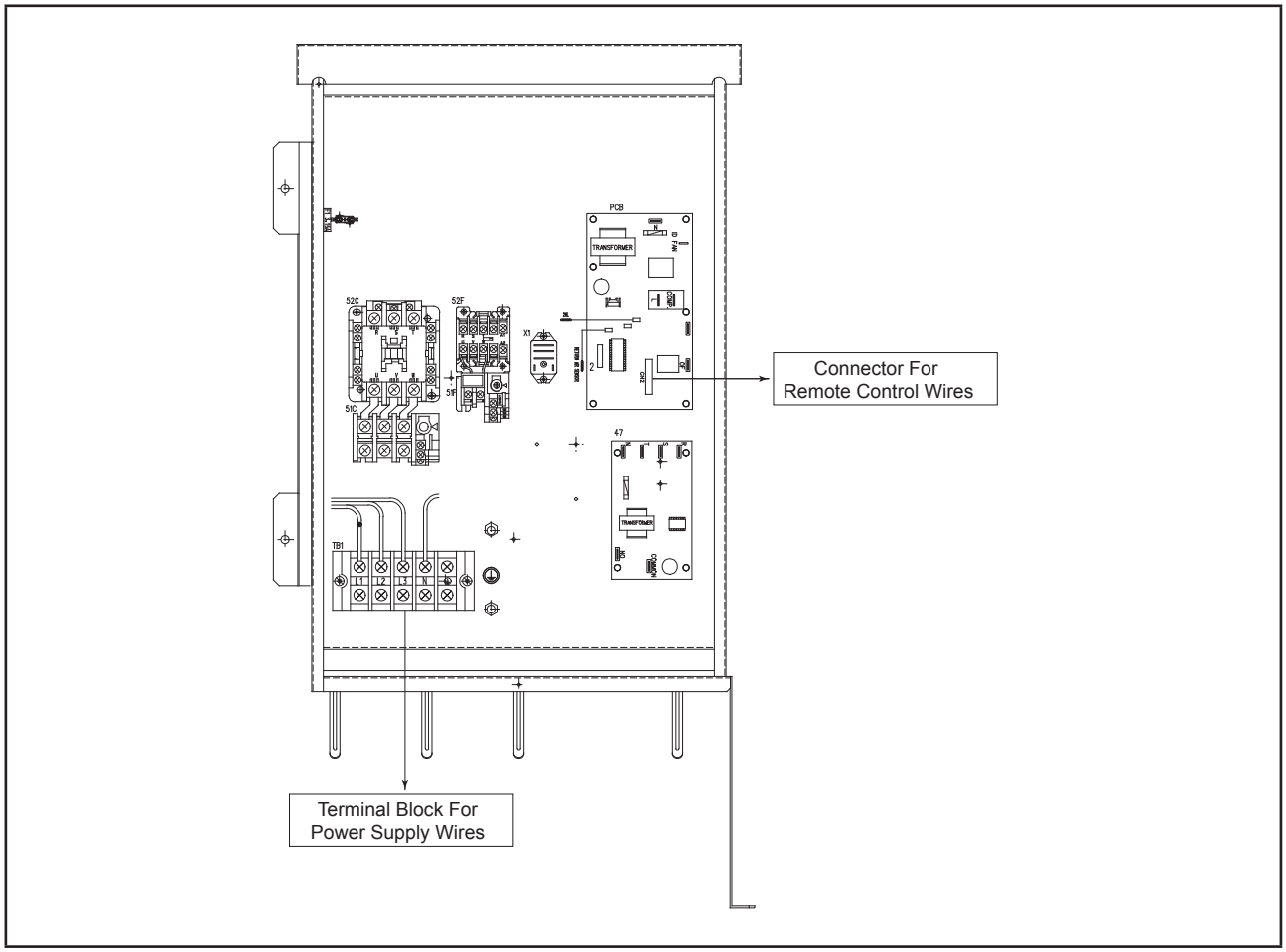
The grounding wire must be of the same diameter as the power cable wires. The table above is an example.
The selection of other capacities should be determined in accordance with the relevant local standards, in the country of installation.

Note:
All electrical wiring must comply with local electrical authority regulations.

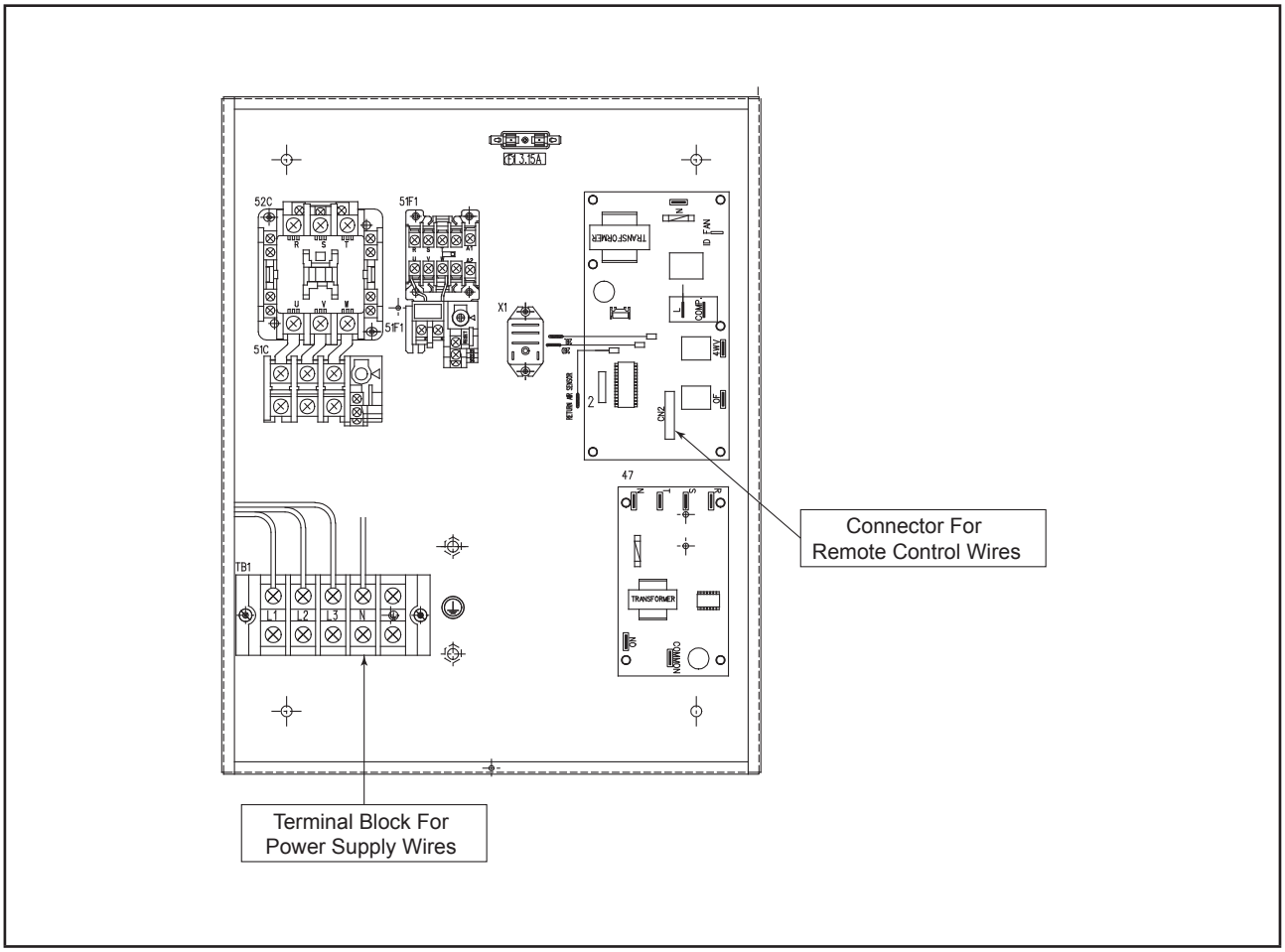
Control Module Of Unit A4RT60A



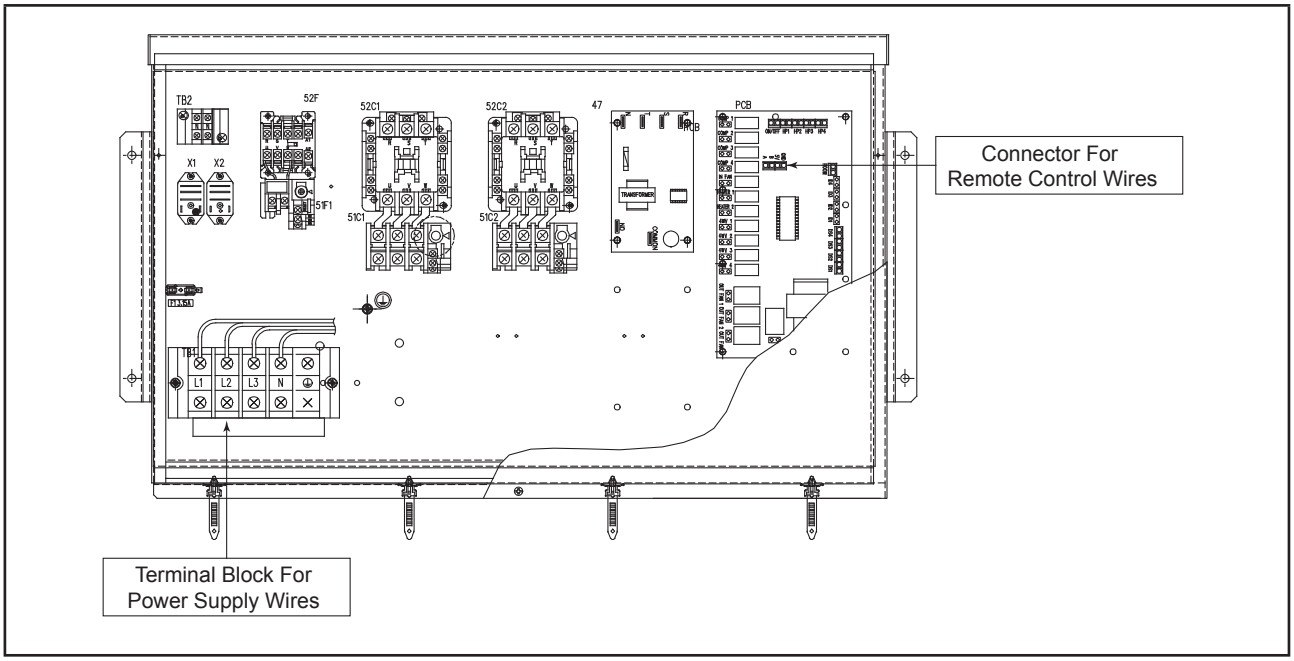
Control Module Of Unit A4RT80/100A



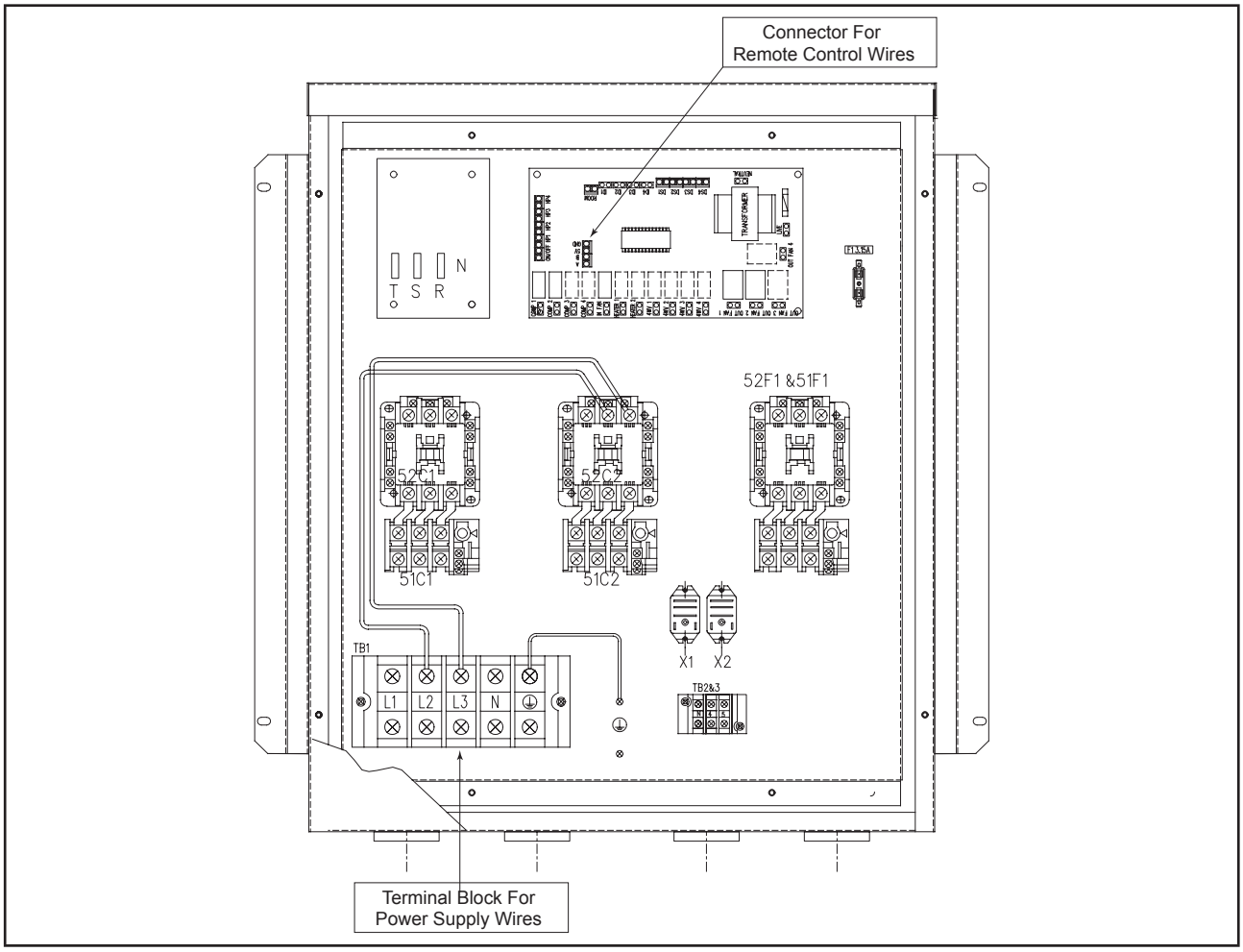
Control Module Of Unit A4RT120A



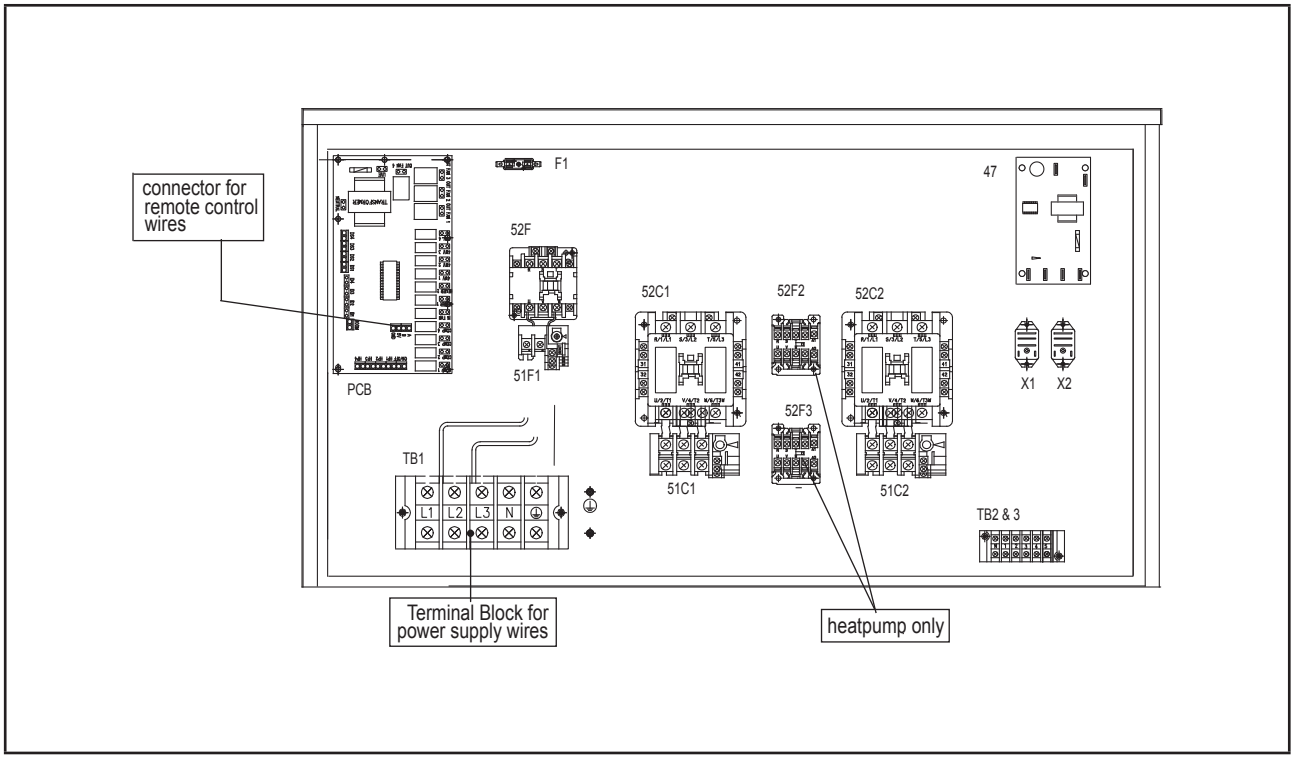
Control Module Of Unit A4RT150/200A



Control Module Of Unit A4RT250/300A



Control Module Of Unit A4RT360/420A



9. The Putting Condition Of The Belt

1. Set the parallel angle of the fan and the motor pulley as shown in table 1 and figure 1.
2. Set the tension of one belt when the flexion load is within the range as shown in figure 2 and table 2 at the proper flexion. (A = 0.016 x C mm)
3. Adjust the suitable tension after the belt sit properly across the pulley (after working for 24-28 hours). When a new belt is used, adjust the suitable tension about 1.3 times the maximum value of the flexion load.
4. Readjust the belt every 2,000 hours after the first adjustment.
   Exchange the belt when the belt's surroundings length has expanded by 2% including the first expansion (about 1%) of the belt (after approximately 8,000 hours converted working time).

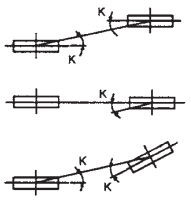


figure 1 Parallel degree of pulley

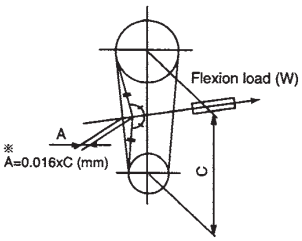


figure 2 Belt tension

Table 1

Parallel angle / pulley	K(i)	note
pulley	10 or less	Gap of 3mm every 1m

Table 2

Size of Pulley Motor		Flexion load W(kgf)
mm	inch	
60-80	2.5-3.0	1.1-1.4
81-90	3.5	1.3-1.7
91-105	4	1.6-2.0
106-above	4.5-above	1.9-2.9

10. Before Starting The Trial Run

After having installed the unit, check that :

(1) The unit is fixed securely.
(2) The unit is installed properly.
(3) The drain pipe is provided with a drain trap.
(4) The electrical wiring has been connected correctly and the terminal screws have been properly tightened.
(5) The duct work has been performed correctly.

Before turning the unit on:

(1) Measure the resistance between the terminals of the electrical parts and ground to ensure that the value is at least 1.0M ohm.
   If the measured value is below 1.0M ohm, do not operate the unit.
(2) The unit is using a phase protector.
   If wiring phase of power supply is mistaken, the unit does not run.
   Please reconfirm and modify wiring phase.

After the unit is turned on:

(1) Check that the fans are rotating in the proper direction.
(2) Check to see whether there are refrigerant leakage, and slack in power or transmission cable.
(3) Check the operation of high-pressure switch.
   If the two lead wires of the outdoor unit fan motor are disconnected from the contactor and cooling is performed, the high-pressure switch should function and stop the unit after 5 to 10 minutes.
   Perform trial operation after completion of above items.

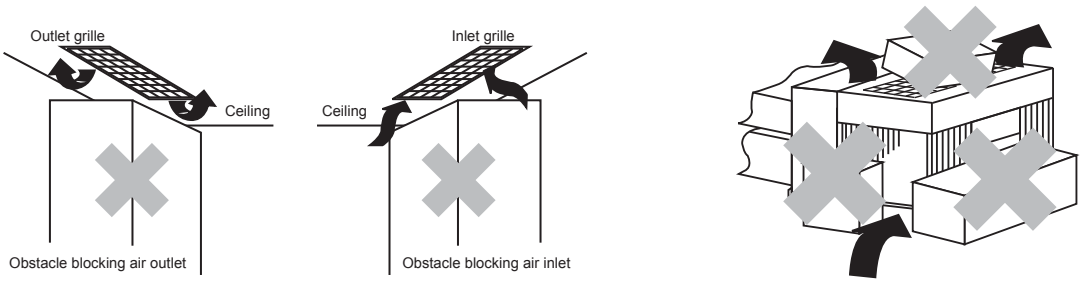
11. Before Operating The Unit

1. Check points for operation

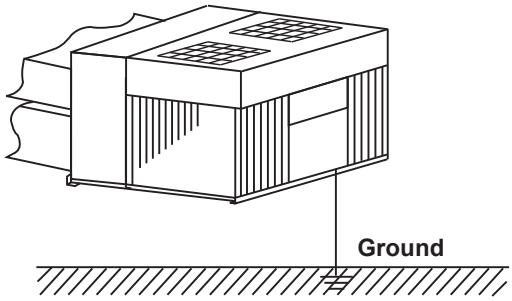
Check the following points before you operate your air conditioner.

(1) Check that there is nothing blocking the ow of air from the air outlet into the air inlet.

Indoor Side **Outdoor Side**



(2) Make sure the air conditioner is properly grounded by checking the ground terminal.



2. Caution for use

Keep the following points in mind to safeguard against failures and breakdowns.

- For safety, confirm that the earth terminal has been connected to the earth wire correctly.
- Never block or cover the unit's intakes or outlets.
  It will reduce the unit's efficiency.
- To start the unit again after it is stopped, ensure 3 minutes has elapsed before turning the unit ON. Repeated stopping and starting within 3 minutes gives improper force to the machine. This can cause the fuse or power source to trip.

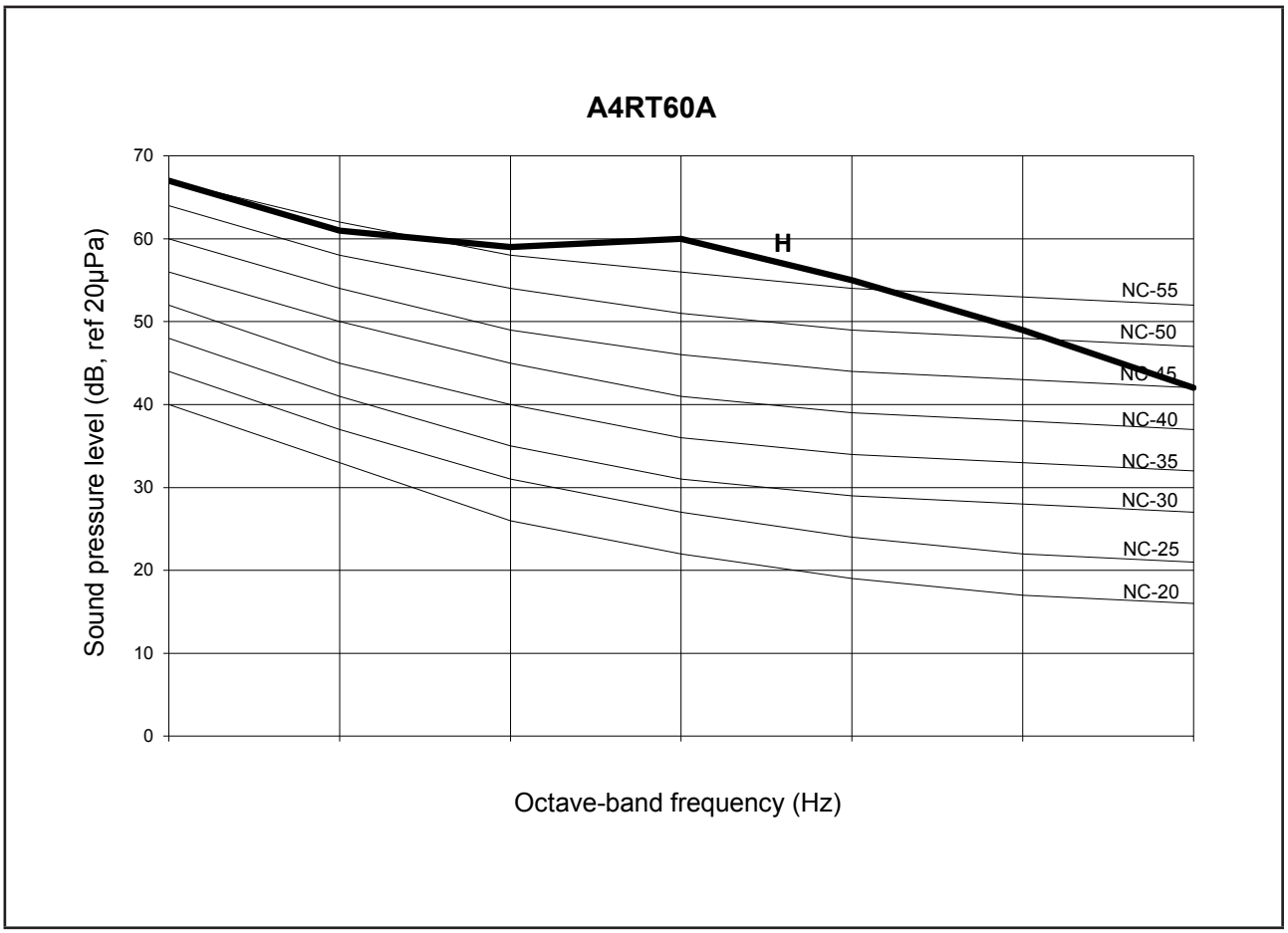
APPLICATION INFORMATION

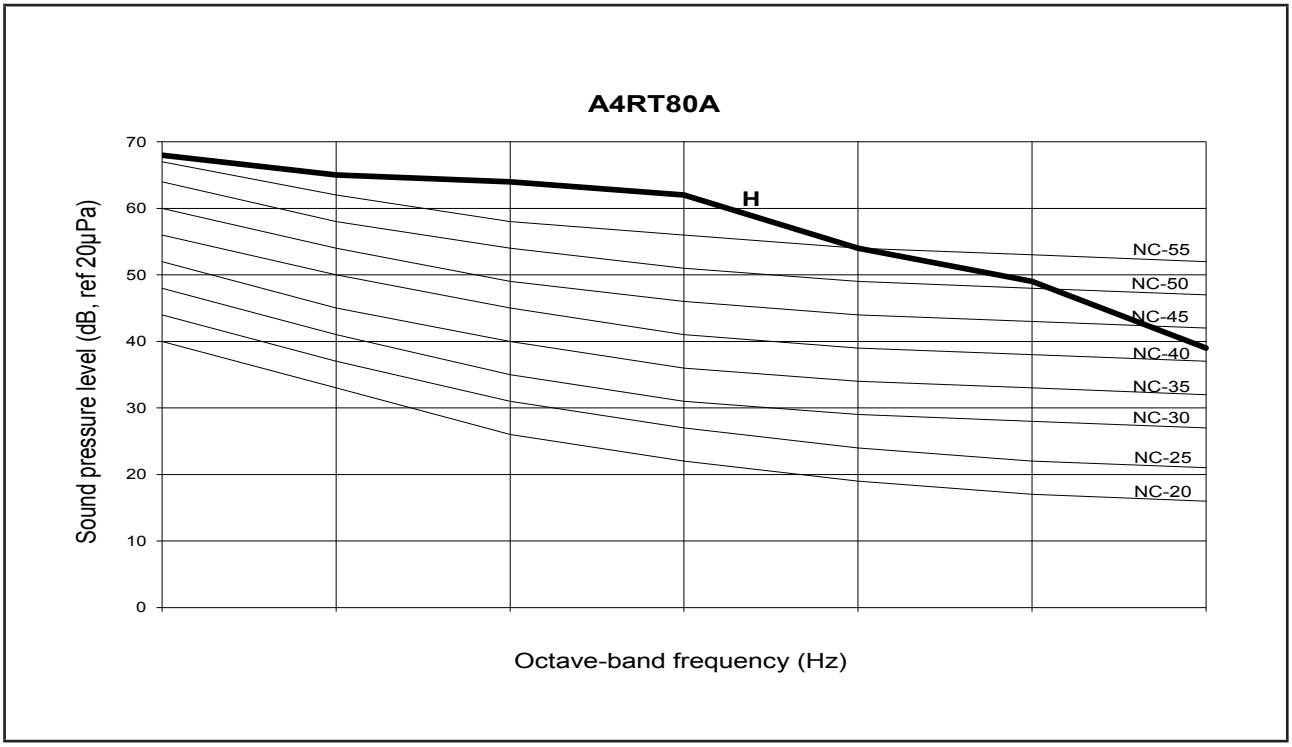
SOUND PRESSURE LEVEL

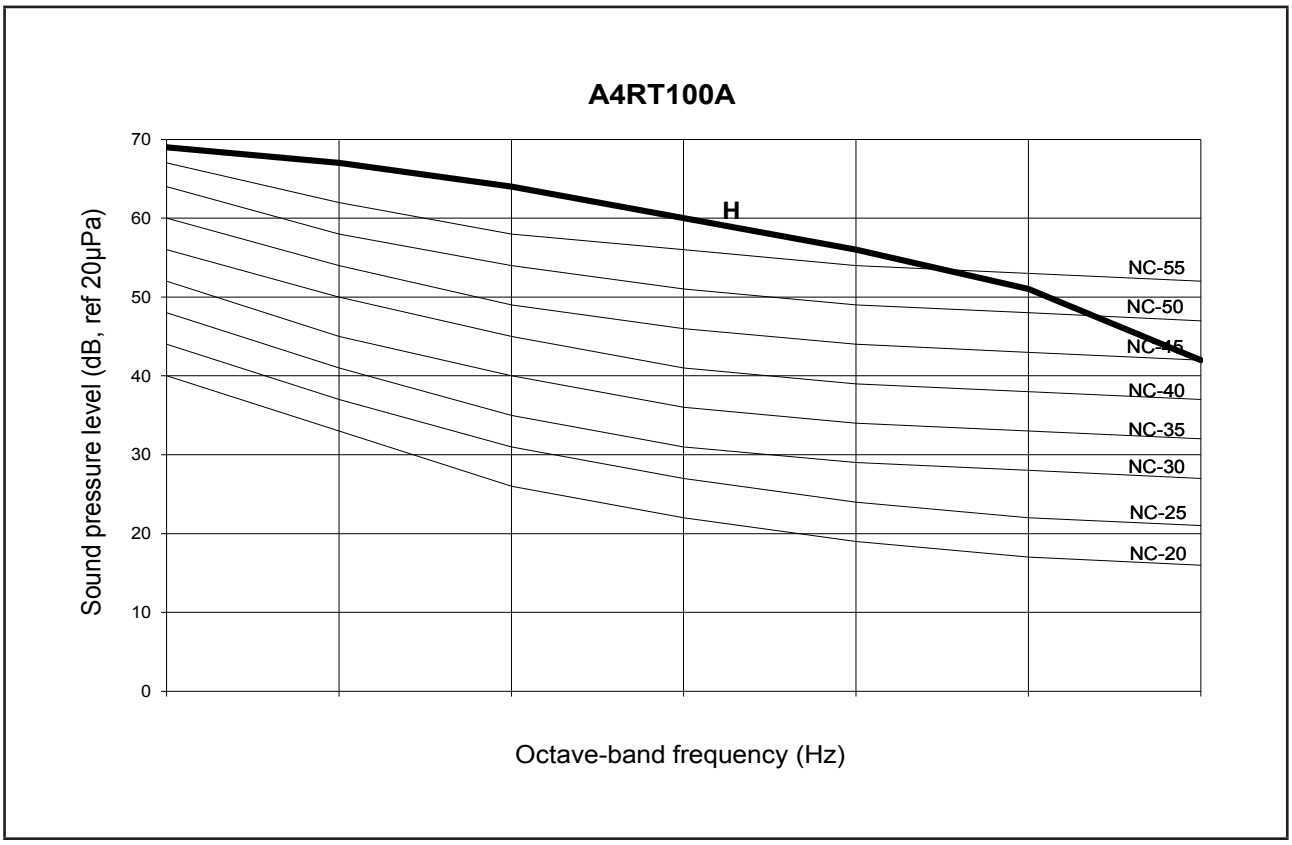
Model	1/1 Octave Sound Pressure (dB, ref 20μPa)							Overall	Noise
	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	(dBA)	Criteria
A4RT60A	67	61	59	60	55	49	42	63	59
A4RT80A	68	65	64	62	54	49	39	65	61
A4RT100A	69	67	64	60	56	51	42	66	58
A4RT120A	68	64	62	65	60	53	45	68	64
A4RT150A	74	68	68	67	60	53	44	70	66
A4RT200A	74	69	67	66	60	52	43	70	65
A4RT250A	76	72	70	71	65	55	46	74	70*
A4RT300A	77	72	71	72	65	55	46	74	71*
A4RT360A	67	74	74	75	76	69	60	80	>70*
A4RT420A	72	76	76	75	75	69	58	80	>70*

Note:
1. A4RT80A, A4RT100A,A4RT150A and A4RT200A
   - Microphone position: 1 m in front of the unit and 1 m above the oor.
2. A4RT60A,A4RT120A,A4RT250A,A4RT300A,A4RT360A and A4RT420A
   - Microphone position: 1 m from the service panel and 1 m height from the oor level.

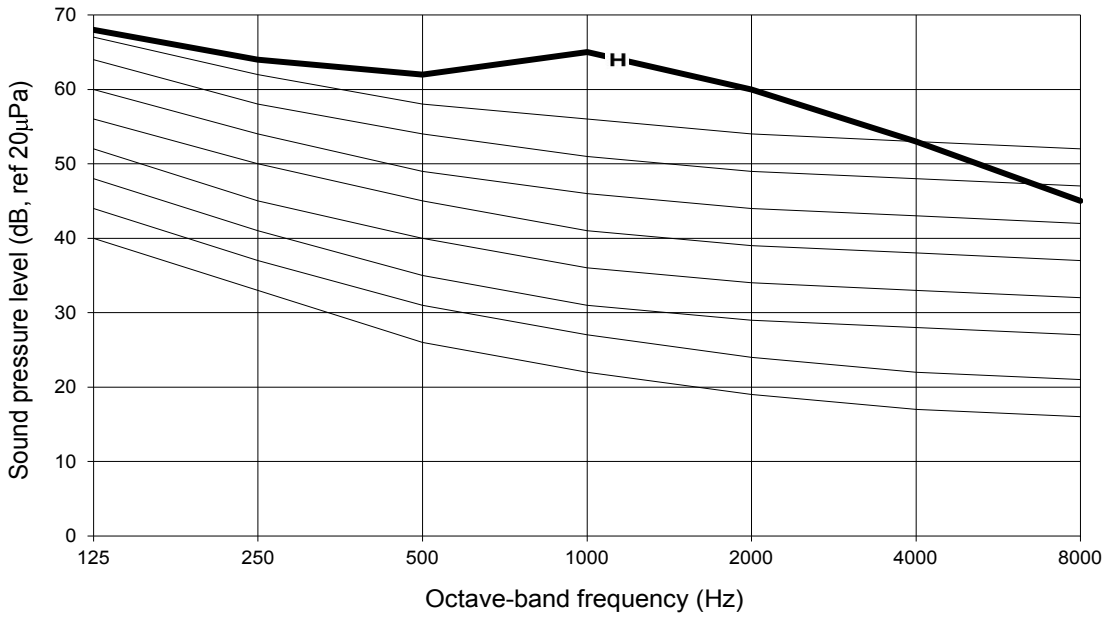
NC Curve



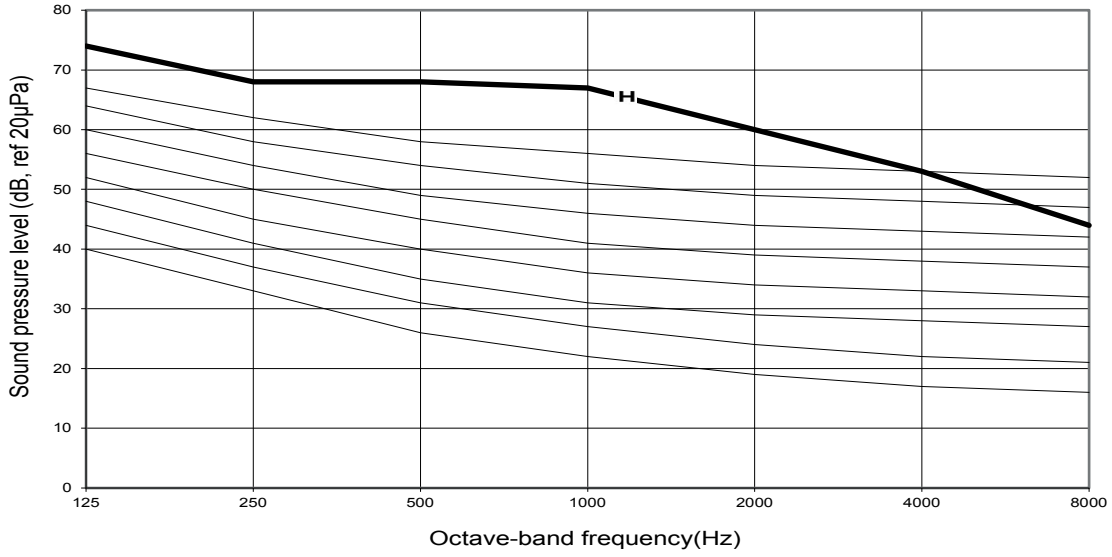

A4RT80A
Sound pressure level (dB, ref 20µPa)
70
60
50
40
30
20
10
0
H
NC-55
NC-50
NC-45
NC-40
NC-35
NC-30
NC-25
NC-20
Octave-band frequency (Hz)

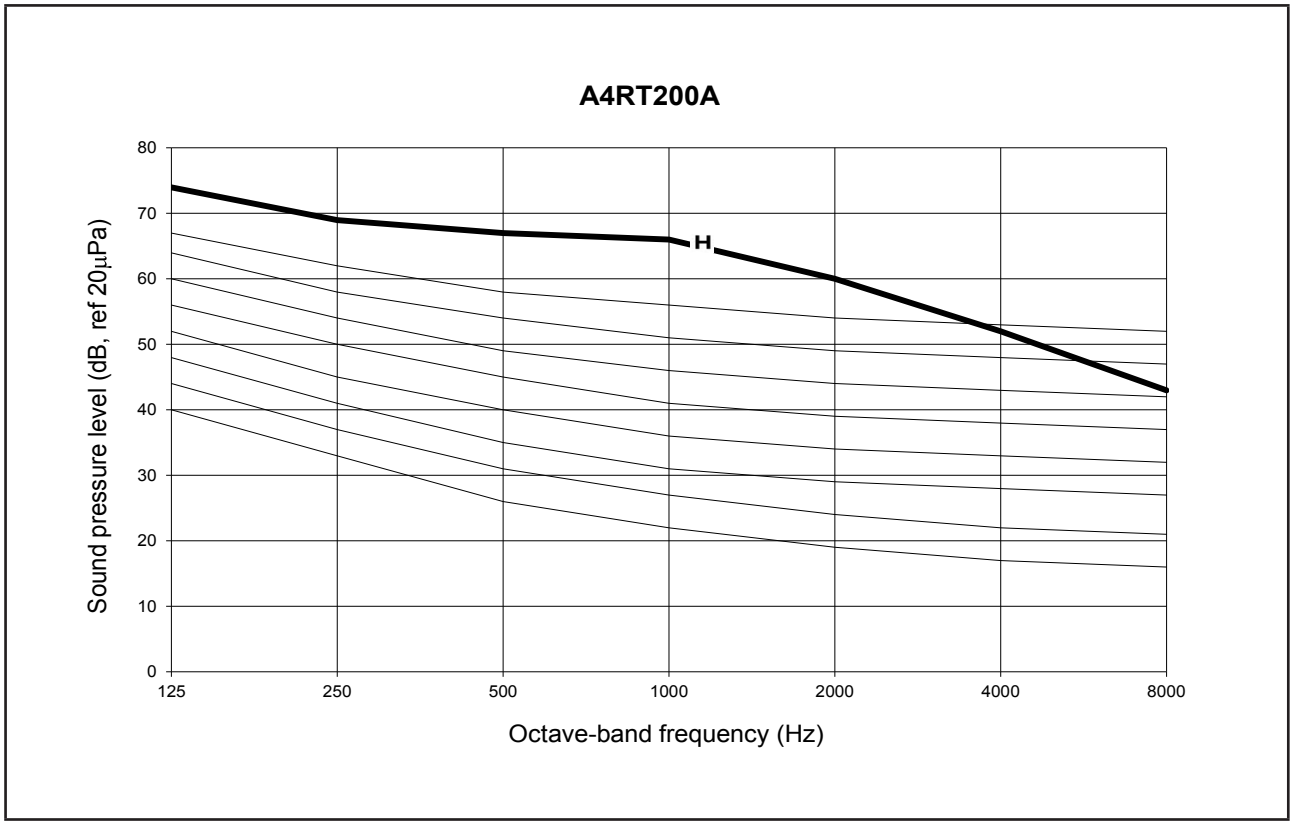

A4RT100A
Sound pressure level (dB, ref 20µPa)
70
60
50
40
30
20
10
0
H
NC-55
NC-50
NC-45
NC-40
NC-35
NC-30
NC-25
NC-20
Octave-band frequency (Hz)

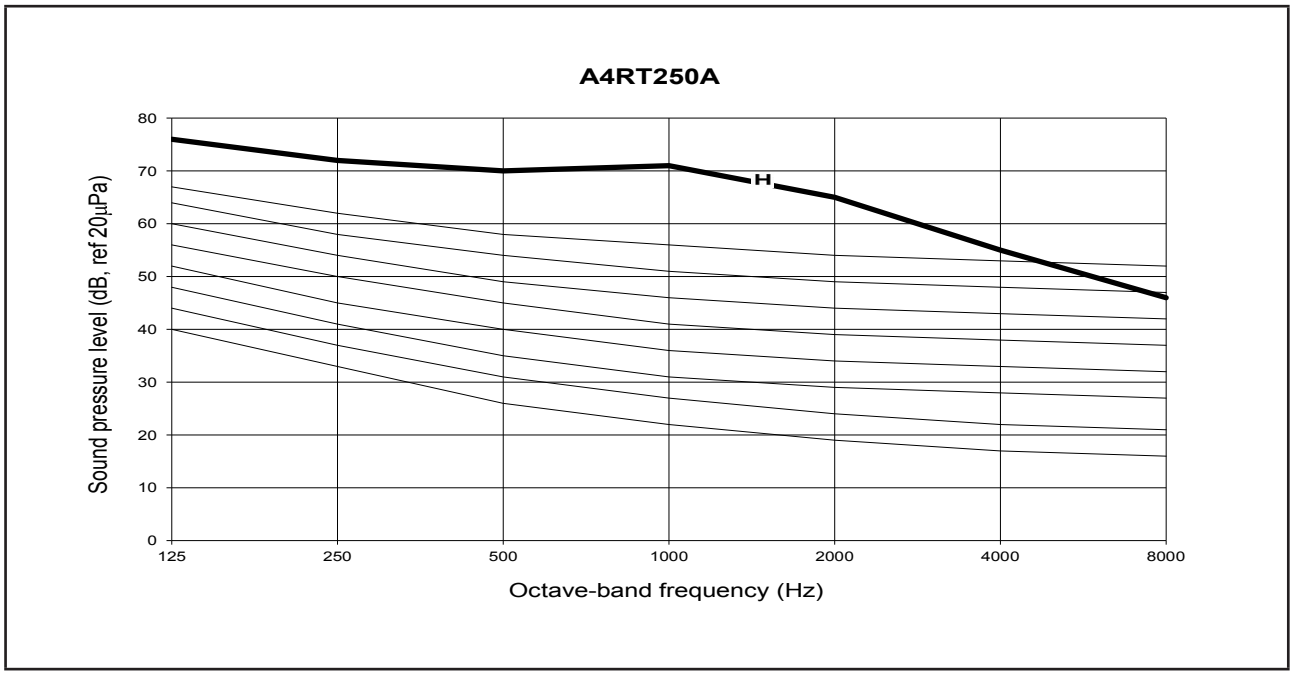
A4RT120A



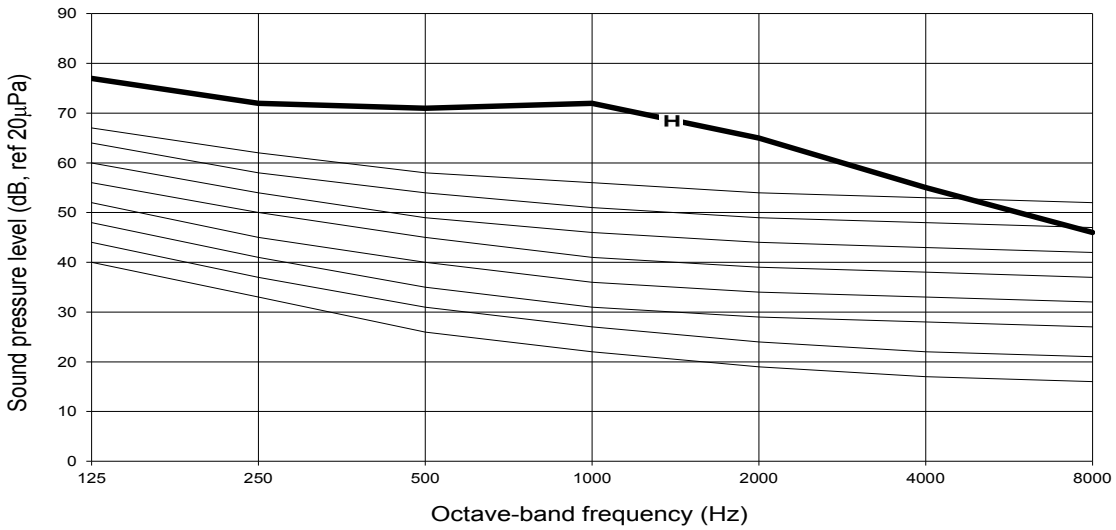
A4RT150A



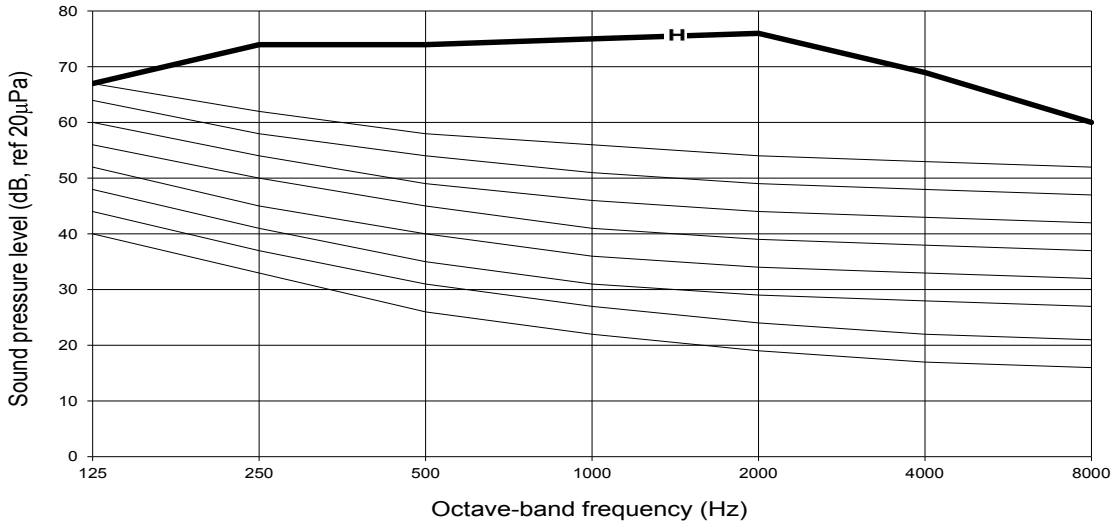

A4RT200A
Sound pressure level (dB, ref 20μPa)
80
70
60
50
40
30
20
10
0
125
250
500
1000
2000
4000
8000
H
Octave-band frequency (Hz)

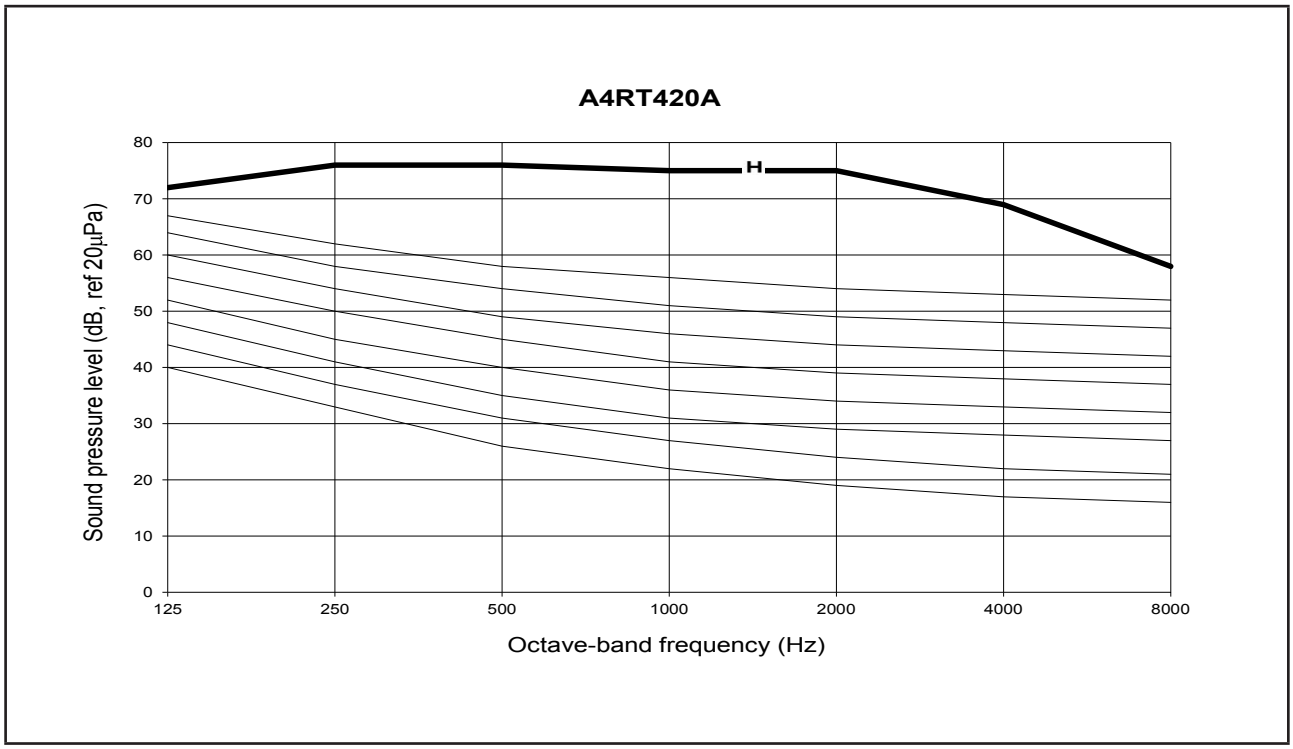

A4RT250A
Sound pressure level (dB, ref 20μPa)
80
70
60
50
40
30
20
10
0
125
250
500
1000
2000
4000
8000
H
Octave-band frequency (Hz)

A4RT300A



A4RT360A




A4RT420A
H
Sound pressure level (dB, ref 20µPa)
80
70
60
50
40
30
20
10
0
125
250
500
1000
2000
4000
8000
Octave-band frequency (Hz)

ENGINEERING & PHYSICAL DATA

Engineering Data – R407C COOLING MODEL

MODEL					A4RT60A	A4RT80A	A4RT100A	A4RT120A
NOMINAL COOLING CAPACITY				Btu/h	59000	72000	95000	110000
				W	17291	21101	27840	32238
NOMINAL TOTAL INPUT POWER (COOLING)				W	5890	8700	11600	12180
NOMINAL RUNNING CURRENT (COOLING)				A	10.90	16.30	20.20	22.80
EER				W/W	2.94	2.43	2.40	2.65
REFRIGERANT CONTROL (EXPANSION DEVICE)					TXV			
REFRIGERANT CHARGE				kg	4.60	4.60	5.90	5.60
POWER SOURCE				V/Ph/Hz	380-415/3/50			
REFRIGERANT TYPE					R407C			
INDOOR UNIT	CONTROL	AIR DISCHARGE			DUCTED			
		OPERATION			WIRED CONTROL			
	AIR FLOW			l/s / CFM	850 / 1800	1334 / 2826	1667 / 3532	1699 / 3600
	EXTERNAL STATIC PRESSURE			Pa (in.wg.)	98 / 10	98	98	98
	SOUND PRESSURE LEVEL			dBA	63	65	66	68
	CONDENSATE DRAIN SIZE			mm	25.4			
	FAN	TYPE			CENTRIFUGAL			
		DRIVE			BELT DRIVE			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP22			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	470	1200	1900	1340
		RATED RUNNING CURRENT		A	1.49	2.10	2.70	2.59
		MOTOR MAX OUTPUT		W	750	1100	1500	1500
		POLES			4	4	4	4
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM	ALUMINIUM	ALUMINIUM
			FACE AREA	m^2	0.53	0.65	0.65	0.63
			ROW		3	3	4	4
	AIR QUALITY	FILTER	TYPE		SARANET			
			QUANTITY	pc	1	1	1	2 + 4
OUTDOOR UNIT	AIR FLOW			l/s / CFM	2124 / 4500	2667 / 5650	2667 / 5650	3776 / 8000
	SOUND PRESSURE LEVEL			dBA	63	65	66	68
	UNIT DIMENSION	HEIGHT X WIDTH X DEPTH		mm	1000 x 1100 x 1530	1000 x 1300 x 1530	1000 x 1300 x 1530	1000 x 1300 x 1530
	PACKING DIMENSION	HEIGHT X WIDTH X DEPTH		mm	1090 x 1250 x 1680	1090 x 1450 x 1680	1090 x 1450 x 1680	1090 x 1450 x 1680
	UNIT WEIGHT			kg	295	370	400	425
	FAN	TYPE			PROPERLLER			
		DRIVE			DIRECT			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP55			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	590	670	670	960
		RATED RUNNING CURRENT		A	2.53	1.30	1.30	2.40
		MOTOR MAX OUTPUT		W	400	550	550	580
		POLES			6	6	6	8
	COMPRESSOR	TYPE			SCROLL			
		OIL TYPE			MINERAL OIL			
		OIL AMOUNT		cm^3	1770	2510	3250	3250
		RATED INPUT POWER		W	4820	6830	9030	10220
		RATED RUNNING CURRENT		A	8.50	12.90	16.20	17.80
		LOCKED ROTOR AMP.		A	74	95	125	125
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM	ALUMINIUM	ALUMINIUM
			FACE AREA	m^2	1.42	1.40	1.38	1.38
			ROW		2	2	3	3
	CASING			COLOUR	IVORY WHITE			

ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151 (NON-DUCTED UNIT) OR ISO 13253 (DUCTED UNIT).

COOLING	HEATING
INDOOR: 27°C DB/ 19°C WB	INDOOR: 20°C DB
OUTDOOR: 35°C DB/ 24°C WB	OUTDOOR: 8°C DB/ 6°C WB

Engineering Data – R407C COOLING MODEL

MODEL					A4RT150A	A4RT200A	A4RT250A	A4RT300A
NOMINAL COOLING CAPACITY				Btu/h	140000	190000	230000	275000
				W	41030	55684	67409	80600
NOMINAL TOTAL INPUT POWER (COOLING)				W	17200	25100	28700	37850
NOMINAL RUNNING CURRENT (COOLING)				A	32.10	43.80	53.00	65.80
EER				W/W	2.39	2.22	2.20	2.13
REFRIGERANT CONTROL (EXPANSION DEVICE)					TXV			
REFRIGERANT CHARGE				kg	3.90	4.20	9.60	10.4 / 10.4
POWER SOURCE				V/Ph/Hz	380-415/3/50			
REFRIGERANT TYPE					R407C			
INDOOR UNIT	CONTROL	AIR DISCHARGE			DUCTED			
		OPERATION			WIRED CONTROL			
	AIR FLOW			l/s / CFM	2667 / 5651	3167 / 6710	3776 / 8000	4531 / 9600
	EXTERNAL STATIC PRESSURE			Pa (in.wg.)	196	196	294	294
	SOUND PRESSURE LEVEL			dBA	70	70	74	74
	CONDENSATE DRAIN SIZE			mm	25.4			
	FAN	TYPE			CENTRIFUGAL			
		DRIVE			BELT DRIVE			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP22			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	2200	3500	4700	6900
		RATED RUNNING CURRENT		A	3.80	4.90	9.10	11.70
		MOTOR MAX OUTPUT		W	2200	3700	5500	7500
		POLES			4			
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM	ALUMINIUM	ALUMINIUM
			FACE AREA	m^2	0.57	0.57	1.83	0.91
			ROW		3	4	4	4
	AIR QUALITY	FILTER	TYPE		SARANET			
			QUANTITY	pc	2	2	2	2
OUTDOOR UNIT	AIR FLOW			l/s / CFM	5333 / 11300			
	SOUND PRESSURE LEVEL			dBA	70	70	74	74
	UNIT DIMENSION	HEIGHT X WIDTH X DEPTH		mm	1200 x 1990 x 1800	1200 x 1990 x 1800	1735 x 2250 x 2800	1735 x 2250 x 2800
	PACKING DIMENSION	HEIGHT X WIDTH X DEPTH		mm	1320 x 2100 x 1810	1320 x 2100 x 1810	1900 x 2250 x 2900	1900 x 2250 x 2900
	UNIT WEIGHT			kg	665	765	1200	1350
	FAN	TYPE			PROPERLLER			
		DRIVE			DIRECT			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP55			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	1280	1280	4200	1980
		RATED RUNNING CURRENT		A	2.7	2.7	7.2	3.4
		MOTOR MAX OUTPUT		W	550	550	1500	1500
		POLES			6	6	6	6
	COMPRESSOR	TYPE			SCROLL			
		OIL TYPE			MINERAL OIL			
		OIL AMOUNT		cm^3	2510	3250	3250	3253 & 3253
		RATED INPUT POWER		W	13720	20320	19800	27200
		RATED RUNNING CURRENT		A	25.60	36.20	36.70	47.40
		LOCKED ROTOR AMP.		A	95	125	125	174 & 174
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM	ALUMINIUM	ALUMINIUM
			FACE AREA	m^2	1.25	1.21	2.98	2.98
			ROW		2	3	2	2 & 2
	CASING			COLOUR	IVORY WHITE			

ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151 (NON-DUCTED UNIT) OR ISO 13253 (DUCTED UNIT).

COOLING	HEATING
INDOOR: 27°C DB/ 19°C WB	INDOOR: 20°C DB
OUTDOOR: 35°C DB/ 24°C WB	OUTDOOR: 8°C DB/ 6°C WB

Engineering Data – R407C COOLING MODEL

MODEL					A4RT360A	A4RT420A		
NOMINAL COOLING CAPACITY				Btu/h	331000	415000		
				W	97007	121624		
NOMINAL TOTAL INPUT POWER (COOLING)				W	41870	48800		
NOMINAL RUNNING CURRENT (COOLING)				A	74.20	83.70		
EER				W/W	2.32	2.49		
REFRIGERANT CONTROL (EXPANSION DEVICE)					TXV			
REFRIGERANT CHARGE				kg	14.5 / 18.0	18.0 / 18.0		
POWER SOURCE				V/Ph/Hz	380-415/3/50			
REFRIGERANT TYPE					R407C			
INDOOR UNIT	CONTROL	AIR DISCHARGE			DUCTED			
		OPERATION			WIRED CONTROL			
	AIR FLOW			l/s / CFM	5191 / 11000	5900 / 12500		
	EXTERNAL STATIC PRESSURE			Pa (in.wg.)	294 / 30	294 / 30		
	SOUND PRESSURE LEVEL			dBA	80	80		
	CONDENSATE DRAIN SIZE			mm	25.4			
	FAN	TYPE			CENTRIFUGAL			
		DRIVE			BELT DRIVE			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP22			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	5870	7500		
		RATED RUNNING CURRENT		A	11.30	13.30		
		MOTOR MAX OUTPUT		W	7500	7500		
		POLES			4			
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM		
			FACE AREA	m²	3.02	3.02		
			ROW		3 & 4	4		
	AIR QUALITY	FILTER	TYPE		SARANET			
			QUANTITY	pc	2 + 4	2 + 4		
OUTDOOR UNIT	AIR FLOW			l/s / CFM	20000	20000		
	SOUND PRESSURE LEVEL			dBA	80	80		
	UNIT DIMENSION	HEIGHT X WIDTH X DEPTH		mm	1974 x 2252 x 3180	1974 x 2252 x 3180		
	PACKING DIMENSION	HEIGHT X WIDTH X DEPTH		mm	2150 x 2300 x 3250	2150 x 2300 x 3250		
	UNIT WEIGHT			kg	1510	1600		
	FAN	TYPE			PROPERLLER			
		DRIVE			DIRECT			
	FAN MOTOR	TYPE			INDUCTION MOTOR			
		INDEX OF PROTECTION (IP)			IP55			
		INSULATION GRADE			F			
		RATED INPUT POWER		W	4500	4500		
		RATED RUNNING CURRENT		A	8.4	8.40		
		MOTOR MAX OUTPUT		W	1250	1250		
		POLES			6	6		
	COMPRESSOR	TYPE			SCROLL			
		OIL TYPE			MINERAL OIL			
		OIL AMOUNT		cm³	6200 & 8000	8000		
		RATED INPUT POWER		W	31500	36800		
		RATED RUNNING CURRENT		A	54.50	62.00		
		LOCKED ROTOR AMP.		A	175 & 215	215 & 215		
	COIL	TUBE	MATERIAL		COPPER			
			DIAMETER	mm	9.52			
		FIN	MATERIAL		ALUMINIUM	ALUMINIUM		
			FACE AREA	m²	3.50	3.5		
			ROW		2 & 3	3		
	CASING			COLOUR	IVORY WHITE			

ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151 (NON-DUCTED UNIT) OR ISO 13253 (DUCTED UNIT).

COOLING	HEATING
INDOOR: 27°C DB/ 19°C WB	INDOOR: 20°C DB
OUTDOOR: 35°C DB/ 24°C WB	OUTDOOR: 8°C DB/ 6°C WB

ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
Standard for User Setting

Safety Devices (R407C)

MODEL				A4RT60A	A4RT80A
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa/psi	3241 / 470	
		CLOSE	kPa/psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa/psi	N/A	
		CLOSE	kPa/psi	N/A	
	PHASE SEQUENCER			YES	
	DISCHARGE THERMOSTAT SETTING		°C / °F	125 / 257	

MODEL				A4RT100A	A4RT120A
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa/psi	3241 / 470	
		CLOSE	kPa/psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa/psi	N/A	
		CLOSE	kPa/psi	N/A	
	PHASE SEQUENCER			N/A	
	DISCHARGE THERMOSTAT SETTING		°C / °F	125 / 257	

MODEL				A4RT150A	A4RT200A
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa/psi	3241 / 470	
		CLOSE	kPa/psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa/psi	N/A	
		CLOSE	kPa/psi	N/A	
	PHASE SEQUENCER			YES	
	DISCHARGE THERMOSTAT SETTING		°C / °F	125 / 257	

MODEL				A4RT250A	A4RT300A
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa/psi	3241 / 470	
		CLOSE	kPa/psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa/psi	N/A	
		CLOSE	kPa/psi	N/A	
	PHASE SEQUENCER			YES	
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

Safety Devices (R407C)

MODEL				A4RT360A	A4RT420A
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa/psi	3241 / 470	
		CLOSE	kPa/psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa/psi	N/A	
		CLOSE	kPa/psi	N/A	
	PHASE SEQUENCER			YES	
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	

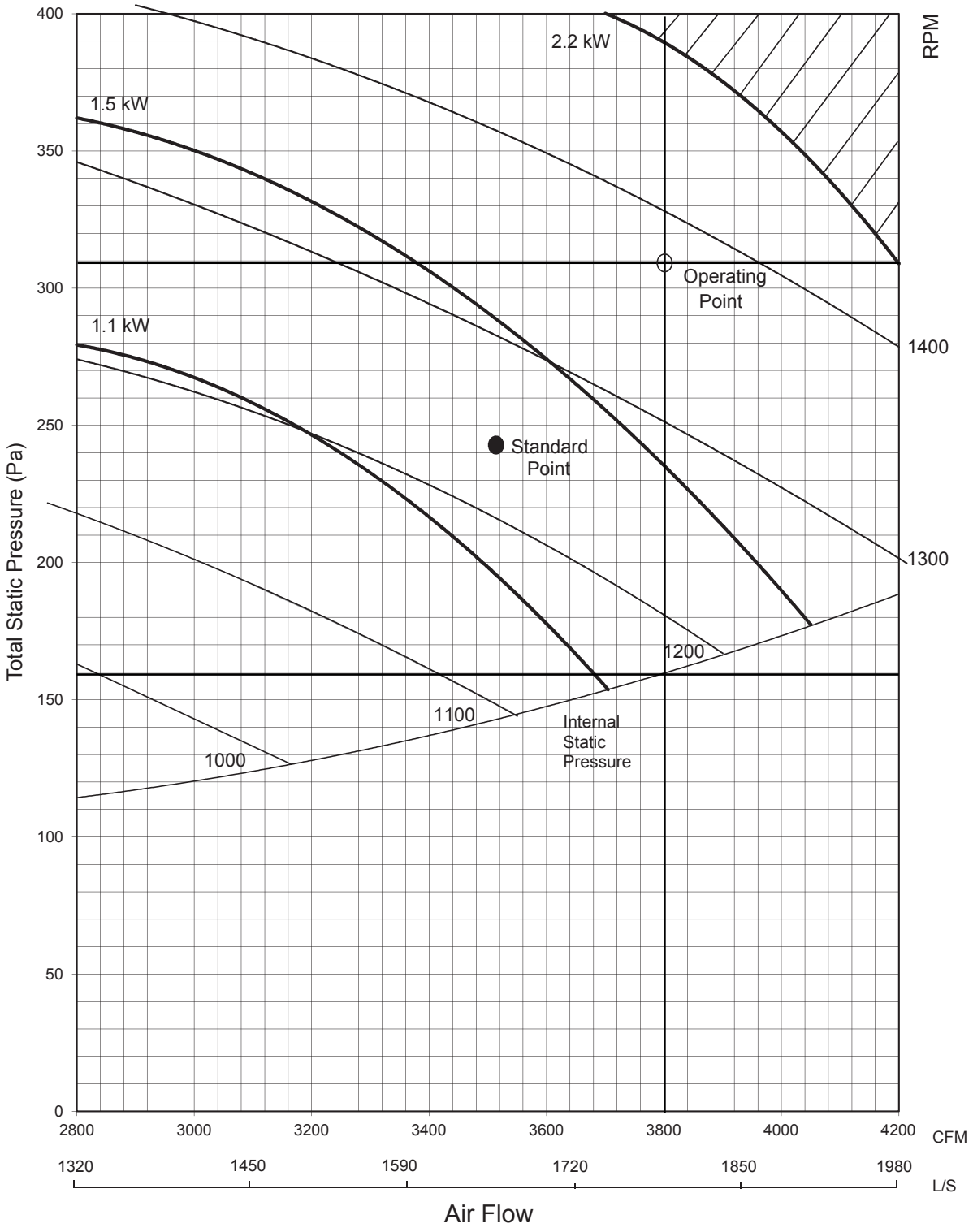
SELECTION PROCESS

Selection Steps

The following are the design requirements for A4RT100A unit:				
	Model:		**A4RT100A**	
	Supply Air Quantity	=	3800	CFM
	External Static Pressure	=	150	Pa
Step 1:	From the fan curve (at 3800 CFM), Standard operating system;			
	Internal Static Pressure	=	**160**	Pa
Step 2:	Therefore at 3800 CFM and 150 Pa external static pressure,			
	Total Static Pressure	=	150 + 160	Pa
		=	**310**	Pa
Step 3:	From the blower curve, the design requirement calls for RPM about 1375 RPM.			
	From the table:			
	Motor pulley	=	106	mm
	Blower pulley	=	125	mm
	Motor RPM	=	1420	
	In order to obtain 1380 RPM, we calculate the new blower pulley as: (while maintaining the motor pulley)			
	Db	=	106 x (1420/1380)	
		=	109.1	mm
	Let us take close approximation of 110 mm diameter pulley size			
	Recheck, with Db = **110mm**			
	Blower pulley	=	1420 x (106/110)	
		=	**1368.4. RPM**	
	We thus need to change the blower pulley from 125 mm to 110 mm in order to obtain the higher operating static pressure.			
Step 4:	When the pulley is changed, the V-belt length must be rechecked. We have for horizontal air throw con□guration:			
	V-belt length, L	=	2C + 1.57 (Db + Dm)	
		=	(2 x 174) + 1.57(110+ 106)	
		=	687.12	
	We thus can use a belt with a length of **687mm**			
	where, C	=	distance between the centres of the two pulleys	
	Db	=	diameter of blower pulley	
	Dm	=	diameter of motor pulley	
Step 5:	From the blower curve, we can also notice that the motor power input has maintained within the current operating range of the standard unit's motor.			
	Summary:			
	i) Fan motor kW	=	**2.2**	kW
	ii) Blower pulley diameter	=	**110**	mm
	iii) V-belt size	=	**687**	mm

Note: Factory supplied rooftop is only with standard drive package.
All other changes are only given as example and need to be field supply.

A4RT100A


400
350
300
250
200
150
100
50
0
Total Static Pressure (Pa)
2.2 kW
1.5 kW
1.1 kW
Operating Point
Standard Point
Internal Static Pressure
1400
1300
1200
1100
1000
RPM
2800
3000
3200
3400
3600
3800
4000
4200
CFM
1320
1450
1590
1720
1850
1980
L/S
Air Flow

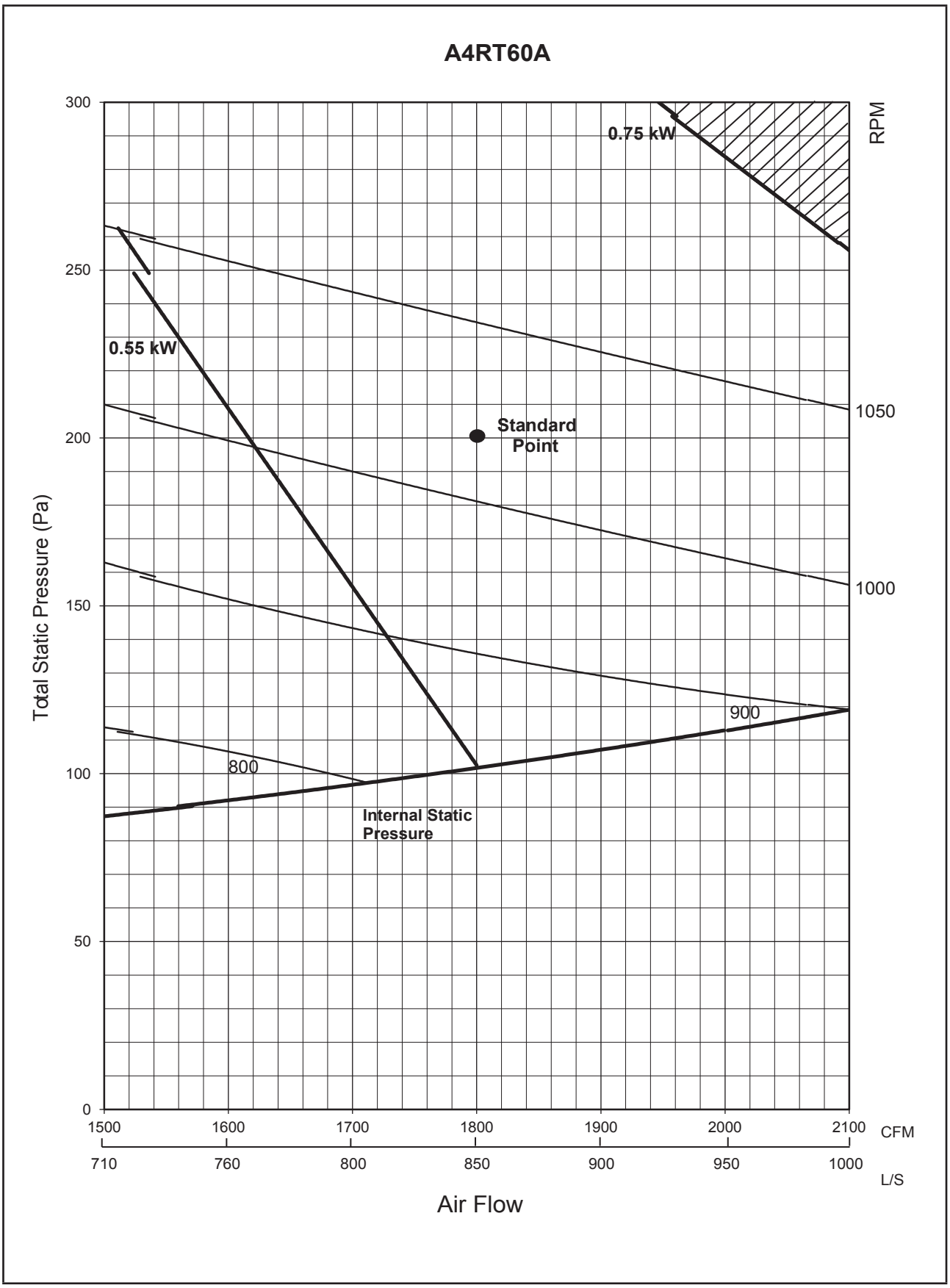
DRIVE PACKAGE

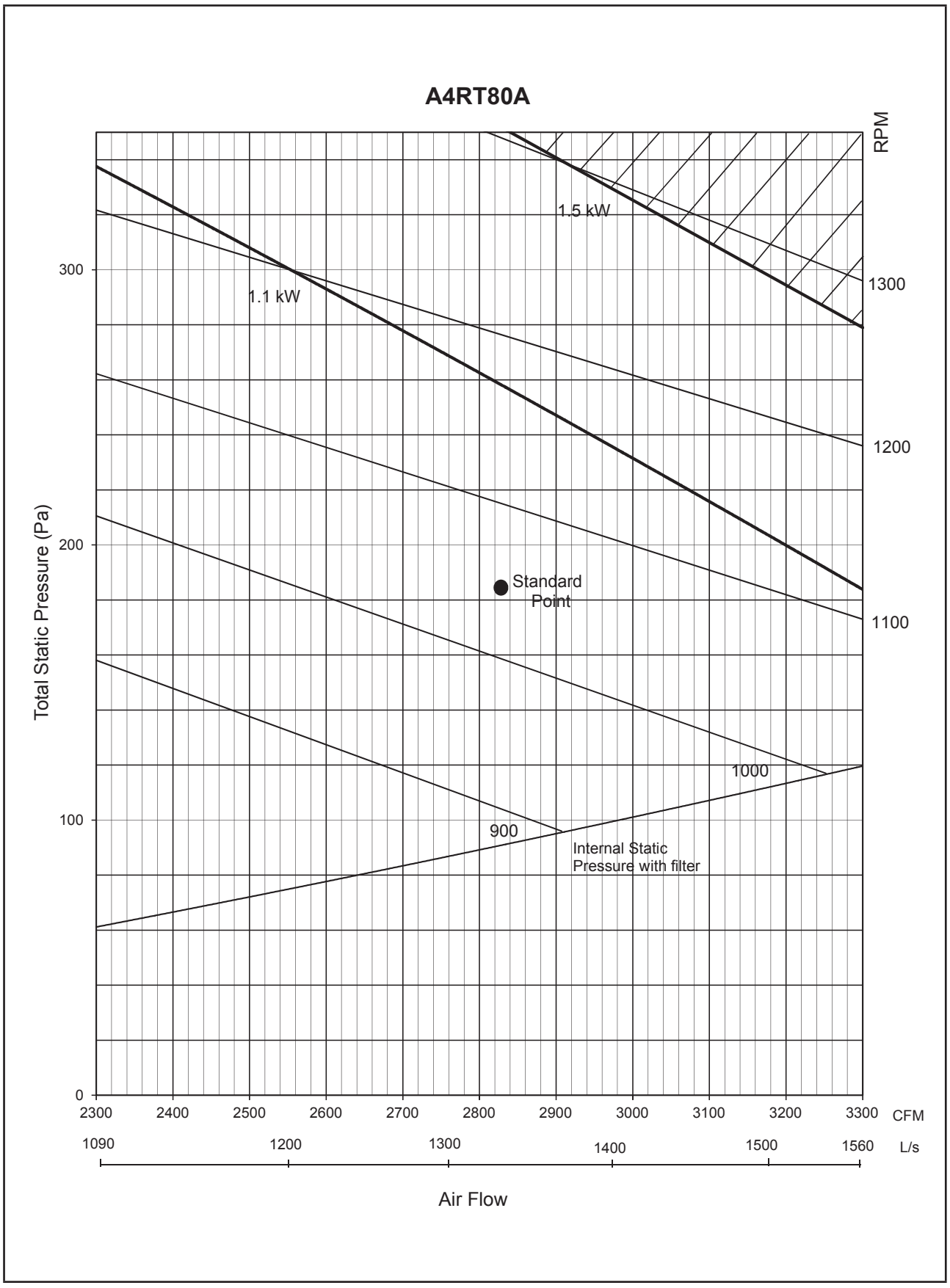
Below tables summarizes the pulley data, motor size used for the RT series, as manufactured.

Model	Blower Pulley, Db		Motor Pulley, Dm		V Belt	
	Type	Diameter (mm)	Type	Diameter (mm)	Type	Length (mm)
A4RT60A	SPZ 1	125	SPZ 1	95	SPZ	750
A4RT80A	SPZ 1	140	SPZ 1	100	SPZ	737
A4RT100A	SPZ 1	125	SPZ 1	106	SPZ	710
A4RT120A	SPZ 1	125	SPZ 1	106	SPZ	710
A4RT150A	SPA 2	160	SPA 2	90	SPA	782
A4RT200A	SPA 2	170	SPA 2	100	SPA	757
A4RT250A	SPA 2	224	SPA 2	125	SPZ	1662
A4RT300A	SPA 2	224	SPA 2	140	SPZ	1700
A4RT360A	SPA	280	VPT	139	SPA	2132
A4RT420A	SPA	250	VPT	139	SPA	2060

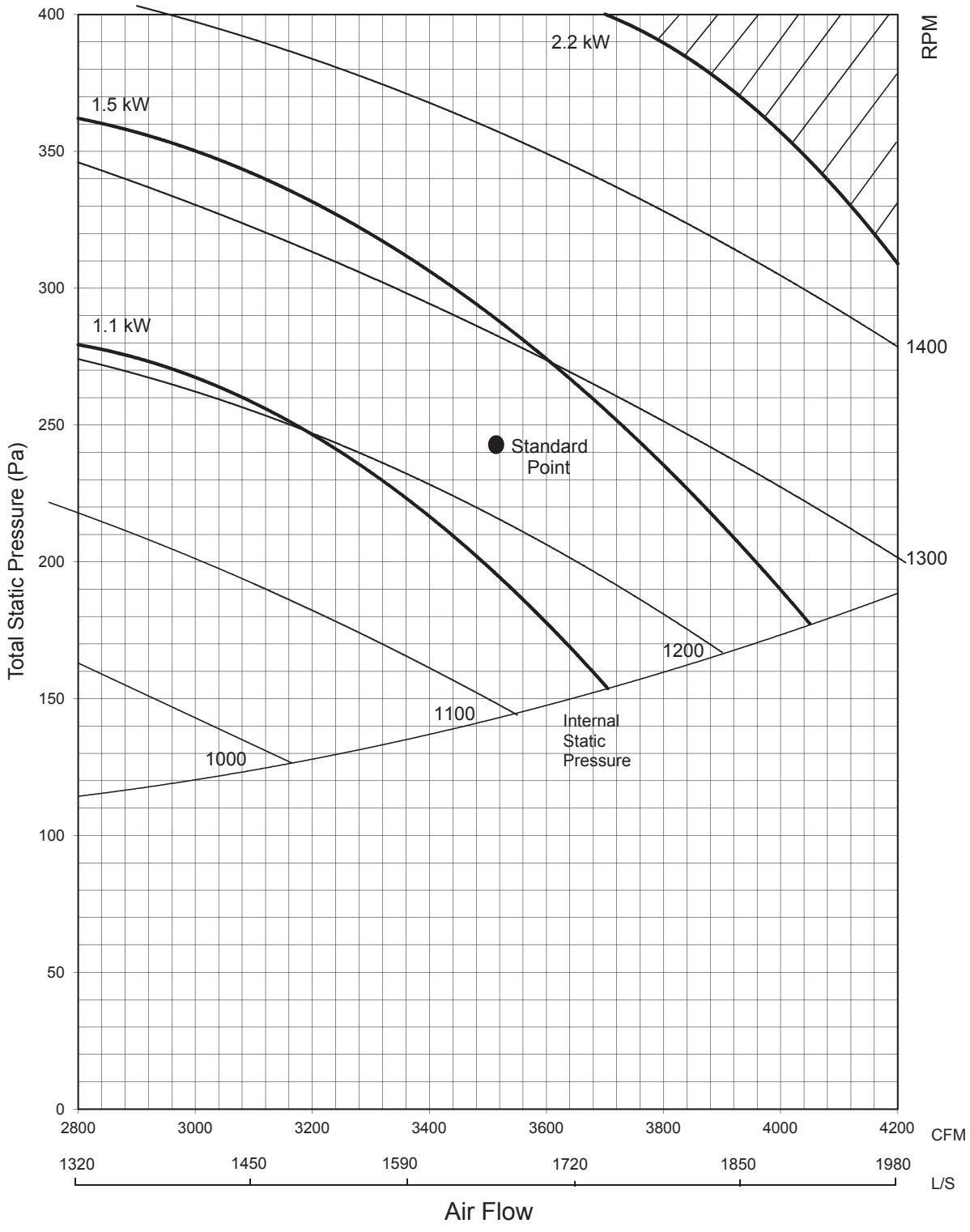
Model	Pulley Center Distance, C (mm)			Motor	
	Nom	Min	Max	kw	RPM
A4RT60A	203	203	245	0.75	1420
A4RT80A	180	175	190	1.1	1420
A4RT100A	174	170	185	1.5	1420
A4RT120A	174	170	185	1.5	1420
A4RT150A	195	190	205	2.2	1430
A4RT200A	167	165	180	3.7	1430
A4RT250A	558	558	572	5.5	1440
A4RT300A	565	558	572	7.5	1440
A4RT360A	748	730	763	7.5	1440
A4RT420A	739	730	763	7.5	1440

Blower Curve

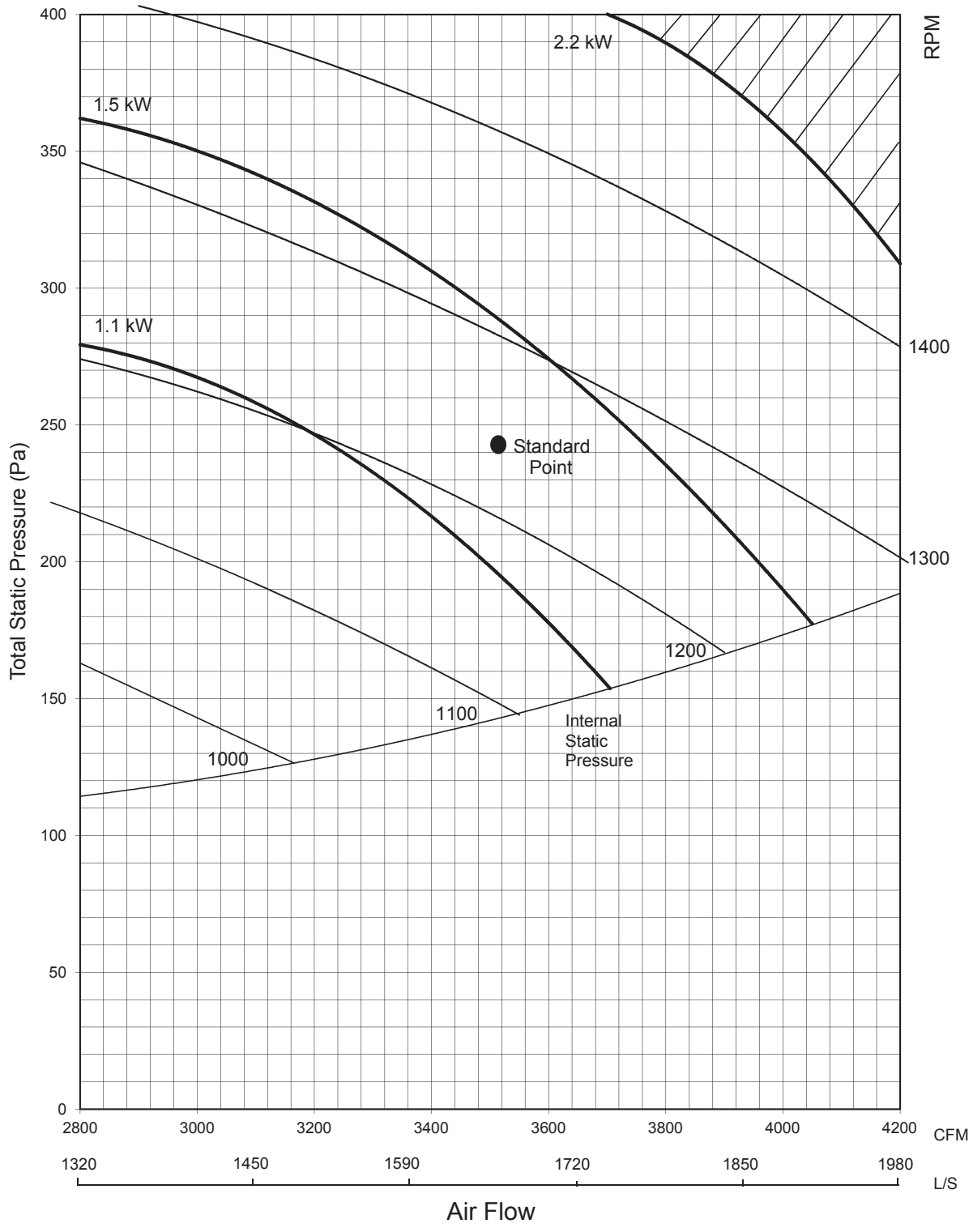



A4RT80A
RPM
1.5 kW
1.1 kW
1300
1200
1100
1000
900
Standard
Point
Internal Static
Pressure with filter
Total Static Pressure (Pa)
300
200
100
0
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
CFM
1090
1200
1300
1400
1500
1560
L/s
Air Flow

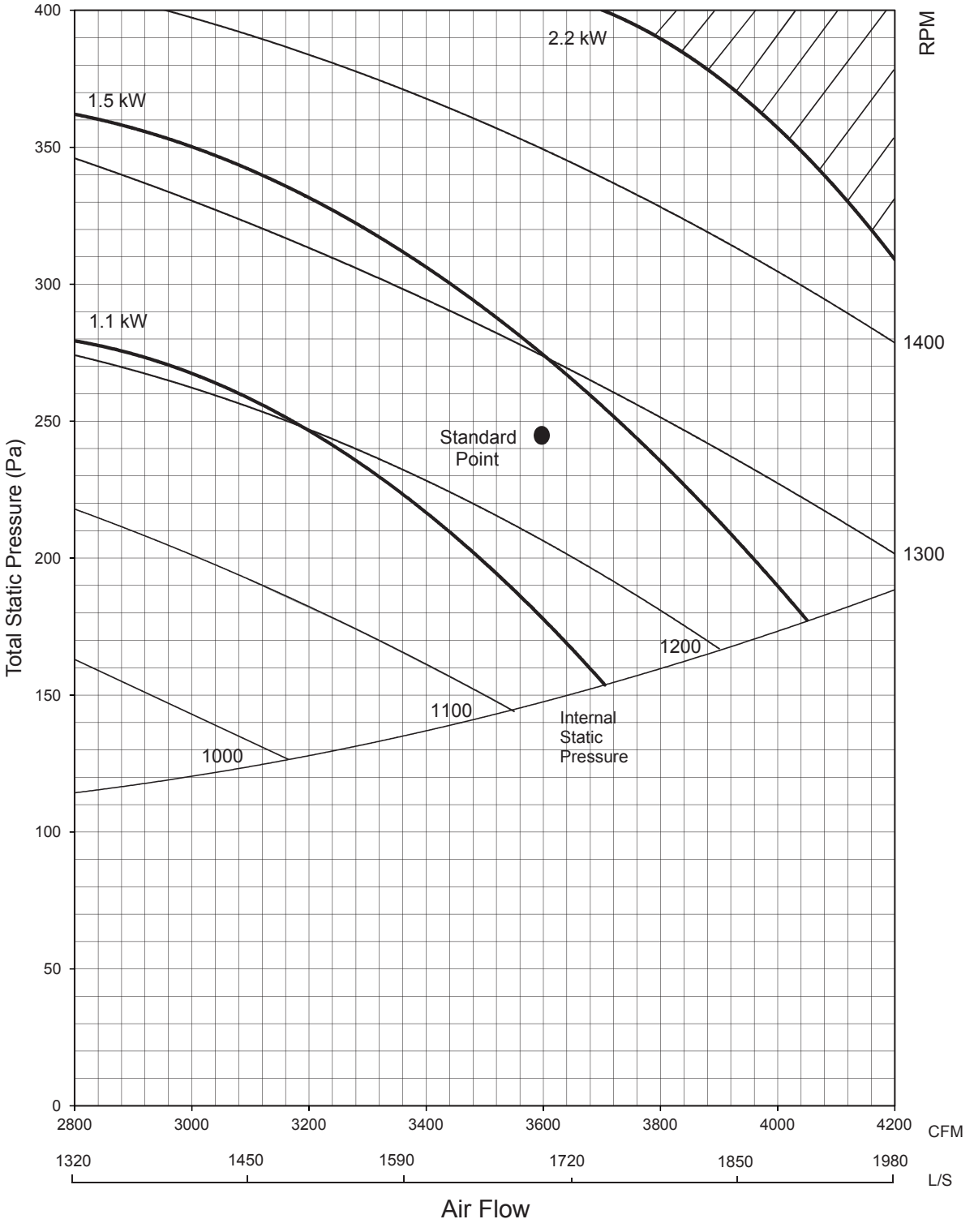
A4RT100A

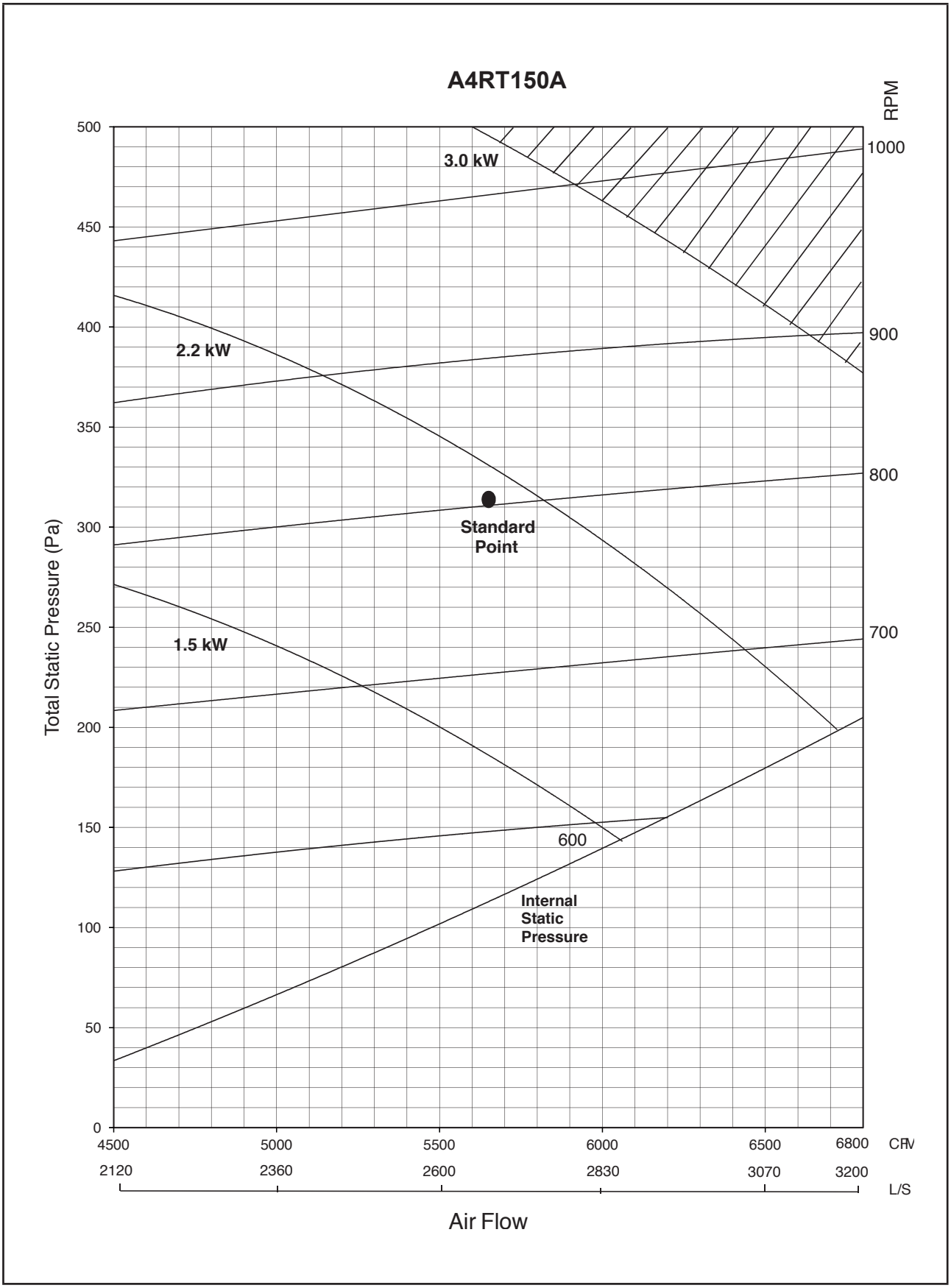

400
350
300
250
200
150
100
50
0
Total Static Pressure (Pa)
2.2 kW
1.5 kW
1.1 kW
RPM
1400
1300
1200
1100
1000
Standard Point
Internal Static Pressure
2800
3000
3200
3400
3600
3800
4000
4200
CFM
1320
1450
1590
1720
1850
1980
L/S
Air Flow

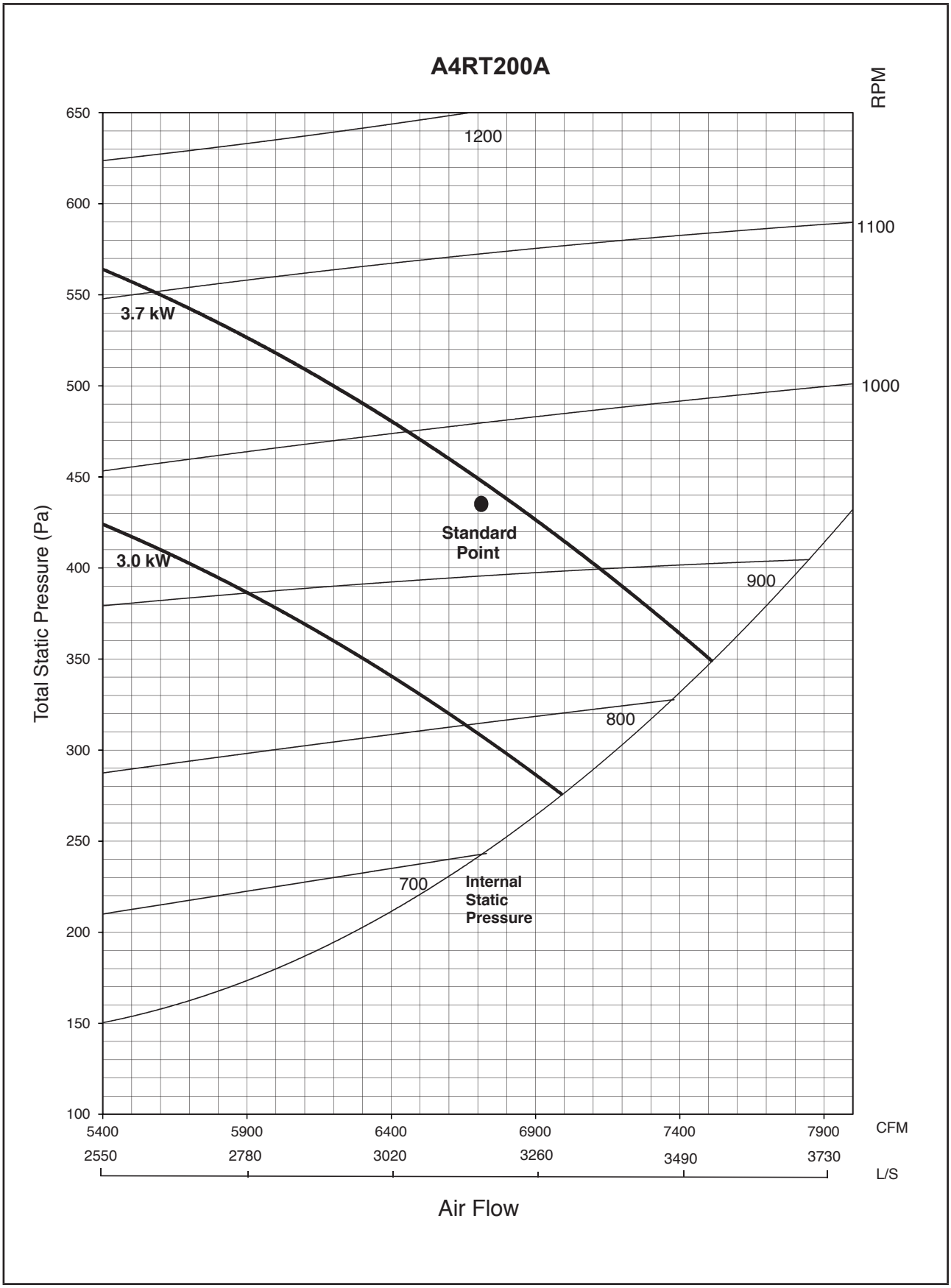
A4RT100A


400
350
300
250
200
150
100
50
0
Total Static Pressure (Pa)
2.2 kW
1.5 kW
1.1 kW
RPM
1400
1300
1200
1100
1000
Standard
Point
Internal
Static
Pressure
2800
3000
3200
3400
3600
3800
4000
4200
CFM
1320
1450
1590
1720
1850
1980
L/S
Air Flow

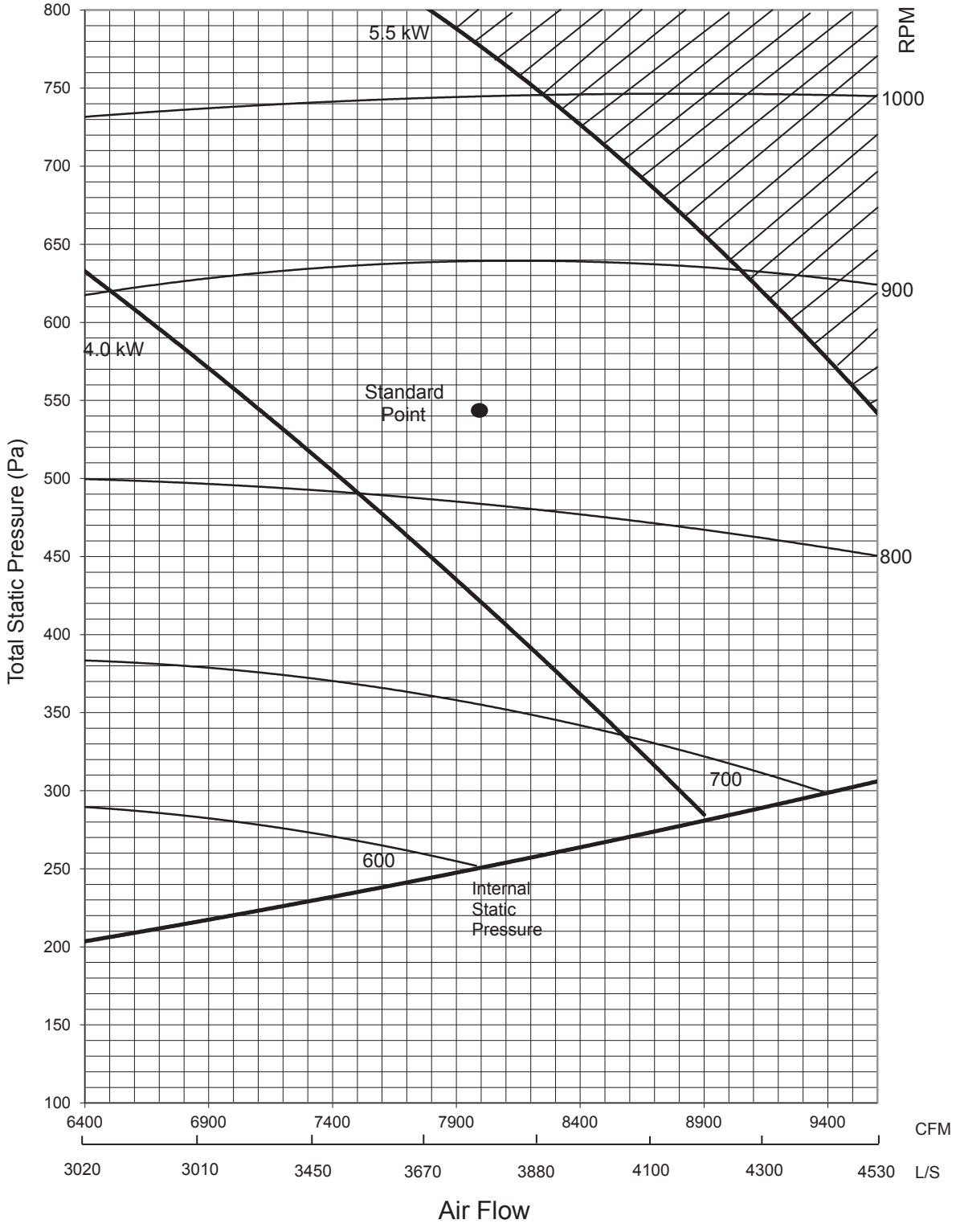
A4RT120A


Total Static Pressure (Pa)
400
350
300
250
200
150
100
50
0
2.2 kW
1.5 kW
1.1 kW
RPM
1400
1300
1200
1100
1000
Standard
Point
Internal
Static
Pressure
2800
3000
3200
3400
3600
3800
4000
4200
CFM
1320
1450
1590
1720
1850
1980
L/S
Air Flow

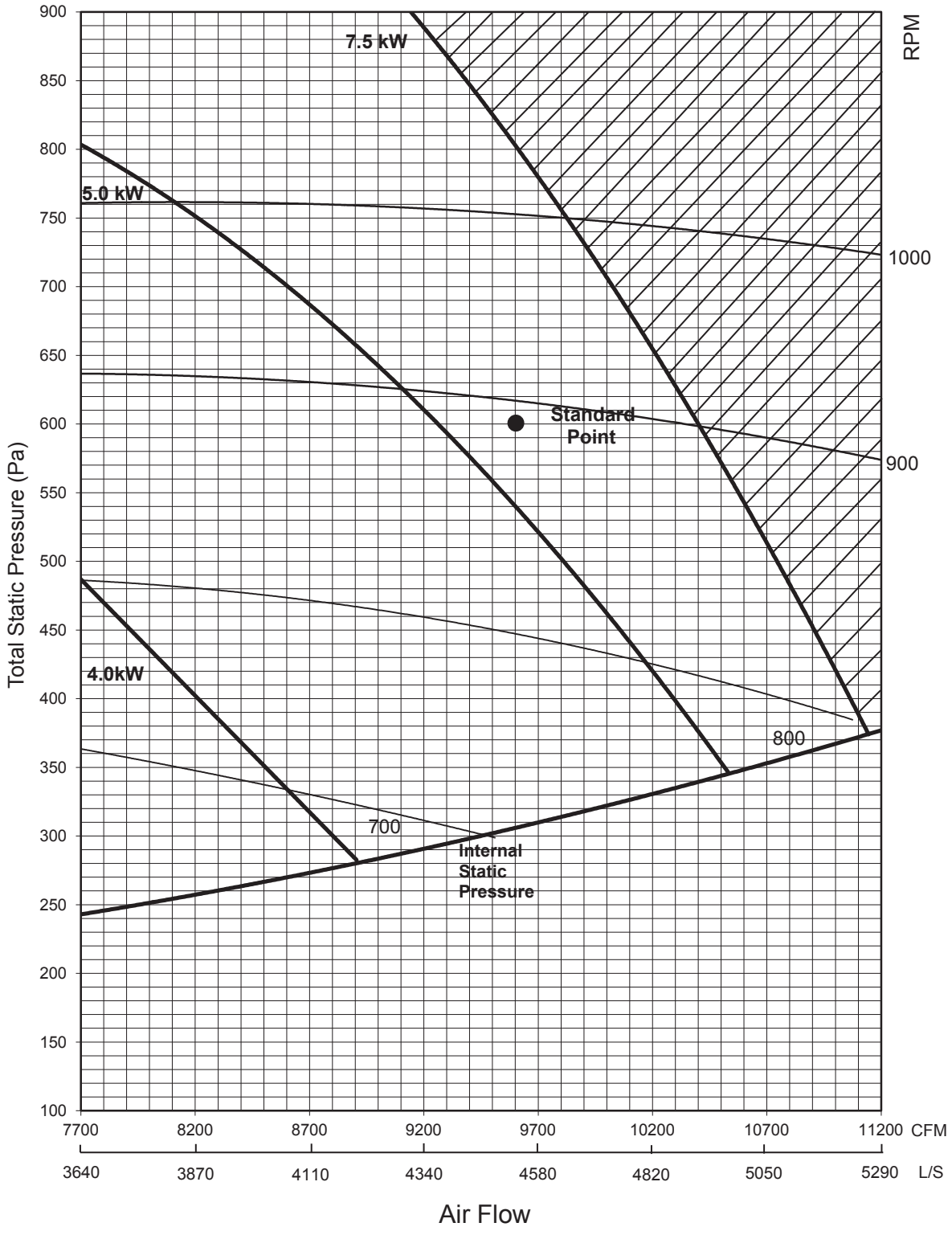

A4RT150A
RPM
1000
900
800
700
600
3.0 kW
2.2 kW
1.5 kW
Standard Point
Internal Static Pressure
Total Static Pressure (Pa)
500
450
400
350
300
250
200
150
100
50
0
4500
5000
5500
6000
6500
6800
CFM
2120
2360
2600
2830
3070
3200
L/S
Air Flow


A4RT200A
RPM
650
600
550
500
450
400
350
300
250
200
150
100
1200
1100
1000
900
800
700
3.7 kW
3.0 kW
Standard Point
Internal Static Pressure
Total Static Pressure (Pa)
5400
5900
6400
6900
7400
7900
CFM
2550
2780
3020
3260
3490
3730
L/S
Air Flow

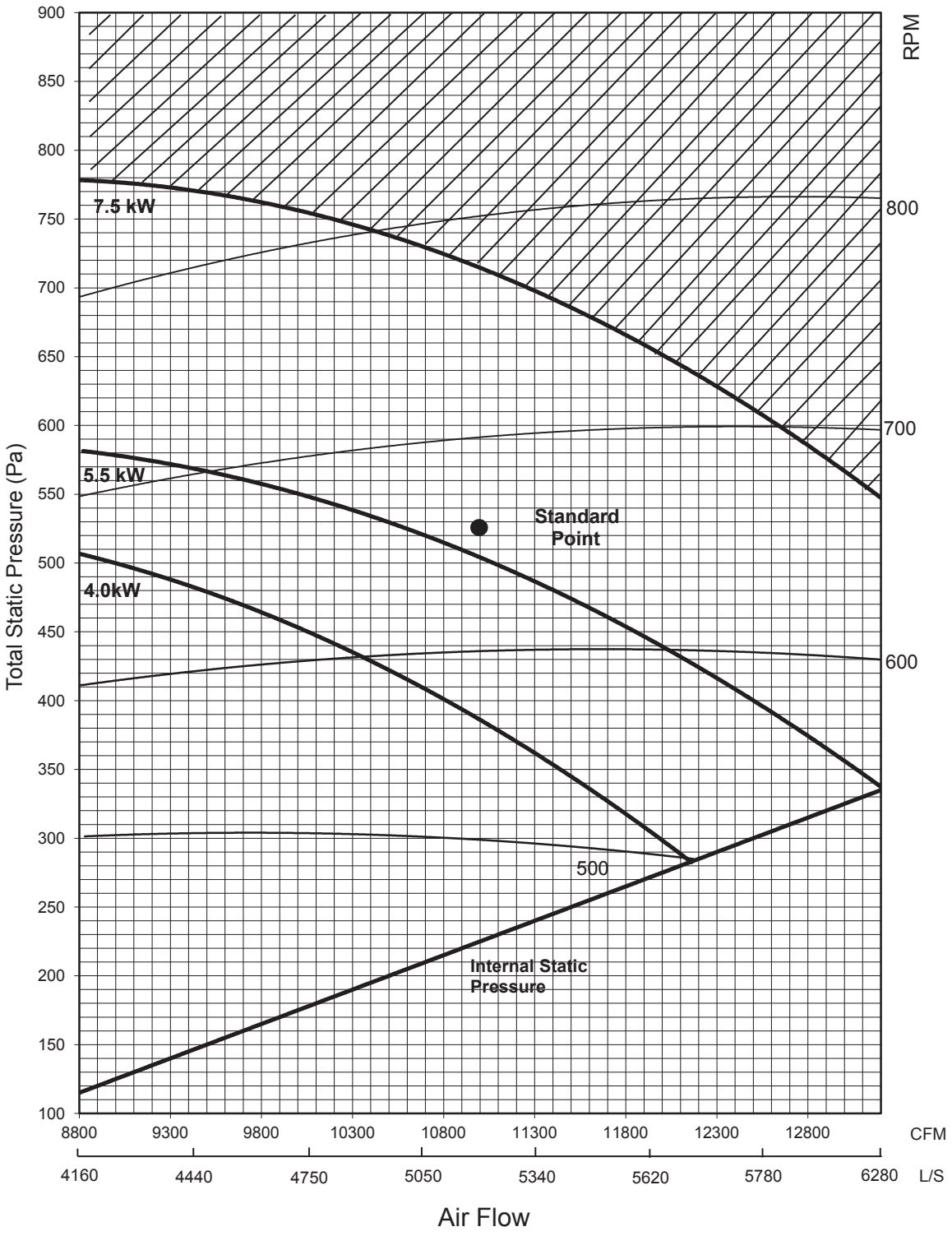
A4RT250A

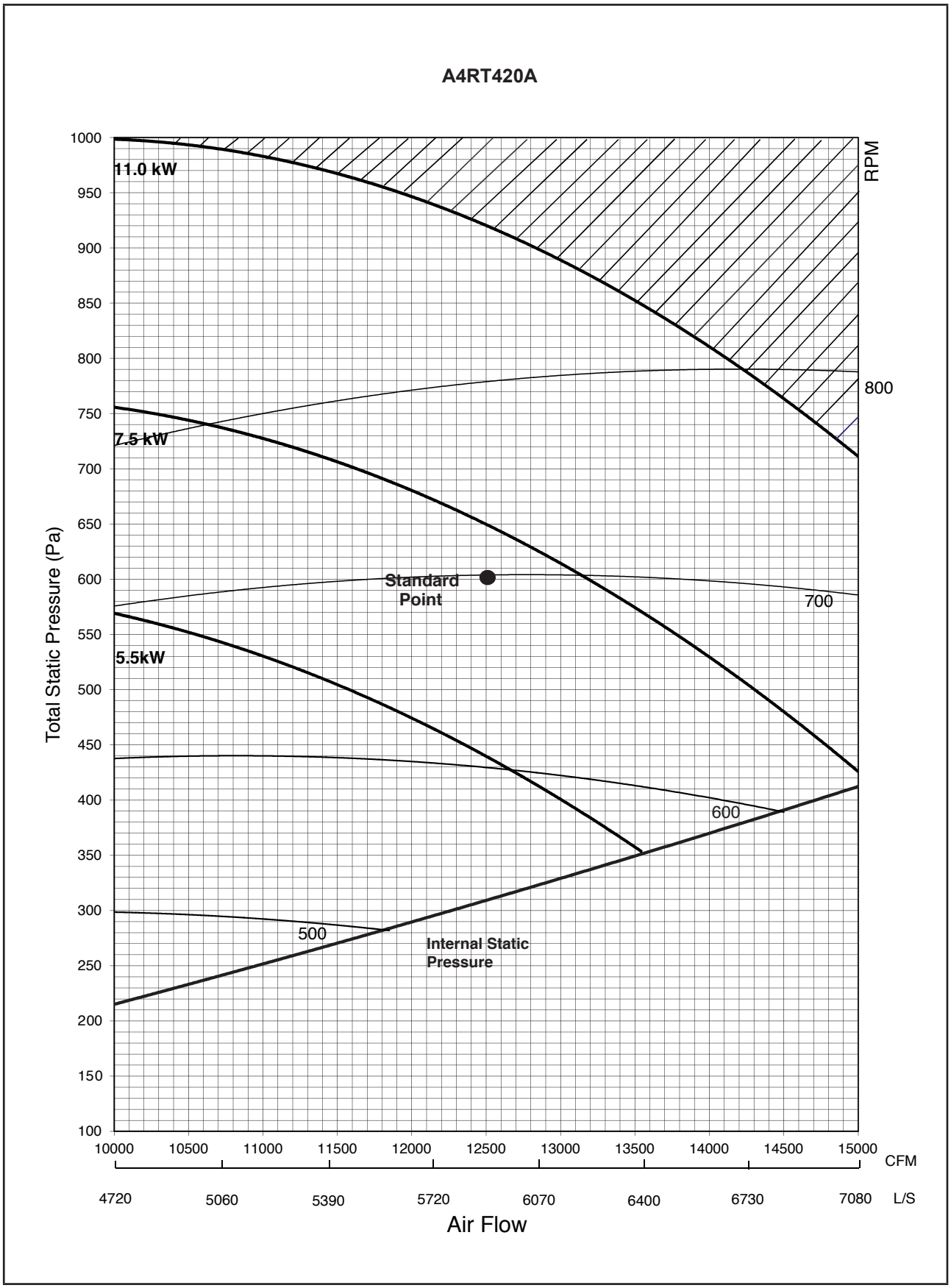

5.5 kW
4.0 kW
Standard Point
Internal Static Pressure
RPM
1000
900
800
700
600
Total Static Pressure (Pa)
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
6400
6900
7400
7900
8400
8900
9400
CFM
3020
3010
3450
3670
3880
4100
4300
4530
L/S
Air Flow

A4RT300A


7.5 kW
5.0 kW
4.0kW
Standard Point
Internal Static Pressure
700
800
900
1000
RPM
Total Static Pressure (Pa)
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
7700
8200
8700
9200
9700
10200
10700
11200 CFM
3640
3870
4110
4340
4580
4820
5050
5290 L/S
Air Flow

A4RT360A


Total Static Pressure (Pa)
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
RPM
800
700
600
500
7.5 kW
5.5 kW
4.0kW
Standard Point
Internal Static Pressure
8800
9300
9800
10300
10800
11300
11800
12300
12800
CFM
4160
4440
4750
5050
5340
5620
5780
6280
L/S
Air Flow


A4RT420A
Total Static Pressure (Pa)
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
11.0 kW
7.5 kW
5.5kW
RPM
800
700
600
500
Standard Point
Internal Static Pressure
10000
10500
11000
11500
12000
12500
13000
13500
14000
14500
15000
CFM
4720
5060
5390
5720
6070
6400
6730
7080
L/S
Air Flow

PERFORMANCE DATA

Calculation Steps

Interpolation method can be used to get the total capacity, TC and sensible capacity, SC and power input, PI at those temperatures which are not stated out in the table. Extrapolation method are not allowed to be used to get the TC, SC and PI.

Example:

Model: A4RT200A
Indoor Condition: 25°C DB, 17°C WB
Outdoor Condition: 37°C DB
Fan Speed: High (6710CFM)

Solution:
Overall
Based on the Performance Table

1. Refer to the Indoor DB column,
   - **25°C** is located between 24°C and 27°C for 16˚CWB (Thus, Interpolation need to be applied)
   - **25°C** is located between 24°C and 27°C for 19˚CWB (Thus, Interpolation need to be applied)
2. Refer to the Indoor WB column,
   - **17°C** is located between 16°CWB and 19°CWB for 25°CDB
     (Thus, Interpolation need to be applied)
3. Refer to the Outdoor DB column,
   - **37°C** is located between 35°C and 40°C. (Thus, Interpolation need to be applied)

Please follow the steps below in order to get the required capacity.

1st Step
Interpolation of Indoor DB
Find TC, SC, PI for
(a) Indoor: ***25°C DB,*** 16°C WB
Outdoor: 35°C DB
(b) Indoor: ***25°C DB,*** 19°C WB
Outdoor: 35°C DB
(c) Indoor: ***25°C DB,*** 16°C WB
Outdoor: 40°C DB
(d) Indoor: ***25°C DB,*** 19°C WB
Outdoor: 40°C DB

⇨

2nd Step
Interpolation of Indoor WB
Find TC, SC, PI for
(a) Indoor: 25°C DB, ***17°C WB***
Outdoor: 35°C DB
(b) Indoor: 25°C DB, ***17°C WB***
Outdoor: 40°C DB

⇨

3rd Step
Interpolation of Outdoor DB
Find TC, SC, PI for
(a) Indoor: 25°C DB, 17°C WB
Outdoor: ***37°C DB***

Details:

1st Step:

To obtain the Total capacity and Sensible capacity and Power input for

(a) Indoor Condition: *25˚C DB,* 16˚C WB
Outdoor Condition: 35°C DB

Indoor WB ˚C	Indoor DB ˚C	Outdoor DB, C			
			35		
			TC (kW)	SHC (kW)	PI (kW)
16					
	24		50.71	42.61	24.54
	25	----------	x_1	y_1	z_1
	27		51.74	48.78	24.66

Total capacity, TC

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{51.74kW - 50.71kW}{51.74kW - x_1 kW}$$

» $x_1 = 51.05kW$

Sensible capacity, SHC

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{48.78kW - 42.61kW}{48.78kW - y_1 kW}$$

» $y_1 = 44.67kW$

Power Input, PI

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{24.66kW - 24.54kW}{24.66kW - z_1 kW}$$

» $z_1 = 24.58kW$

(b) Indoor Condition: *25˚C DB,* 16˚C WB
Outdoor Condition: 40°C DB

Indoor WB ˚C	Indoor DB ˚C	Outdoor DB, C			
			40		
			TC (kW)	SHC (kW)	PI (kW)
16					
	24		45.64	39.02	26.54
	25	----------	x_2	y_2	z_2
	27		46.92	44.46	26.71

Total capacity, TC

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{46.92kW - 45.64kW}{46.92kW - x_2 kW}$$

» $x_2 = 46.07kW$

Sensible capacity, SHC

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{44.46kW - 39.02kW}{44.46kW - y_2 kW}$$

» $y_2 = 40.83kW$

Power Input, PI

Interpolation Method:

» $$\frac{27^{o}\,C - 24^{o}\,C}{27^{o}\,C - 25^{o}\,C} = \frac{26.71kW - 26.54kW}{26.71kW - z_2 kW}$$

» $z_2 = 26.60kW$

*** Repeat process (a) and (b) in 1st step for the condition below:**

(c) Indoor Condition: *25˚C DB,* 19˚C WB
Outdoor Condition: 35°C DB

» $x_3 = 55.52kW$
» $y_3 = 35.62kW$
» $z_3 = 25.08kW$

(d) Indoor Condition: *25˚C DB,* 19˚C WB
Outdoor Condition: 40°C DB

» $x_4 = 50.00kW$
» $y_4 = 32.61kW$
» $z_4 = 27.10kW$

2nd Step:

To obtain the Total capacity, Sensible capacity and Power Input for
(a) Indoor Condition: 25°C DB, ***17°C WB***
Outdoor Condition: 35°C DB

Indoor WB ˚C	Indoor DB ˚C	Outdoor DB, C			
			35		
			TC (kW)	SHC (kW)	PI (kW)
			¦	¦	
16	25		51.05	44.67	24.58
17		----------	x_5	y_5	z_5
19			55.52	35.62	25.08

Total capacity, TC

Interpolation Method:

» $\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{55.52kW - 51.05kW}{55.52kW - x_5 kW}$

» $x_5 = 52.54kW$

Sensible capacity, SHC

Interpolation Method:

» $\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{35.62kW - 44.67kW}{35.62kW - y_5 kW}$

» $y_5 = 41.65kW$

Power Input, PI

Interpolation Method:

» $\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{25.08kW - 24.58kW}{25.08kW - z_5 kW}$

» $z_5 = 24.75kW$

(b) Indoor Condition: 25°C DB, ***17°C WB***
Outdoor Condition: 40°C DB

Indoor WB ˚C	Indoor DB ˚C	Outdoor DB, ˚C			
			40		
			TC (kW)	SHC (kW)	PI (kW)
			⋮	⋮	
16	25		46.07	40.83	26.60
17		----------	x_6	y_6	z_6
19			50.00	32.61	27.10

Total capacity, TC

Interpolation Method:

» $$\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{50kW - 46.07kW}{50kW - x_6 kW}$$

» $x_6 = 47.38kW$

Sensible capacity, SHC

Interpolation Method:

» $$\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{32.61kW - 40.83kW}{32.61kW - y_6 kW}$$

» $y_6 = 38.09kW$

Power Input, PI

Interpolation Method:

» $$\frac{19ºC - 16ºC}{19ºC - 17ºC} = \frac{27.10kW - 26.60kW}{27.10kW - z_6 kW}$$

» $z_6 = 26.77kW$

3rd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 25°C DB, ***1°C WB***
Outdoor Condition: 37°C DB

Indoor WB ˚C	Indoor DB ˚C	Outdoor DB, ˚C									
			35			37			40		
			TC (kW)	SHC (kW)	PI (kW)	TC (kW)	SHC (kW)	PI (kW)	TC (kW)	SHC (kW)	PI (kW)
25	17	------	52.54	41.65	24.75	x	y	z	47.38	38.09	26.77

Total capacity, TC

Interpolation Method:

» $\frac{40^{o}\,C - 35^{o}\,C}{40^{o}\,C - 37^{o}C} = \frac{47.38kW - 52.54kW}{47.38kW - xkW}$

» x = 50.48kW

Sensible capacity, SHC

Interpolation Method:

» $\frac{40^{o}\,C - 35^{o}\,C}{40^{o}\,C - 37^{o}C} = \frac{38.09kW - 41.65kW}{38.09kW - ykW}$

» y = 40.23kW

Power Input, PI

Interpolation Method:

» $\frac{40^{o}\,C - 35^{o}\,C}{40^{o}\,C - 37^{o}C} = \frac{26.77kW - 24.75kW}{26.77kW - zkW}$

» z = 25.56kW

Performance Tables

R407C Cooling Only

Model: A4RT60A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
1620	16°C	21°C	17.09	11.25	4.62	16.54	11.00	4.94	15.97	10.74	5.31	15.35	10.46	5.73	13.81	9.55	6.20	12.83	9.03	6.82
		24°C	17.15	13.40	4.62	16.61	13.12	4.94	16.04	12.82	5.31	15.42	12.51	5.73	13.89	11.45	6.20	12.90	10.88	6.83
		27°C	17.22	15.42	4.63	16.69	15.13	4.95	16.13	14.82	5.32	15.56	14.44	5.74	14.08	13.15	6.22	13.22	12.35	6.86
		30°C	17.90	17.90	4.68	17.45	17.45	5.00	16.96	16.96	5.38	16.44	16.44	5.82	14.94	14.94	6.30	14.04	14.04	6.95
	19°C	24°C	18.77	10.63	4.74	18.19	10.40	5.06	17.56	10.15	5.43	16.90	9.89	5.86	15.22	9.04	6.33	14.16	8.58	6.96
		27°C	18.82	12.41	4.74	18.23	12.16	5.06	17.61	11.89	5.44	16.95	11.61	5.86	15.28	10.63	6.33	14.22	10.11	6.97
		30°C	18.89	15.15	4.74	18.30	14.87	5.07	17.67	14.59	5.44	17.00	14.28	5.87	15.33	13.13	6.34	14.27	12.55	6.97
		33°C	19.00	19.00	4.75	18.46	18.46	5.08	17.92	17.92	5.46	17.38	17.38	5.90	15.81	15.81	6.39	14.89	14.89	7.04
	22°C	27°C	20.60	9.98	4.87	19.95	9.76	5.19	19.27	9.54	5.57	18.55	9.30	6.00	16.73	8.51	6.48	15.58	8.08	7.11
		30°C	20.63	12.34	4.87	19.98	12.10	5.20	19.30	11.84	5.58	18.59	11.57	6.00	16.77	10.60	6.48	15.62	10.10	7.12
		33°C	20.68	14.38	4.87	20.04	14.12	5.20	19.36	13.86	5.58	18.65	13.58	6.01	16.82	12.49	6.49	15.68	11.95	7.12
		36°C	20.74	16.37	4.88	20.10	16.12	5.21	19.41	15.84	5.59	18.70	15.56	6.02	16.89	14.34	6.49	15.81	13.66	7.14
1800	16°C	21°C	17.45	11.70	4.65	16.89	11.45	4.96	16.28	11.18	5.33	15.65	10.87	5.75	14.08	9.92	6.22	13.07	9.37	6.85
		24°C	17.54	13.95	4.65	16.98	13.66	4.97	16.38	13.36	5.34	15.74	13.04	5.76	14.17	11.95	6.23	13.15	11.36	6.86
		27°C	17.66	16.17	4.66	17.13	15.82	4.98	16.60	15.41	5.36	16.06	14.93	5.79	14.57	13.61	6.27	13.67	12.80	6.91
		30°C	18.57	18.57	4.72	18.10	18.10	5.05	17.58	17.58	5.43	17.03	17.03	5.87	15.47	15.47	6.35	14.53	14.53	7.00
	19°C	24°C	19.15	11.04	4.76	18.55	10.81	5.09	17.90	10.56	5.46	17.21	10.30	5.88	15.50	9.43	6.36	14.41	8.95	6.99
		27°C	19.23	12.93	4.77	18.62	12.67	5.09	17.97	12.39	5.47	17.29	12.10	5.89	15.57	11.09	6.36	14.48	10.56	6.99
		30°C	19.31	15.86	4.77	18.70	15.58	5.10	18.04	15.28	5.47	17.37	14.98	5.90	15.66	13.77	6.37	14.60	13.09	7.01
		33°C	19.62	19.62	4.80	19.12	19.12	5.13	18.59	18.59	5.52	18.02	18.02	5.95	16.38	16.38	6.44	15.42	15.42	7.10
	22°C	27°C	20.99	10.37	4.89	20.32	10.15	5.22	19.62	9.92	5.60	18.88	9.68	6.03	17.02	8.87	6.51	15.84	8.44	7.14
		30°C	21.04	12.88	4.90	20.37	12.62	5.23	19.67	12.35	5.61	18.94	12.07	6.04	17.08	11.07	6.51	15.90	10.56	7.15
		33°C	21.12	15.06	4.90	20.46	14.80	5.24	19.75	14.52	5.61	19.01	14.24	6.04	17.14	13.10	6.52	15.97	12.55	7.16
		36°C	21.20	17.22	4.91	20.53	16.95	5.24	19.83	16.65	5.62	19.15	16.30	6.06	17.35	15.07	6.54	16.32	14.36	7.20
1980	16°C	21°C	17.75	12.02	4.67	17.17	11.74	4.98	16.56	11.44	5.35	15.91	11.13	5.77	14.31	10.15	6.24	13.27	9.59	6.87
		24°C	17.87	14.32	4.67	17.29	14.04	4.99	16.67	13.73	5.36	16.02	13.41	5.78	14.40	12.28	6.25	13.36	11.69	6.88
		27°C	18.12	16.69	4.69	17.61	16.42	5.02	17.10	16.10	5.40	16.54	15.73	5.83	14.99	14.30	6.31	14.06	13.48	6.95
		30°C	19.17	19.17	4.76	18.66	18.66	5.10	18.13	18.13	5.48	17.55	17.55	5.91	15.93	15.93	6.40	14.96	14.96	7.05
	19°C	24°C	19.47	11.56	4.79	18.85	11.32	5.11	18.18	11.07	5.48	17.47	10.80	5.91	15.73	9.87	6.38	14.62	9.35	7.01
		27°C	19.57	13.53	4.79	18.95	13.26	5.12	18.28	12.98	5.49	17.57	12.68	5.92	15.82	11.63	6.39	14.70	11.08	7.02
		30°C	19.68	16.67	4.80	19.03	16.38	5.13	18.38	16.07	5.50	17.69	15.73	5.93	15.99	14.38	6.41	14.97	13.58	7.05
		33°C	20.25	20.25	4.84	19.73	19.73	5.18	19.18	19.18	5.57	18.59	18.59	6.01	16.89	16.89	6.49	15.89	15.89	7.15
	22°C	27°C	21.33	10.85	4.92	20.64	10.62	5.25	19.91	10.39	5.63	19.15	10.16	6.06	17.26	9.31	6.53	16.06	8.86	7.17
		30°C	21.40	13.49	4.92	20.71	13.22	5.25	19.99	12.95	5.63	19.24	12.66	6.06	17.34	11.62	6.54	16.14	11.08	7.17
		33°C	21.50	15.84	4.93	20.81	15.57	5.26	20.08	15.29	5.64	19.32	15.00	6.07	17.41	13.81	6.55	16.21	13.24	7.18
		36°C	21.61	18.14	4.94	20.96	17.81	5.27	20.30	17.42	5.66	19.64	16.96	6.10	17.86	15.60	6.59	16.82	14.81	7.25

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT80A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
2543	16°C	21°C	20.85	14.51	6.82	20.19	14.19	7.29	19.49	13.85	7.84	18.73	13.49	8.46	16.86	12.32	9.15	15.66	11.65	10.08
		24°C	20.93	17.28	6.83	20.27	16.92	7.30	19.57	16.54	7.85	18.82	16.14	8.47	16.95	14.77	9.16	15.74	14.04	10.09
		27°C	21.01	19.90	6.84	20.37	19.52	7.31	19.68	19.12	7.86	18.99	18.63	8.48	17.19	16.96	9.19	16.13	15.93	10.14
		30°C	21.84	21.84	6.91	21.29	21.29	7.39	20.70	20.70	7.95	20.07	20.07	8.59	18.23	18.23	9.31	17.14	17.14	10.26
	19°C	24°C	22.91	13.71	7.00	22.20	13.41	7.47	21.43	13.09	8.02	20.62	12.76	8.65	18.58	11.66	9.35	17.27	11.07	10.28
		27°C	22.97	16.01	7.00	22.25	15.69	7.48	21.49	15.34	8.03	20.69	14.97	8.66	18.65	13.71	9.36	17.35	13.05	10.29
		30°C	23.06	19.54	7.01	22.33	19.19	7.49	21.56	18.82	8.04	20.75	18.42	8.67	18.71	16.94	9.37	17.42	16.19	10.30
		33°C	23.19	23.19	7.02	22.53	22.53	7.50	21.87	21.87	8.07	21.21	21.21	8.71	19.29	19.29	9.44	18.17	18.17	10.40
	22°C	27°C	25.14	12.88	7.19	24.34	12.60	7.67	23.51	12.30	8.23	22.64	12.00	8.86	20.42	10.97	9.57	19.01	10.42	10.51
		30°C	25.17	15.92	7.19	24.38	15.60	7.68	23.56	15.28	8.24	22.69	14.92	8.87	20.46	13.68	9.57	19.06	13.03	10.51
		33°C	25.24	18.55	7.20	24.45	18.22	7.68	23.63	17.88	8.24	22.76	17.51	8.88	20.53	16.11	9.58	19.13	15.41	10.52
		36°C	25.31	21.12	7.20	24.52	20.79	7.69	23.69	20.44	8.25	22.82	20.08	8.89	20.61	18.49	9.59	19.30	17.63	10.55
2826	16°C	21°C	21.29	15.09	6.86	20.61	14.77	7.33	19.87	14.42	7.88	19.10	14.03	8.50	17.19	12.79	9.19	15.95	12.09	10.11
		24°C	21.40	17.99	6.87	20.72	17.63	7.34	19.99	17.24	7.89	19.21	16.83	8.51	17.29	15.41	9.20	16.04	14.65	10.13
		27°C	21.55	20.86	6.88	20.91	20.41	7.36	20.26	19.88	7.91	19.60	19.26	8.55	17.78	17.56	9.26	16.68	16.52	10.20
		30°C	22.67	22.67	6.98	22.08	22.08	7.46	21.46	21.46	8.03	20.79	20.79	8.67	18.87	18.87	9.39	17.74	17.74	10.34
	19°C	24°C	23.38	14.25	7.04	22.64	13.95	7.51	21.84	13.63	8.07	21.00	13.29	8.69	18.91	12.16	9.39	17.59	11.55	10.32
		27°C	23.46	16.68	7.04	22.72	16.34	7.52	21.93	15.99	8.07	21.10	15.61	8.70	19.01	14.31	9.40	17.68	13.62	10.33
		30°C	23.57	20.46	7.05	22.82	20.10	7.53	22.02	19.72	8.09	21.19	19.32	8.71	19.11	17.76	9.41	17.82	16.89	10.35
		33°C	23.94	23.94	7.08	23.33	23.33	7.58	22.68	22.68	8.15	22.00	22.00	8.80	19.99	19.99	9.52	18.82	18.82	10.48
	22°C	27°C	25.62	13.38	7.23	24.80	13.09	7.72	23.94	12.80	8.28	23.04	12.49	8.91	20.77	11.44	9.61	19.33	10.89	10.55
		30°C	25.68	16.61	7.23	24.86	16.28	7.72	24.01	15.94	8.28	23.11	15.58	8.92	20.84	14.29	9.62	19.41	13.62	10.56
		33°C	25.78	19.43	7.24	24.96	19.09	7.73	24.10	18.74	8.29	23.20	18.37	8.93	20.92	16.91	9.63	19.49	16.19	10.57
		36°C	25.87	22.21	7.25	25.05	21.87	7.74	24.20	21.48	8.30	23.37	21.03	8.94	21.18	19.44	9.66	19.91	18.53	10.63
3109	16°C	21°C	21.67	15.51	6.89	20.96	15.15	7.36	20.21	14.76	7.91	19.42	14.36	8.53	17.46	13.09	9.22	16.20	12.37	10.15
		24°C	21.81	18.48	6.90	21.10	18.11	7.38	20.35	17.71	7.92	19.55	17.30	8.54	17.58	15.85	9.23	16.31	15.08	10.16
		27°C	22.11	21.54	6.93	21.50	21.18	7.41	20.86	20.77	7.97	20.19	20.19	8.61	18.30	18.30	9.32	17.16	17.16	10.27
		30°C	23.40	23.40	7.04	22.78	22.78	7.53	22.12	22.12	8.09	21.42	21.42	8.73	19.44	19.44	9.45	18.26	18.26	10.41
	19°C	24°C	23.77	14.91	7.07	23.00	14.61	7.55	22.18	14.28	8.10	21.32	13.93	8.72	19.20	12.73	9.42	17.84	12.06	10.35
		27°C	23.89	17.45	7.08	23.12	17.11	7.56	22.30	16.74	8.11	21.44	16.36	8.74	19.31	15.00	9.44	17.94	14.29	10.37
		30°C	24.01	21.51	7.09	23.23	21.13	7.57	22.43	20.74	8.12	21.59	20.29	8.75	19.51	18.55	9.46	18.26	17.52	10.41
		33°C	24.72	24.72	7.15	24.08	24.08	7.65	23.40	23.40	8.22	22.68	22.68	8.87	20.61	20.61	9.59	19.39	19.39	10.56
	22°C	27°C	26.03	13.99	7.26	25.18	13.71	7.75	24.30	13.41	8.31	23.38	13.10	8.94	21.07	12.02	9.65	19.60	11.43	10.58
		30°C	26.11	17.40	7.27	25.27	17.06	7.76	24.40	16.70	8.32	23.48	16.33	8.96	21.16	14.99	9.66	19.70	14.30	10.60
		33°C	26.24	20.44	7.28	25.39	20.09	7.77	24.51	19.73	8.33	23.58	19.35	8.97	21.25	17.82	9.67	19.78	17.08	10.61
		36°C	26.37	23.41	7.30	25.58	22.97	7.79	24.77	22.47	8.36	23.97	21.88	9.01	21.79	20.12	9.74	20.53	19.11	10.71

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT100A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
3179	16°C	21°C	27.51	19.66	9.10	26.64	19.23	9.72	25.71	18.77	10.45	24.72	18.28	11.28	22.24	16.69	12.20	20.66	15.79	13.43
		24°C	27.62	23.42	9.11	26.75	22.93	9.74	25.82	22.42	10.46	24.84	21.87	11.29	22.36	20.02	12.21	20.77	19.02	13.45
		27°C	27.72	26.96	9.12	26.87	26.46	9.75	25.97	25.91	10.48	25.05	25.05	11.31	22.68	22.68	12.25	21.28	21.28	13.51
		30°C	28.82	28.82	9.21	28.09	28.09	9.86	27.31	27.31	10.61	26.47	26.47	11.46	24.05	24.05	12.41	22.61	22.61	13.69
	19°C	24°C	30.23	18.58	9.33	29.29	18.17	9.96	28.28	17.74	10.70	27.21	17.29	11.53	24.51	15.81	12.47	22.79	15.00	13.71
		27°C	30.30	21.70	9.33	29.36	21.26	9.97	28.36	20.79	10.71	27.30	20.29	11.54	24.60	18.58	12.48	22.89	17.68	13.72
		30°C	30.42	26.48	9.34	29.46	26.00	9.98	28.45	25.50	10.72	27.38	24.97	11.56	24.69	22.95	12.49	22.98	21.95	13.73
		33°C	30.60	30.60	9.36	29.72	29.72	10.01	28.86	28.86	10.76	27.99	27.99	11.62	25.45	25.45	12.58	23.97	23.97	13.86
	22°C	27°C	33.16	17.45	9.58	32.12	17.07	10.23	31.02	16.67	10.98	29.88	16.26	11.82	26.95	14.87	12.76	25.09	14.13	14.01
		30°C	33.21	21.57	9.59	32.17	21.15	10.24	31.08	20.70	10.98	29.93	20.22	11.83	27.00	18.54	12.77	25.15	17.66	14.02
		33°C	33.30	25.14	9.59	32.26	24.69	10.25	31.17	24.22	10.99	30.02	23.73	11.84	27.09	21.83	12.78	25.24	20.89	14.03
		36°C	33.40	28.63	9.60	32.36	28.17	10.25	31.25	27.70	11.00	30.11	27.21	11.85	27.20	25.06	12.79	25.46	23.89	14.06
3532	16°C	21°C	28.09	20.46	9.15	27.19	20.02	9.77	26.22	19.54	10.50	25.20	19.01	11.33	22.68	17.34	12.25	21.05	16.39	13.48
		24°C	28.24	24.38	9.16	27.34	23.89	9.79	26.38	23.36	10.51	25.35	22.80	11.34	22.81	20.88	12.27	21.17	19.86	13.50
		27°C	28.43	28.27	9.18	27.59	27.59	9.81	26.73	26.73	10.55	25.86	25.86	11.39	23.46	23.46	12.34	22.00	22.00	13.61
		30°C	29.91	29.91	9.30	29.14	29.14	9.95	28.31	28.31	10.70	27.43	27.43	11.56	24.90	24.90	12.51	23.40	23.40	13.79
	19°C	24°C	30.84	19.31	9.38	29.87	18.90	10.02	28.82	18.47	10.75	27.71	18.01	11.59	24.95	16.48	12.52	23.20	15.65	13.76
		27°C	30.96	22.60	9.39	29.98	22.15	10.03	28.94	21.66	10.77	27.84	21.16	11.60	25.08	19.39	12.53	23.32	18.46	13.77
		30°C	31.10	27.72	9.40	30.11	27.23	10.04	29.06	26.72	10.78	27.96	26.18	11.62	25.21	24.07	12.55	23.51	22.89	13.80
		33°C	31.59	31.59	9.44	30.78	30.78	10.10	29.93	29.93	10.87	29.02	29.02	11.73	26.38	26.38	12.69	24.83	24.83	13.98
	22°C	27°C	33.80	18.13	9.64	32.72	17.74	10.29	31.59	17.34	11.03	30.40	16.92	11.88	27.40	15.50	12.82	25.51	14.75	14.07
		30°C	33.88	22.51	9.65	32.80	22.06	10.30	31.68	21.60	11.04	30.49	21.11	11.89	27.49	19.36	12.83	25.61	18.45	14.08
		33°C	34.01	26.33	9.66	32.94	25.87	10.31	31.80	25.39	11.06	30.61	24.89	11.90	27.60	22.91	12.84	25.71	21.94	14.09
		36°C	34.13	30.10	9.67	33.05	29.64	10.32	31.93	29.11	11.07	30.83	28.49	11.93	27.94	26.34	12.88	26.28	25.11	14.17
3885	16°C	21°C	28.59	21.01	9.19	27.65	20.53	9.82	26.66	20.01	10.54	25.62	19.46	11.37	23.04	17.74	12.29	21.37	16.77	13.53
		24°C	28.77	25.04	9.21	27.84	24.54	9.83	26.85	24.00	10.56	25.79	23.44	11.39	23.19	21.47	12.31	21.52	20.44	13.55
		27°C	29.17	29.17	9.24	28.36	28.36	9.88	27.53	27.53	10.63	26.63	26.63	11.47	24.14	24.14	12.42	22.63	22.63	13.69
		30°C	30.87	30.87	9.38	30.05	30.05	10.04	29.19	29.19	10.79	28.27	28.27	11.65	25.65	25.65	12.60	24.09	24.09	13.88
	19°C	24°C	31.36	20.21	9.43	30.35	19.79	10.06	29.27	19.35	10.80	28.13	18.88	11.63	25.33	17.25	12.56	23.53	16.35	13.80
		27°C	31.52	23.65	9.44	30.51	23.19	10.08	29.43	22.69	10.82	28.29	22.17	11.65	25.47	20.32	12.58	23.67	19.37	13.82
		30°C	31.68	29.15	9.45	30.65	28.64	10.09	29.59	28.10	10.83	28.49	27.50	11.67	25.74	25.14	12.61	24.10	23.74	13.88
		33°C	32.61	32.61	9.53	31.77	31.77	10.20	30.88	30.88	10.96	29.93	29.93	11.83	27.19	27.19	12.79	25.58	25.58	14.08
	22°C	27°C	34.34	18.96	9.69	33.23	18.57	10.34	32.06	18.17	11.08	30.84	17.75	11.93	27.79	16.28	12.86	25.86	15.49	14.11
		30°C	34.45	23.58	9.70	33.35	23.12	10.35	32.19	22.64	11.10	30.97	22.13	11.94	27.92	20.31	12.88	25.99	19.37	14.13
		33°C	34.62	27.69	9.71	33.50	27.22	10.36	32.33	26.73	11.11	31.11	26.22	11.96	28.04	24.14	12.90	26.10	23.14	14.15
		36°C	34.79	31.72	9.73	33.75	31.13	10.39	32.69	30.44	11.15	31.63	29.65	12.02	28.75	27.26	12.99	27.09	25.89	14.28

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT120A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
3240	16°C	21°C	31.86	22.47	9.55	30.85	21.98	10.21	29.78	21.45	10.97	28.63	20.89	11.84	25.76	19.07	12.81	23.93	18.04	14.11
		24°C	31.98	26.77	9.56	30.97	26.21	10.22	29.90	25.62	10.98	28.76	25.00	11.85	25.90	22.88	12.83	24.05	21.74	14.12
		27°C	32.10	30.81	9.58	31.12	30.24	10.23	30.08	29.61	11.00	29.01	28.85	11.88	26.26	26.26	12.86	24.64	24.64	14.19
		30°C	33.37	33.37	9.67	32.53	32.53	10.35	31.63	31.63	11.14	30.66	30.66	12.03	27.85	27.85	13.03	26.19	26.19	14.37
	19°C	24°C	35.00	21.23	9.80	33.92	20.77	10.46	32.75	20.28	11.23	31.51	19.76	12.11	28.39	18.06	13.09	26.39	17.14	14.39
		27°C	35.09	24.80	9.80	34.00	24.29	10.47	32.84	23.76	11.24	31.61	23.19	12.12	28.49	21.24	13.10	26.51	20.20	14.40
		30°C	35.23	30.26	9.81	34.12	29.72	10.48	32.95	29.14	11.26	31.70	28.53	12.13	28.59	26.23	13.11	26.61	25.08	14.42
		33°C	35.43	35.43	9.83	34.42	34.42	10.51	33.42	33.42	11.30	32.42	32.42	12.20	29.48	29.48	13.21	27.76	27.76	14.56
	22°C	27°C	38.41	19.95	10.06	37.19	19.51	10.74	35.93	19.05	11.53	34.60	18.58	12.41	31.20	17.00	13.40	29.05	16.14	14.71
		30°C	38.46	24.65	10.07	37.25	24.17	10.75	35.99	23.66	11.53	34.66	23.11	12.42	31.27	21.19	13.40	29.13	20.18	14.72
		33°C	38.57	28.73	10.07	37.36	28.22	10.76	36.10	27.68	11.54	34.77	27.12	12.43	31.37	24.95	13.42	29.23	23.87	14.73
		36°C	38.68	32.71	10.08	37.47	32.20	10.77	36.19	31.65	11.55	34.87	31.09	12.44	31.49	28.64	13.43	29.49	27.30	14.76
3600	16°C	21°C	32.53	23.38	9.61	31.49	22.88	10.26	30.36	22.33	11.03	29.18	21.72	11.89	26.26	19.81	12.86	24.37	18.73	14.16
		24°C	32.70	27.87	9.62	31.66	27.30	10.28	30.55	26.70	11.04	29.36	26.06	11.91	26.42	23.86	12.88	24.51	22.69	14.18
		27°C	32.93	32.31	9.64	31.95	31.61	10.30	30.95	30.79	11.08	29.95	29.83	11.96	27.16	27.16	12.96	25.48	25.48	14.29
		30°C	34.63	34.63	9.77	33.74	33.74	10.45	32.78	32.78	11.24	31.76	31.76	12.14	28.84	28.84	13.14	27.10	27.10	14.48
	19°C	24°C	35.72	22.07	9.85	34.59	21.60	10.52	33.37	21.11	11.29	32.09	20.59	12.17	28.90	18.83	13.14	26.87	17.89	14.45
		27°C	35.85	25.83	9.86	34.72	25.31	10.53	33.51	24.76	11.30	32.24	24.18	12.18	29.04	22.16	13.16	27.01	21.10	14.46
		30°C	36.02	31.68	9.87	34.86	31.12	10.54	33.65	30.53	11.32	32.38	29.92	12.20	29.19	27.50	13.18	27.22	26.16	14.49
		33°C	36.58	36.58	9.92	35.64	35.64	10.61	34.66	34.66	11.41	33.61	33.61	12.31	30.55	30.55	13.33	28.75	28.75	14.68
	22°C	27°C	39.15	20.72	10.12	37.89	20.28	10.80	36.58	19.82	11.59	35.20	19.34	12.47	31.73	17.72	13.46	29.54	16.86	14.77
		30°C	39.24	25.73	10.13	37.99	25.21	10.81	36.69	24.68	11.60	35.31	24.12	12.48	31.84	22.12	13.47	29.65	21.09	14.78
		33°C	39.39	30.09	10.14	38.14	29.56	10.83	36.83	29.02	11.61	35.45	28.44	12.50	31.97	26.18	13.48	29.77	25.07	14.80
		36°C	39.53	34.40	10.15	38.27	33.87	10.84	36.98	33.26	11.63	35.70	32.56	12.52	32.36	30.10	13.53	30.43	28.70	14.88
3960	16°C	21°C	33.11	24.01	9.65	32.02	23.46	10.31	30.88	22.86	11.07	29.67	22.24	11.94	26.68	20.27	12.91	24.75	19.16	14.20
		24°C	33.32	28.62	9.67	32.24	28.04	10.33	31.09	27.43	11.09	29.87	26.79	11.96	26.86	24.54	12.93	24.92	23.36	14.22
		27°C	33.79	33.35	9.70	32.85	32.80	10.37	31.88	31.88	11.16	30.84	30.84	12.05	27.96	27.96	13.04	26.21	26.21	14.37
		30°C	35.75	35.75	9.85	34.80	34.80	10.54	33.80	33.80	11.33	32.73	32.73	12.23	29.71	29.71	13.23	27.90	27.90	14.57
	19°C	24°C	36.31	23.09	9.90	35.14	22.62	10.57	33.90	22.12	11.34	32.58	21.58	12.21	29.33	19.72	13.19	27.25	18.68	14.49
		27°C	36.50	27.03	9.91	35.33	26.50	10.58	34.08	25.93	11.36	32.77	25.33	12.23	29.50	23.23	13.21	27.41	22.13	14.51
		30°C	36.69	33.31	9.93	35.49	32.73	10.60	34.27	32.11	11.37	32.99	31.42	12.25	29.81	28.73	13.24	27.91	27.13	14.57
		33°C	37.76	37.76	10.01	36.79	36.79	10.71	35.76	35.76	11.51	34.66	34.66	12.42	31.49	31.49	13.43	29.62	29.62	14.78
	22°C	27°C	39.77	21.67	10.17	38.48	21.23	10.85	37.13	20.76	11.64	35.72	20.29	12.52	32.19	18.61	13.51	29.95	17.71	14.82
		30°C	39.90	26.95	10.18	38.62	26.42	10.87	37.28	25.87	11.65	35.87	25.29	12.54	32.33	23.21	13.52	30.09	22.14	14.84
		33°C	40.09	31.65	10.20	38.80	31.11	10.88	37.45	30.55	11.67	36.03	29.96	12.56	32.47	27.59	13.54	30.23	26.44	14.86
		36°C	40.29	36.25	10.21	39.08	35.58	10.91	37.85	34.79	11.71	36.63	33.89	12.62	33.30	31.16	13.64	31.37	29.59	15.00

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT150A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
5086	16°C	21°C	40.55	27.84	13.49	39.26	27.22	14.42	37.90	26.57	15.50	36.43	25.88	16.72	32.78	23.63	18.09	30.45	22.35	19.92
		24°C	40.70	33.16	13.51	39.42	32.47	14.43	38.06	31.74	15.51	36.60	30.96	16.74	32.96	28.34	18.11	30.61	26.93	19.94
		27°C	40.85	38.16	13.52	39.61	37.45	14.45	38.28	36.68	15.53	36.92	35.74	16.77	33.42	32.54	18.17	31.36	30.56	20.04
		30°C	42.47	42.47	13.65	41.40	41.40	14.61	40.25	40.25	15.73	39.02	39.02	16.99	35.44	35.44	18.40	33.33	33.33	20.29
	19°C	24°C	44.55	26.30	13.83	43.16	25.73	14.77	41.68	25.12	15.86	40.11	24.48	17.10	36.13	22.38	18.48	33.59	21.23	20.33
		27°C	44.66	30.72	13.84	43.27	30.09	14.79	41.79	29.43	15.88	40.23	28.72	17.11	36.26	26.31	18.50	33.73	25.03	20.34
		30°C	44.83	37.49	13.86	43.42	36.81	14.80	41.93	36.10	15.90	40.35	35.34	17.13	36.38	32.49	18.52	33.87	31.07	20.36
		33°C	45.09	45.09	13.88	43.81	43.81	14.84	42.53	42.53	15.95	41.25	41.25	17.23	37.51	37.51	18.65	35.33	35.33	20.56
	22°C	27°C	48.88	24.71	14.21	47.33	24.16	15.17	45.72	23.60	16.28	44.03	23.01	17.53	39.71	21.05	18.92	36.97	20.00	20.78
		30°C	48.94	30.54	14.21	47.40	29.93	15.18	45.81	29.30	16.28	44.12	28.63	17.53	39.79	26.24	18.93	37.07	25.00	20.79
		33°C	49.08	35.59	14.23	47.55	34.95	15.19	45.94	34.29	16.30	44.25	33.60	17.55	39.92	30.90	18.95	37.20	29.56	20.81
		36°C	49.22	40.52	14.24	47.69	39.88	15.21	46.06	39.21	16.32	44.38	38.51	17.57	40.08	35.48	18.97	37.53	33.81	20.85
5651	16°C	21°C	41.40	28.96	13.56	40.07	28.34	14.49	38.64	27.66	15.57	37.13	26.91	16.80	33.42	24.54	18.16	31.02	23.20	19.99
		24°C	41.61	34.52	13.58	40.29	33.82	14.51	38.87	33.07	15.59	37.36	32.28	16.82	33.62	29.56	18.19	31.20	28.11	20.02
		27°C	41.90	40.02	13.61	40.66	39.16	14.55	39.39	38.14	15.64	38.12	36.95	16.90	34.57	33.68	18.30	32.43	31.69	20.17
		30°C	44.08	44.08	13.79	42.94	42.94	14.75	41.72	41.72	15.87	40.42	40.42	17.14	36.70	36.70	18.55	34.49	34.49	20.44
	19°C	24°C	45.45	27.33	13.91	44.02	26.76	14.85	42.47	26.14	15.95	40.84	25.50	17.18	36.78	23.33	18.56	34.19	22.16	20.40
		27°C	45.63	31.99	13.92	44.19	31.35	14.87	42.65	30.67	15.96	41.03	29.95	17.20	36.96	27.45	18.58	34.37	26.14	20.42
		30°C	45.83	39.24	13.94	44.37	38.55	14.89	42.82	37.82	15.98	41.21	37.07	17.22	37.15	34.07	18.61	34.65	32.40	20.47
		33°C	46.55	46.55	14.00	45.36	45.36	14.98	44.11	44.11	16.11	42.77	42.77	17.39	38.88	38.88	18.82	36.59	36.59	20.72
	22°C	27°C	49.82	25.66	14.29	48.22	25.12	15.26	46.56	24.55	16.36	44.80	23.96	17.61	40.39	21.94	19.00	37.59	20.88	20.86
		30°C	49.94	31.87	14.30	48.35	31.23	15.27	46.69	30.57	16.37	44.94	29.88	17.63	40.52	27.40	19.02	37.74	26.12	20.87
		33°C	50.13	37.27	14.32	48.54	36.62	15.29	46.87	35.94	16.40	45.11	35.23	17.65	40.68	32.43	19.04	37.89	31.06	20.90
		36°C	50.30	42.61	14.34	48.71	41.95	15.31	47.06	41.20	16.42	45.43	40.33	17.68	41.18	37.28	19.10	38.72	35.55	21.01
6216	16°C	21°C	42.13	29.74	13.63	40.75	29.06	14.56	39.29	28.32	15.63	37.76	27.54	16.86	33.96	25.11	18.23	31.50	23.74	20.06
		24°C	42.40	35.45	13.65	41.02	34.73	14.58	39.57	33.98	15.66	38.01	33.18	16.89	34.18	30.40	18.26	31.72	28.94	20.08
		27°C	43.00	41.31	13.70	41.80	40.64	14.65	40.57	39.84	15.76	39.25	38.94	17.01	35.58	35.40	18.42	33.36	33.36	20.30
		30°C	45.49	45.49	13.91	44.29	44.29	14.88	43.02	43.02	16.00	41.66	41.66	17.27	37.81	37.81	18.69	35.51	35.51	20.58
	19°C	24°C	46.21	28.60	13.98	44.72	28.02	14.92	43.14	27.40	16.01	41.46	26.73	17.25	37.33	24.42	18.63	34.68	23.14	20.47
		27°C	46.45	33.48	14.00	44.96	32.82	14.94	43.37	32.12	16.04	41.70	31.38	17.27	37.54	28.77	18.66	34.89	27.41	20.50
		30°C	46.69	41.26	14.02	45.17	40.54	14.97	43.61	39.78	16.06	41.99	38.92	17.30	37.94	35.59	18.70	35.52	33.60	20.58
		33°C	48.06	48.06	14.14	46.82	46.82	15.12	45.51	45.51	16.25	44.11	44.11	17.54	40.07	40.07	18.97	37.70	37.70	20.87
	22°C	27°C	50.61	26.84	14.36	48.97	26.29	15.33	47.25	25.72	16.43	45.45	25.13	17.68	40.96	23.05	19.07	38.11	21.93	20.92
		30°C	50.78	33.38	14.38	49.15	32.73	15.35	47.44	32.04	16.45	45.65	31.33	17.70	41.15	28.75	19.10	38.30	27.42	20.95
		33°C	51.02	39.20	14.40	49.37	38.54	15.37	47.65	37.84	16.48	45.85	37.11	17.73	41.32	34.18	19.12	38.47	32.76	20.98
		36°C	51.28	44.90	14.42	49.74	44.07	15.40	48.17	43.10	16.53	46.61	41.97	17.82	42.38	38.60	19.26	39.92	36.65	21.18

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT200A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
6039	16°C	21°C	55.03	36.75	19.69	53.29	35.94	21.04	51.44	35.08	22.61	49.45	34.17	24.40	44.50	31.19	26.40	41.33	29.51	29.07
		24°C	55.25	43.77	19.71	53.50	42.86	21.06	51.65	41.90	22.64	49.68	40.88	24.43	44.73	37.41	26.43	41.54	35.55	29.10
		27°C	55.45	50.38	19.73	53.76	49.44	21.09	51.95	48.42	22.67	50.11	47.17	24.48	45.36	42.96	26.51	42.57	40.35	29.24
		30°C	57.65	57.65	19.93	56.20	56.20	21.33	54.63	54.63	22.95	52.96	52.96	24.79	48.11	48.11	26.86	45.24	45.24	29.61
	19°C	24°C	60.46	34.71	20.19	58.59	33.96	21.56	56.57	33.16	23.15	54.44	32.31	24.96	49.04	29.54	26.97	45.59	28.03	29.66
		27°C	60.62	40.55	20.20	58.73	39.73	21.58	56.73	38.85	23.17	54.60	37.92	24.98	49.21	34.73	26.99	45.79	33.04	29.68
		30°C	60.85	49.49	20.22	58.93	48.59	21.60	56.91	47.65	23.20	54.77	46.66	25.00	49.38	42.89	27.02	45.97	41.01	29.71
		33°C	61.21	61.21	20.25	59.46	59.46	21.65	57.73	57.73	23.28	55.99	55.99	25.14	50.92	50.92	27.22	47.95	47.95	30.00
	22°C	27°C	66.34	32.61	20.73	64.24	31.90	22.14	62.06	31.15	23.75	59.76	30.38	25.58	53.90	27.79	27.61	50.18	26.40	30.32
		30°C	66.43	40.32	20.74	64.34	39.52	22.15	62.17	38.68	23.76	59.88	37.79	25.59	54.01	34.64	27.62	50.32	33.00	30.33
		33°C	66.62	46.98	20.76	64.54	46.14	22.17	62.36	45.27	23.79	60.06	44.35	25.61	54.19	40.79	27.65	50.49	39.03	30.36
		36°C	66.81	53.49	20.78	64.73	52.65	22.19	62.52	51.76	23.81	60.24	50.84	25.64	54.40	46.84	27.68	50.93	44.64	30.43
6710	16°C	21°C	56.19	38.23	19.79	54.39	37.41	21.15	52.45	36.52	22.72	50.40	35.52	24.51	45.36	32.40	26.51	42.10	30.62	29.17
		24°C	56.48	45.57	19.82	54.68	44.64	21.18	52.76	43.66	22.75	50.71	42.61	24.54	45.64	39.02	26.54	42.34	37.11	29.21
		27°C	56.88	52.83	19.86	55.19	51.69	21.23	53.46	50.35	22.83	51.74	48.78	24.66	46.92	44.46	26.71	44.01	41.83	29.44
		30°C	59.82	59.82	20.13	58.28	58.28	21.53	56.63	56.63	23.16	54.87	54.87	25.01	49.82	49.82	27.08	46.81	46.81	29.83
	19°C	24°C	61.70	36.08	20.30	59.74	35.32	21.68	57.65	34.51	23.27	55.43	33.66	25.07	49.92	30.80	27.09	46.41	29.25	29.77
		27°C	61.93	42.24	20.32	59.97	41.39	21.70	57.89	40.49	23.29	55.69	39.54	25.10	50.16	36.23	27.12	46.65	34.50	29.80
		30°C	62.21	51.81	20.35	60.22	50.89	21.73	58.12	49.93	23.33	55.93	48.93	25.13	50.42	44.97	27.15	47.03	42.78	29.87
		33°C	63.18	63.18	20.43	61.57	61.57	21.86	59.87	59.87	23.51	58.05	58.05	25.38	52.77	52.77	27.46	49.67	49.67	30.24
	22°C	27°C	67.62	33.87	20.86	65.45	33.16	22.26	63.19	32.41	23.88	60.81	31.63	25.70	54.82	28.97	27.73	51.02	27.56	30.43
		30°C	67.78	42.07	20.87	65.62	41.23	22.28	63.37	40.36	23.90	60.99	39.44	25.72	55.00	36.18	27.75	51.22	34.49	30.46
		33°C	68.04	49.20	20.90	65.89	48.35	22.31	63.61	47.45	23.93	61.23	46.51	25.75	55.22	42.81	27.79	51.43	41.00	30.50
		36°C	68.28	56.25	20.92	66.11	55.38	22.33	63.88	54.39	23.96	61.67	53.24	25.80	55.90	49.22	27.88	52.56	46.93	30.67
7381	16°C	21°C	57.19	39.27	19.88	55.31	38.36	21.24	53.33	37.39	22.81	51.25	36.36	24.60	46.09	33.15	26.60	42.75	31.34	29.27
		24°C	57.56	46.79	19.92	55.68	45.85	21.28	53.70	44.86	22.85	51.59	43.81	24.64	46.39	40.13	26.64	43.05	38.20	29.31
		27°C	58.36	54.54	19.99	56.74	53.64	21.38	55.07	52.60	22.99	53.28	51.40	24.83	48.29	46.73	26.88	45.28	44.03	29.62
		30°C	61.75	61.75	20.30	60.11	60.11	21.72	58.39	58.39	23.35	56.54	56.54	25.20	51.31	51.31	27.27	48.19	48.19	30.03
	19°C	24°C	62.73	37.76	20.39	60.70	36.99	21.77	58.55	36.17	23.37	56.27	35.28	25.17	50.67	32.24	27.18	47.07	30.55	29.87
		27°C	63.04	44.20	20.42	61.03	43.33	21.81	58.86	42.40	23.40	56.60	41.42	25.21	50.96	37.98	27.22	47.35	36.19	29.91
		30°C	63.37	54.47	20.46	61.30	53.52	21.84	59.20	52.51	23.44	56.99	51.38	25.25	51.49	46.98	27.29	48.21	44.36	30.03
		33°C	65.23	65.23	20.63	63.54	63.54	22.07	61.76	61.76	23.72	59.87	59.87	25.59	54.39	54.39	27.68	51.17	51.17	30.46
	22°C	27°C	68.69	35.43	20.96	66.47	34.71	22.37	64.13	33.95	23.98	61.70	33.18	25.80	55.60	30.43	27.83	51.73	28.95	30.54
		30°C	68.92	44.07	20.98	66.71	43.20	22.39	64.39	42.30	24.01	61.96	41.35	25.84	55.85	37.95	27.87	51.98	36.20	30.57
		33°C	69.25	51.75	21.02	67.02	50.87	22.43	64.68	49.95	24.05	62.23	48.99	25.87	56.09	45.12	27.91	52.21	43.24	30.61
		36°C	69.60	59.27	21.05	67.51	58.18	22.48	65.39	56.89	24.13	63.27	55.41	26.00	57.52	50.95	28.10	54.19	48.38	30.91

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT250A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
7200	16°C	21°C	66.61	50.12	22.51	64.50	49.01	24.06	62.26	47.84	25.86	59.85	46.60	27.90	53.86	42.54	30.19	50.03	40.24	33.24
		24°C	66.87	59.70	22.54	64.76	58.46	24.09	62.52	57.14	25.88	60.13	55.75	27.93	54.15	51.03	30.22	50.29	48.49	33.27
		27°C	67.12	67.12	22.56	65.07	65.07	24.11	62.89	62.89	25.92	60.65	60.65	27.99	54.90	54.90	30.31	51.53	51.53	33.44
		30°C	69.78	69.78	22.78	68.02	68.02	24.38	66.13	66.13	26.24	64.10	64.10	28.35	58.23	58.23	30.71	54.76	54.76	33.86
	19°C	24°C	73.19	47.35	23.08	70.91	46.32	24.65	68.48	45.22	26.47	65.89	44.07	28.53	59.36	40.29	30.84	55.19	38.23	33.91
		27°C	73.38	55.31	23.09	71.09	54.18	24.67	68.67	52.98	26.49	66.09	51.72	28.56	59.57	47.37	30.87	55.42	45.06	33.94
		30°C	73.66	67.50	23.12	71.34	66.27	24.70	68.89	64.99	26.52	66.29	63.64	28.59	59.77	58.50	30.90	55.65	55.65	33.98
		33°C	74.09	74.09	23.15	71.97	71.97	24.75	69.87	69.87	26.62	67.78	67.78	28.74	61.63	61.63	31.13	58.05	58.05	34.30
	22°C	27°C	80.30	44.48	23.71	77.76	43.50	25.31	75.12	42.49	27.16	72.34	41.43	29.24	65.25	37.91	31.57	60.74	36.01	34.67
		30°C	80.41	54.99	23.72	77.88	53.90	25.32	75.26	52.76	27.17	72.48	51.54	29.26	65.38	47.25	31.58	60.91	45.01	34.68
		33°C	80.64	64.07	23.74	78.12	62.93	25.35	75.48	61.74	27.20	72.70	60.49	29.29	65.59	55.64	31.62	61.12	53.23	34.72
		36°C	80.87	72.96	23.76	78.35	71.81	25.37	75.68	70.59	27.22	72.91	69.34	29.31	65.85	63.88	31.65	61.65	60.88	34.79
8000	16°C	21°C	68.02	52.14	22.63	65.84	51.02	24.18	63.49	49.81	25.98	61.01	48.45	28.02	54.91	44.19	30.31	50.96	41.76	33.36
		24°C	68.37	62.15	22.67	66.19	60.89	24.22	63.87	59.54	26.02	61.38	58.12	28.06	55.24	53.22	30.35	51.25	50.61	33.40
		27°C	68.84	68.84	22.70	66.80	66.80	24.27	64.71	64.71	26.10	62.62	62.62	28.19	56.79	56.79	30.54	53.28	53.28	33.66
		30°C	72.41	72.41	23.01	70.55	70.55	24.62	68.55	68.55	26.48	66.42	66.42	28.60	60.30	60.30	30.96	56.66	56.66	34.11
	19°C	24°C	74.68	49.21	23.21	72.32	48.18	24.78	69.78	47.07	26.61	67.10	45.91	28.67	60.42	42.01	30.97	56.18	39.90	34.04
		27°C	74.96	57.61	23.23	72.59	56.45	24.81	70.07	55.22	26.64	67.41	53.93	28.70	60.72	49.42	31.01	56.47	47.06	34.08
		30°C	75.30	70.66	23.27	72.90	69.41	24.85	70.35	68.10	26.67	67.71	66.74	28.74	61.04	61.04	31.05	56.92	56.92	34.15
		33°C	76.48	76.48	23.37	74.53	74.53	25.00	72.46	72.46	26.88	70.27	70.27	29.02	63.87	63.87	31.40	60.12	60.12	34.58
	22°C	27°C	81.85	46.20	23.85	79.23	45.22	25.46	76.49	44.20	27.30	73.60	43.14	29.39	66.35	39.51	31.71	61.76	37.60	34.80
		30°C	82.04	57.38	23.87	79.43	56.23	25.48	76.71	55.05	27.32	73.83	53.80	29.41	66.57	49.34	31.73	62.00	47.04	34.83
		33°C	82.36	67.10	23.90	79.75	65.94	25.51	77.00	64.72	27.36	74.11	63.44	29.45	66.84	58.39	31.77	62.25	55.92	34.87
		36°C	82.65	76.72	23.92	80.02	75.54	25.54	77.32	74.19	27.39	74.65	72.62	29.51	67.66	67.13	31.88	63.62	63.62	35.07
8800	16°C	21°C	69.22	53.56	22.74	66.96	52.31	24.29	64.56	50.99	26.09	62.03	49.59	28.13	55.79	45.22	30.41	51.75	42.74	33.47
		24°C	69.67	63.82	22.78	67.40	62.54	24.33	65.00	61.18	26.13	62.45	59.75	28.18	56.16	54.73	30.46	52.11	52.10	33.51
		27°C	70.64	70.64	22.85	68.68	68.68	24.45	66.66	66.66	26.29	64.49	64.49	28.39	58.46	58.46	30.74	54.81	54.81	33.86
		30°C	74.74	74.74	23.21	72.77	72.77	24.83	70.67	70.67	26.70	68.44	68.44	28.82	62.11	62.11	31.18	58.34	58.34	34.34
	19°C	24°C	75.93	51.50	23.32	73.48	50.45	24.90	70.87	49.33	26.72	68.12	48.12	28.78	61.33	43.97	31.08	56.98	41.67	34.15
		27°C	76.31	60.29	23.35	73.87	59.09	24.93	71.25	57.82	26.76	68.51	56.50	28.82	61.68	51.80	31.13	57.32	49.36	34.20
		30°C	76.71	74.29	23.39	74.21	72.99	24.97	71.66	71.62	26.80	68.98	68.98	28.87	62.33	62.33	31.21	58.35	58.35	34.34
		33°C	78.96	78.96	23.59	76.92	76.92	25.23	74.76	74.76	27.12	72.47	72.47	29.26	65.84	65.84	31.65	61.94	61.94	34.83
	22°C	27°C	83.15	48.33	23.97	80.46	47.34	25.58	77.63	46.31	27.42	74.68	45.25	29.50	67.30	41.50	31.83	62.61	39.49	34.92
		30°C	83.43	60.11	23.99	80.75	58.92	25.61	77.95	57.69	27.45	75.00	56.40	29.54	67.60	51.76	31.86	62.92	49.38	34.96
		33°C	83.82	70.59	24.03	81.12	69.38	25.64	78.29	68.13	27.50	75.33	66.82	29.59	67.89	61.53	31.91	63.20	58.98	35.01
		36°C	84.24	80.84	24.07	81.72	79.34	25.70	79.15	77.60	27.59	76.59	75.58	29.73	69.62	69.49	32.13	65.59	65.59	35.34

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT300A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
8640	16°C	21°C	81.96	60.12	31.50	79.37	58.80	33.67	76.60	57.39	36.18	73.64	55.90	39.04	66.27	51.03	42.24	61.56	48.28	46.51
		24°C	82.28	71.62	31.53	79.68	70.12	33.70	76.93	68.55	36.22	73.99	66.88	39.08	66.62	61.21	42.29	61.87	58.17	46.56
		27°C	82.58	82.43	31.57	80.06	80.06	33.74	77.38	77.38	36.27	74.63	74.63	39.16	67.55	67.55	42.42	63.40	63.40	46.79
		30°C	85.86	85.86	31.88	83.70	83.70	34.12	81.36	81.36	36.72	78.87	78.87	39.67	71.65	71.65	42.97	67.37	67.37	47.38
	19°C	24°C	90.05	56.80	32.30	87.25	55.56	34.50	84.25	54.25	37.04	81.07	52.87	39.93	73.03	48.33	43.15	67.90	45.86	47.46
		27°C	90.28	66.35	32.32	87.47	65.00	34.52	84.49	63.56	37.07	81.32	62.04	39.96	73.29	56.82	43.19	68.19	54.05	47.50
		30°C	90.63	80.97	32.35	87.77	79.50	34.56	84.76	77.96	37.11	81.56	76.34	40.01	73.55	70.18	43.24	68.47	67.10	47.54
		33°C	91.16	91.16	32.40	88.55	88.55	34.64	85.97	85.97	37.25	83.39	83.39	40.22	75.83	75.83	43.55	71.42	71.42	48.00
	22°C	27°C	98.80	53.36	33.17	95.68	52.19	35.42	92.43	50.97	38.00	89.01	49.70	40.92	80.28	45.47	44.17	74.74	43.19	48.51
		30°C	98.94	65.96	33.19	95.83	64.66	35.44	92.60	63.29	38.02	89.18	61.83	40.94	80.44	56.68	44.20	74.94	54.00	48.53
		33°C	99.22	76.87	33.22	96.12	75.49	35.47	92.87	74.06	38.06	89.45	72.57	40.98	80.70	66.74	44.24	75.20	63.86	48.58
		36°C	99.50	87.53	33.25	96.40	86.14	35.50	93.11	84.68	38.09	89.71	83.18	41.02	81.02	76.63	44.28	75.86	73.03	48.68
9600	16°C	21°C	83.69	62.54	31.67	81.01	61.21	33.84	78.12	59.75	36.35	75.06	58.12	39.21	67.56	53.01	42.41	62.70	50.10	46.68
		24°C	84.12	74.56	31.72	81.44	73.04	33.89	78.58	71.43	36.40	75.52	69.72	39.27	67.97	63.85	42.47	63.06	60.71	46.74
		27°C	84.71	84.71	31.77	82.19	82.19	33.96	79.62	79.62	36.52	77.05	77.05	39.45	69.88	69.88	42.73	65.55	65.55	47.11
		30°C	89.10	89.10	32.20	86.80	86.80	34.45	84.34	84.34	37.06	81.72	81.72	40.01	74.19	74.19	43.32	69.72	69.72	47.74
	19°C	24°C	91.88	59.04	32.48	88.98	57.79	34.68	85.85	56.47	37.23	82.55	55.08	40.11	74.34	50.39	43.34	69.12	47.86	47.63
		27°C	92.23	69.10	32.51	89.32	67.71	34.72	86.22	66.24	37.27	82.94	64.69	40.16	74.71	59.28	43.39	69.48	56.45	47.69
		30°C	92.65	84.76	32.56	89.69	83.27	34.77	86.56	81.69	37.32	83.30	80.06	40.21	75.10	73.58	43.45	70.04	69.99	47.79
		33°C	94.10	94.10	32.70	91.70	91.70	34.98	89.16	89.16	37.62	86.46	86.46	40.60	78.59	78.59	43.94	73.97	73.97	48.39
	22°C	27°C	100.70	55.42	33.37	97.48	54.25	35.62	94.12	53.03	38.20	90.56	51.75	41.12	81.64	47.40	44.37	75.99	45.10	48.70
		30°C	100.95	68.83	33.39	97.73	67.46	35.65	94.38	66.04	38.23	90.83	64.54	41.15	81.91	59.19	44.41	76.29	56.42	48.74
		33°C	101.33	80.50	33.44	98.12	79.10	35.69	94.74	77.63	38.28	91.19	76.10	41.21	82.24	70.05	44.46	76.59	67.08	48.80
		36°C	101.69	92.04	33.48	98.46	90.62	35.74	95.14	89.00	38.33	91.84	87.11	41.29	83.25	80.53	44.61	78.28	76.78	49.07
10560	16°C	21°C	85.17	64.25	31.81	82.38	62.76	33.99	79.43	61.17	36.50	76.32	59.49	39.36	68.64	54.24	42.56	63.67	51.27	46.83
		24°C	85.72	76.56	31.87	82.93	75.02	34.04	79.98	73.40	36.56	76.84	71.67	39.43	69.09	65.66	42.63	64.11	62.50	46.89
		27°C	86.92	86.92	31.98	84.50	84.50	34.21	82.01	82.01	36.79	79.35	79.35	39.72	71.92	71.92	43.01	67.43	67.43	47.39
		30°C	91.96	91.96	32.48	89.53	89.53	34.75	86.96	86.96	37.36	84.21	84.21	40.32	76.42	76.42	43.63	71.78	71.78	48.05
	19°C	24°C	93.42	61.78	32.63	90.41	60.52	34.84	87.20	59.17	37.39	83.81	57.73	40.27	75.46	52.75	43.49	70.11	49.98	47.79
		27°C	93.89	72.32	32.68	90.89	70.89	34.89	87.67	69.37	37.44	84.29	67.78	40.33	75.89	62.14	43.56	70.53	59.21	47.86
		30°C	94.38	89.12	32.73	91.30	87.56	34.95	88.16	85.92	37.50	84.87	84.07	40.40	76.69	76.69	43.67	71.79	71.79	48.06
		33°C	97.15	97.15	33.01	94.64	94.64	35.30	91.99	91.99	37.95	89.16	89.16	40.94	81.01	81.01	44.29	76.20	76.20	48.74
	22°C	27°C	102.31	57.98	33.53	98.99	56.79	35.79	95.51	55.55	38.37	91.88	54.29	41.29	82.81	49.78	44.53	77.04	47.37	48.86
		30°C	102.65	72.10	33.57	99.35	70.69	35.83	95.90	69.21	38.42	92.28	67.66	41.34	83.17	62.09	44.59	77.42	59.23	48.92
		33°C	103.14	84.68	33.62	99.81	83.23	35.88	96.33	81.73	38.47	92.68	80.16	41.40	83.53	73.82	44.65	77.76	70.75	48.98
		36°C	103.65	96.98	33.68	100.54	95.18	35.96	97.38	93.09	38.60	94.23	90.66	41.60	85.66	83.36	44.96	80.70	79.16	49.45

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT360A
Cooling Mode

AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
9900	16°C	21°C	95.86	73.93	32.84	92.83	72.30	35.10	89.60	70.57	37.72	86.13	68.74	40.70	77.51	62.75	44.04	72.00	59.36	48.49
		24°C	96.24	88.06	32.88	93.20	86.23	35.14	89.98	84.29	37.76	86.54	82.24	40.75	77.92	75.27	44.09	72.37	71.52	48.54
		27°C	96.59	96.59	32.92	93.65	93.65	35.18	90.50	90.50	37.81	87.29	87.29	40.83	79.01	79.01	44.22	74.15	74.15	48.78
		30°C	100.42	100.42	33.24	97.89	97.89	35.57	95.17	95.17	38.28	92.25	92.25	41.36	83.80	83.80	44.80	78.80	78.80	49.40
	19°C	24°C	105.33	69.84	33.67	102.05	68.32	35.97	98.55	66.71	38.62	94.83	65.01	41.63	85.42	59.43	44.99	79.42	56.39	49.48
		27°C	105.60	81.59	33.69	102.31	79.92	35.99	98.82	78.15	38.65	95.12	76.29	41.66	85.73	69.87	45.03	79.76	66.47	49.52
		30°C	106.00	99.56	33.73	102.66	97.76	36.03	99.14	95.86	38.69	95.40	93.87	41.71	86.02	86.02	45.08	80.08	80.08	49.57
		33°C	106.62	106.62	33.78	103.58	103.58	36.11	100.56	100.56	38.83	97.54	97.54	41.93	88.70	88.70	45.41	83.53	83.53	50.04
	22°C	27°C	115.56	65.62	34.59	111.91	64.17	36.93	108.11	62.68	39.62	104.10	61.11	42.66	93.89	55.91	46.06	87.42	53.11	50.57
		30°C	115.72	81.11	34.60	112.08	79.50	36.95	108.31	77.83	39.64	104.31	76.03	42.68	94.09	69.70	46.08	87.65	66.40	50.60
		33°C	116.05	94.52	34.63	112.42	92.83	36.98	108.63	91.07	39.68	104.62	89.23	42.73	94.39	82.07	46.12	87.95	78.52	50.65
		36°C	116.38	107.62	34.66	112.75	105.92	37.01	108.91	104.13	39.72	104.93	102.29	42.76	94.76	94.23	46.17	88.72	88.72	50.75
11000	16°C	21°C	97.88	76.90	33.02	94.75	75.27	35.28	91.37	73.47	37.90	87.80	71.47	40.88	79.02	65.18	44.22	73.33	61.61	48.67
		24°C	98.39	91.68	33.07	95.26	89.81	35.33	91.91	87.83	37.95	88.34	85.73	40.94	79.50	78.51	44.28	73.76	73.76	48.73
		27°C	99.07	99.07	33.12	96.14	96.14	35.41	93.13	93.13	38.08	90.12	90.12	41.13	81.73	81.73	44.55	76.67	76.67	49.11
		30°C	104.21	104.21	33.57	101.53	101.53	35.92	98.65	98.65	38.63	95.58	95.58	41.72	86.78	86.78	45.17	81.55	81.55	49.77
	19°C	24°C	107.47	72.59	33.86	104.07	71.07	36.16	100.42	69.43	38.82	96.56	67.72	41.82	86.95	61.96	45.19	80.85	58.85	49.66
		27°C	107.88	84.97	33.90	104.47	83.26	36.20	100.84	81.45	38.86	97.01	79.55	41.87	87.38	72.90	45.24	81.26	69.41	49.72
		30°C	108.37	104.22	33.94	104.91	102.38	36.25	101.25	100.45	38.91	97.44	97.44	41.92	87.84	87.84	45.30	81.92	81.92	49.82
		33°C	110.07	110.07	34.09	107.25	107.25	36.47	104.28	104.28	39.22	101.13	101.13	42.33	91.92	91.92	45.81	86.52	86.52	50.45
	22°C	27°C	117.79	68.15	34.79	114.02	66.70	37.14	110.08	65.20	39.83	105.92	63.63	42.87	95.49	58.28	46.26	88.88	55.46	50.77
		30°C	118.07	84.64	34.82	114.31	82.95	37.17	110.39	81.20	39.86	106.24	79.36	42.91	95.81	72.78	46.30	89.23	69.38	50.81
		33°C	118.52	98.98	34.86	114.77	97.26	37.21	110.81	95.46	39.91	106.66	93.58	42.96	96.19	86.13	46.35	89.59	82.48	50.87
		36°C	118.94	113.17	34.90	115.16	111.42	37.26	111.28	109.43	39.97	107.42	107.12	43.04	97.37	97.37	46.50	91.56	91.56	51.16
12100	16°C	21°C	99.62	79.00	33.17	96.36	77.17	35.43	92.91	75.22	38.06	89.27	73.15	41.04	80.29	66.70	44.37	74.47	63.04	48.83
		24°C	100.26	94.14	33.23	97.00	92.25	35.49	93.55	90.25	38.12	89.87	88.13	41.10	80.81	80.73	44.44	74.99	74.99	48.89
		27°C	101.66	101.66	33.34	98.83	98.83	35.66	95.92	95.92	38.36	92.81	92.81	41.42	84.12	84.12	44.84	78.87	78.87	49.40
		30°C	107.56	107.56	33.87	104.72	104.72	36.23	101.71	101.71	38.95	98.50	98.50	42.04	89.39	89.39	45.49	83.95	83.95	50.09
	19°C	24°C	109.27	75.97	34.02	105.74	74.41	36.32	101.99	72.76	38.98	98.03	70.99	41.99	88.26	64.87	45.34	82.00	61.46	49.82
		27°C	109.82	88.93	34.07	106.30	87.17	36.38	102.54	85.29	39.04	98.59	83.34	42.05	88.77	76.41	45.41	82.49	72.81	49.89
		30°C	110.39	109.58	34.12	106.79	106.79	36.44	103.12	103.12	39.10	99.27	99.27	42.12	89.70	89.70	45.53	83.97	83.97	50.10
		33°C	113.63	113.63	34.41	110.69	110.69	36.81	107.59	107.59	39.57	104.29	104.29	42.69	94.75	94.75	46.17	89.13	89.13	50.81
	22°C	27°C	119.66	71.29	34.96	115.79	69.83	37.31	111.72	68.31	40.00	107.47	66.75	43.04	96.85	61.22	46.43	90.11	58.25	50.94
		30°C	120.06	88.66	35.00	116.20	86.92	37.36	112.17	85.10	40.05	107.93	83.20	43.10	97.28	76.35	46.49	90.55	72.83	51.00
		33°C	120.63	104.12	35.06	116.74	102.35	37.41	112.67	100.50	40.11	108.40	98.57	43.16	97.70	90.77	46.55	90.95	86.99	51.07
		36°C	121.23	119.25	35.11	117.60	117.04	37.49	113.90	113.90	40.24	110.21	110.21	43.37	100.19	100.19	46.87	94.39	94.39	51.56

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

Notes:
1. Ratings shown are net capacities.
2. ▭ shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

Model: A4RT420A
Cooling Mode

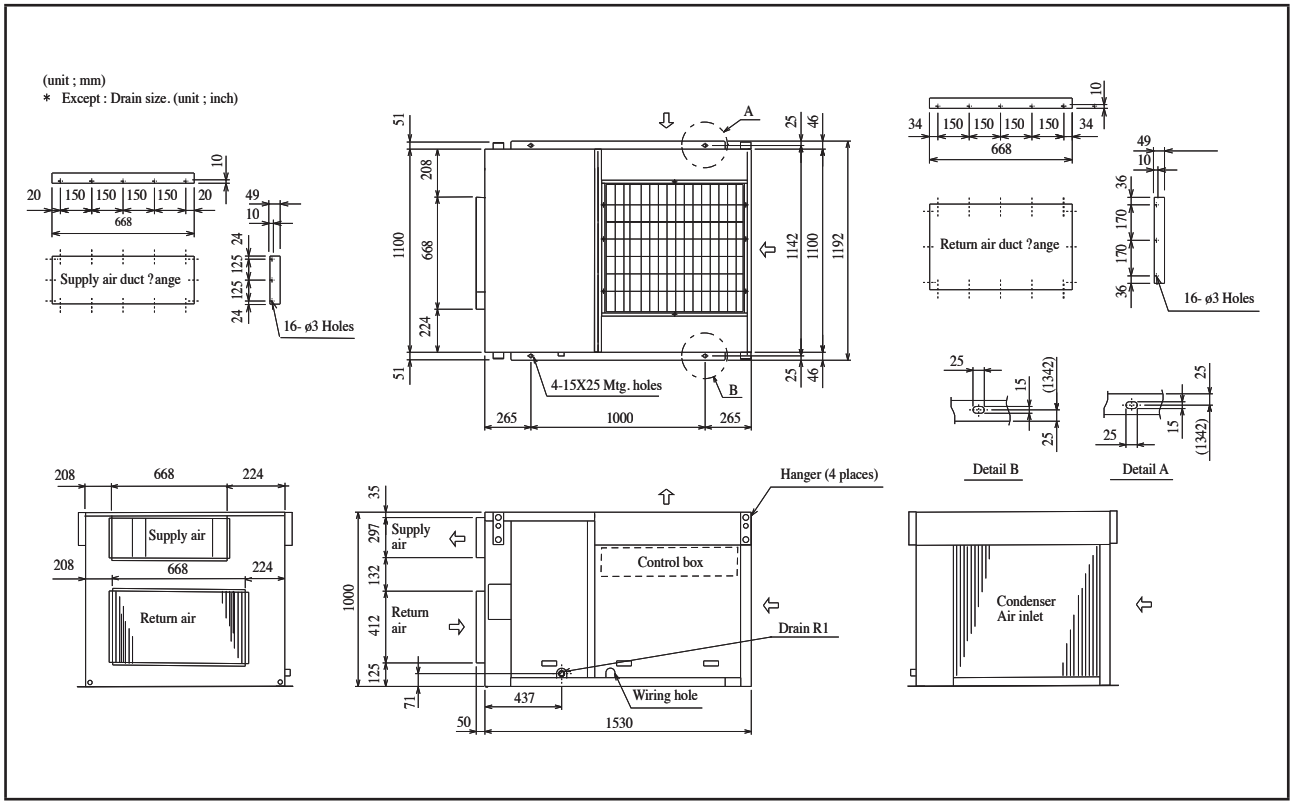
AFR (CFM)	EWB	EDB	Outdoor temperature																	
			19°C			25°C			30°C			35°C			40°C			46°C		
			TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI	TC	SC	PI
11250	16°C	21°C	120.19	94.95	38.28	116.39	92.86	40.91	112.34	90.64	43.96	107.99	88.28	47.44	97.18	80.60	51.33	90.28	76.24	56.52
		24°C	120.66	113.10	38.32	116.85	110.75	40.95	112.81	108.26	44.01	108.50	105.62	47.49	97.70	96.67	51.38	90.73	90.73	56.58
		27°C	121.11	121.11	38.36	117.41	117.41	41.00	113.47	113.47	44.07	109.44	109.44	47.59	99.07	99.07	51.54	92.97	92.97	56.85
		30°C	125.91	125.91	38.74	122.74	122.74	41.46	119.32	119.32	44.62	115.67	115.67	48.20	105.07	105.07	52.22	98.80	98.80	57.57
	19°C	24°C	132.06	89.70	39.24	127.95	87.75	41.92	123.55	85.68	45.01	118.89	83.50	48.52	107.10	76.33	52.44	99.58	72.43	57.67
		27°C	132.40	104.79	39.27	128.27	102.65	41.95	123.90	100.38	45.05	119.25	97.98	48.56	107.48	89.74	52.48	100.00	85.37	57.71
		30°C	132.90	127.88	39.31	128.72	125.56	42.00	124.29	123.12	45.10	119.61	119.61	48.61	107.85	107.85	52.54	100.40	100.40	57.77
		33°C	133.68	133.68	39.37	129.86	129.86	42.09	126.08	126.08	45.26	122.29	122.29	48.87	111.21	111.21	52.92	104.73	104.73	58.32
	22°C	27°C	144.89	84.28	40.31	140.31	82.42	43.04	135.54	80.50	46.18	130.52	78.49	49.72	117.72	71.81	53.68	109.60	68.21	58.94
		30°C	145.09	104.17	40.33	140.53	102.11	43.06	135.79	99.96	46.20	130.78	97.65	49.75	117.97	89.52	53.70	109.90	85.28	58.97
		33°C	145.50	121.39	40.36	140.95	119.22	43.10	136.19	116.97	46.25	131.17	114.60	49.80	118.35	105.41	53.76	110.28	100.85	59.03
		36°C	145.91	138.23	40.40	141.37	136.04	43.14	136.55	133.74	46.29	131.56	131.37	49.84	118.81	118.81	53.81	111.24	111.24	59.16
12500	16°C	21°C	122.73	98.77	38.49	118.79	96.67	41.12	114.55	94.36	44.17	110.08	91.79	47.65	99.07	83.72	51.54	91.94	79.13	56.72
		24°C	123.36	117.74	38.54	119.43	115.35	41.18	115.24	112.81	44.23	110.76	110.11	47.72	99.68	99.68	51.61	92.48	92.48	56.80
		27°C	124.22	124.22	38.60	120.54	120.54	41.27	116.77	116.77	44.38	113.00	113.00	47.94	102.47	102.47	51.92	96.13	96.13	57.24
		30°C	130.66	130.66	39.13	127.30	127.30	41.86	123.68	123.68	45.03	119.84	119.84	48.62	108.80	108.80	52.64	102.24	102.24	58.00
	19°C	24°C	134.75	93.24	39.46	130.48	91.27	42.14	125.90	89.18	45.24	121.06	86.98	48.74	109.02	79.58	52.67	101.37	75.58	57.88
		27°C	135.26	109.14	39.51	130.99	106.94	42.19	126.44	104.61	45.29	121.63	102.17	48.80	109.56	93.63	52.72	101.89	89.15	57.95
		30°C	135.87	133.86	39.56	131.53	131.50	42.25	126.94	126.94	45.35	122.16	122.16	48.86	110.13	110.13	52.79	102.71	102.71	58.07
		33°C	138.00	138.00	39.73	134.47	134.47	42.51	130.75	130.75	45.71	126.79	126.79	49.34	115.25	115.25	53.39	108.47	108.47	58.80
	22°C	27°C	147.68	87.53	40.55	142.95	85.67	43.28	138.02	83.75	46.42	132.80	81.72	49.97	119.72	74.85	53.91	111.44	71.23	59.17
		30°C	148.03	108.71	40.58	143.32	106.54	43.32	138.40	104.29	46.46	133.21	101.92	50.01	120.12	93.48	53.96	111.87	89.11	59.22
		33°C	148.60	127.13	40.63	143.90	124.92	43.37	138.94	122.61	46.52	133.72	120.19	50.07	120.60	110.62	54.03	112.32	105.94	59.29
		36°C	149.12	145.35	40.68	144.39	143.11	43.42	139.52	139.52	46.58	134.69	134.69	50.17	122.09	122.09	54.20	114.79	114.79	59.62
13750	16°C	21°C	124.90	101.46	38.66	120.81	99.11	41.30	116.48	96.61	44.36	111.93	93.96	47.83	100.67	85.67	51.71	93.37	80.97	56.91
		24°C	125.71	120.91	38.73	121.61	118.48	41.37	117.29	115.91	44.43	112.68	112.68	47.91	101.32	101.32	51.80	94.02	94.02	56.98
		27°C	127.46	127.46	38.86	123.92	123.92	41.57	120.27	120.27	44.70	116.36	116.36	48.27	105.47	105.47	52.26	98.89	98.89	57.58
		30°C	134.86	134.86	39.47	131.29	131.29	42.22	127.52	127.52	45.40	123.49	123.49	49.00	112.07	112.07	53.02	105.26	105.26	58.39
	19°C	24°C	137.00	97.57	39.65	132.58	95.58	42.33	127.88	93.45	45.43	122.91	91.17	48.94	110.66	83.31	52.84	102.81	78.94	58.07
		27°C	137.69	114.21	39.71	133.28	111.96	42.40	128.56	109.55	45.50	123.62	107.04	49.01	111.30	98.14	52.93	103.43	93.51	58.15
		30°C	138.41	138.41	39.77	133.89	133.89	42.47	129.29	129.29	45.57	124.46	124.46	49.10	112.46	112.46	53.07	105.28	105.28	58.39
		33°C	142.47	142.47	40.11	138.78	138.78	42.90	134.90	134.90	46.12	130.76	130.76	49.75	118.79	118.79	53.81	111.75	111.75	59.22
	22°C	27°C	150.03	91.56	40.75	145.17	89.69	43.49	140.07	87.73	46.62	134.75	85.73	50.17	121.43	78.62	54.11	112.97	74.81	59.37
		30°C	150.53	113.87	40.80	145.69	111.63	43.54	140.64	109.30	46.68	135.32	106.86	50.23	121.97	98.06	54.18	113.54	93.54	59.44
		33°C	151.25	133.73	40.86	146.37	131.45	43.60	141.27	129.08	46.75	135.91	126.60	50.31	122.49	116.58	54.26	114.03	111.73	59.52
		36°C	152.00	152.00	40.92	147.45	147.45	43.70	142.80	142.80	46.90	138.19	138.19	50.55	125.62	125.62	54.63	118.35	118.35	60.09

Remark:
AFR: Air flow rate (CFM)
EWB: Entering Wet Bulb Temp. (°C)
EDB: Entering Dry Bulb Temp. (°C)
TC: Total Cooling Capacity (kW)
SC: Sensible Cooling Capacity (kW)
PI: Power Input (kW)

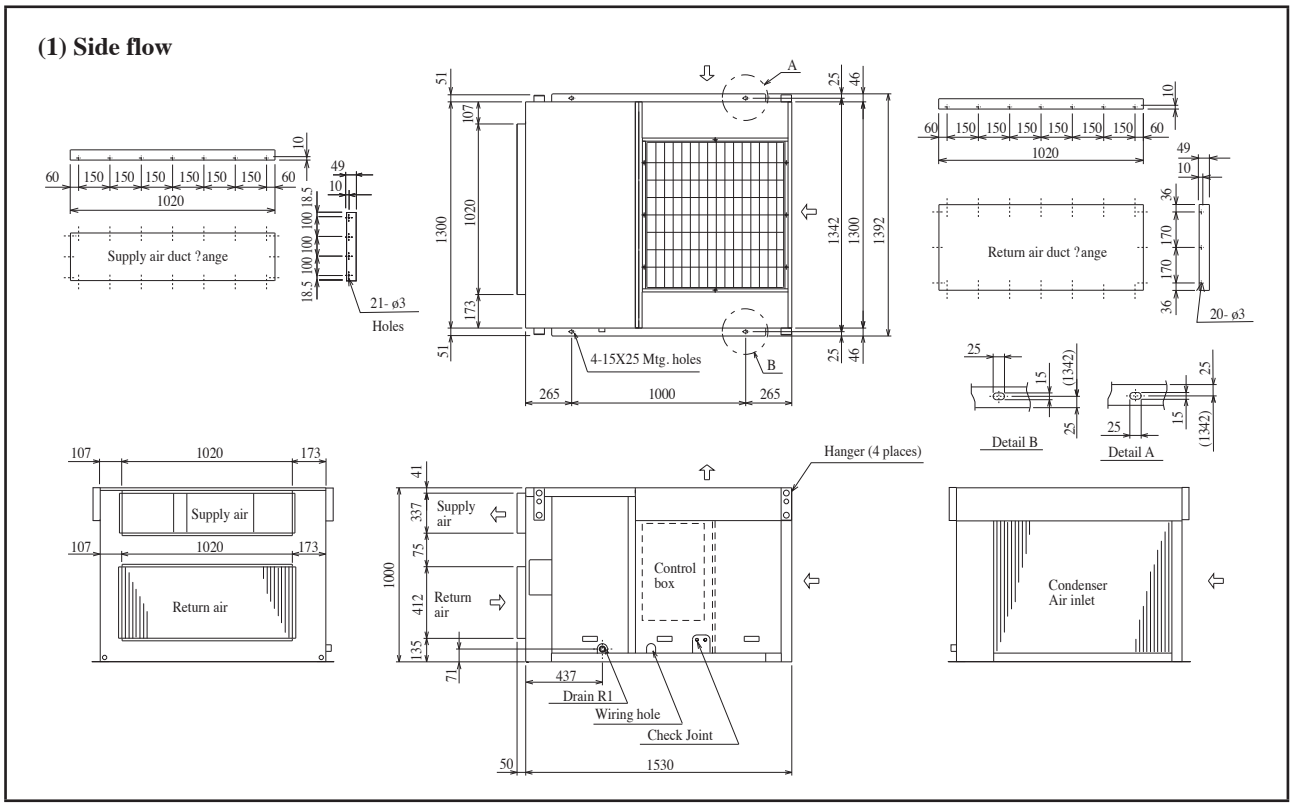
Notes:
1. Ratings shown are net capacities.
2. shows nominal capacities.
3. Direct interpolation is permissible. Do not extrapolate.
4. Unit is able to operate at ambient from 19°C to 46°C DB without pressure trip.

OUTLINE & DIMENSION

Model: A4RT60A

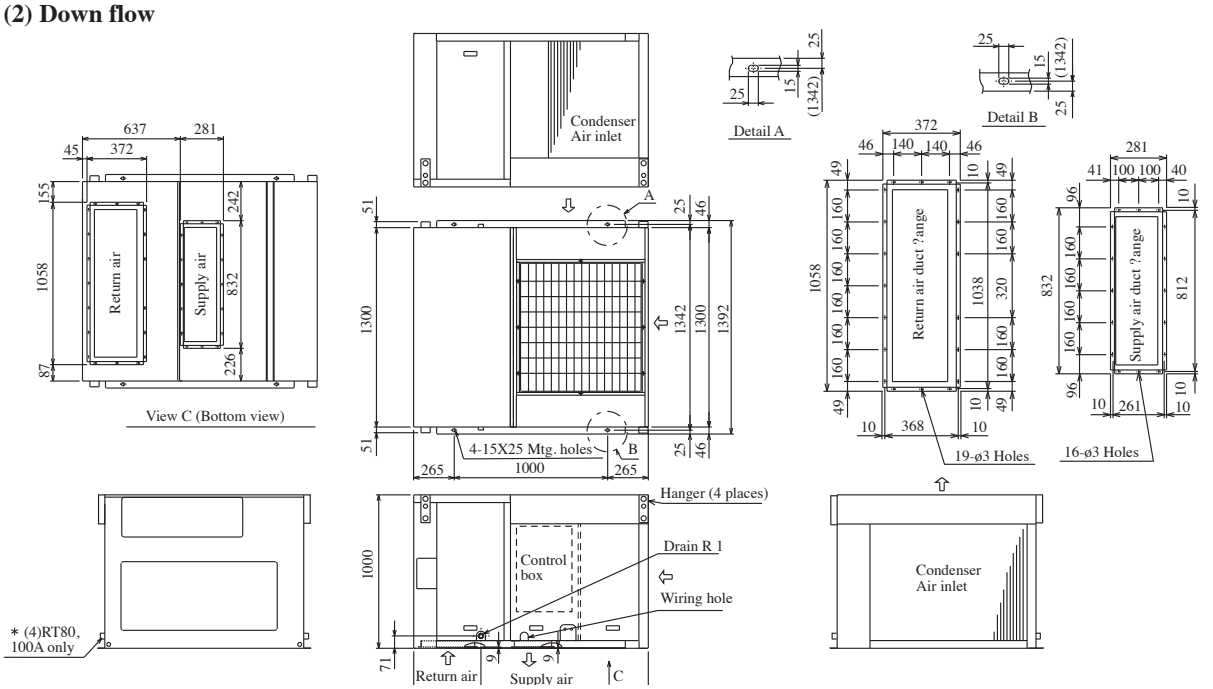


Model: A4RT80/100/120A



Model: A4RT80/100/120A

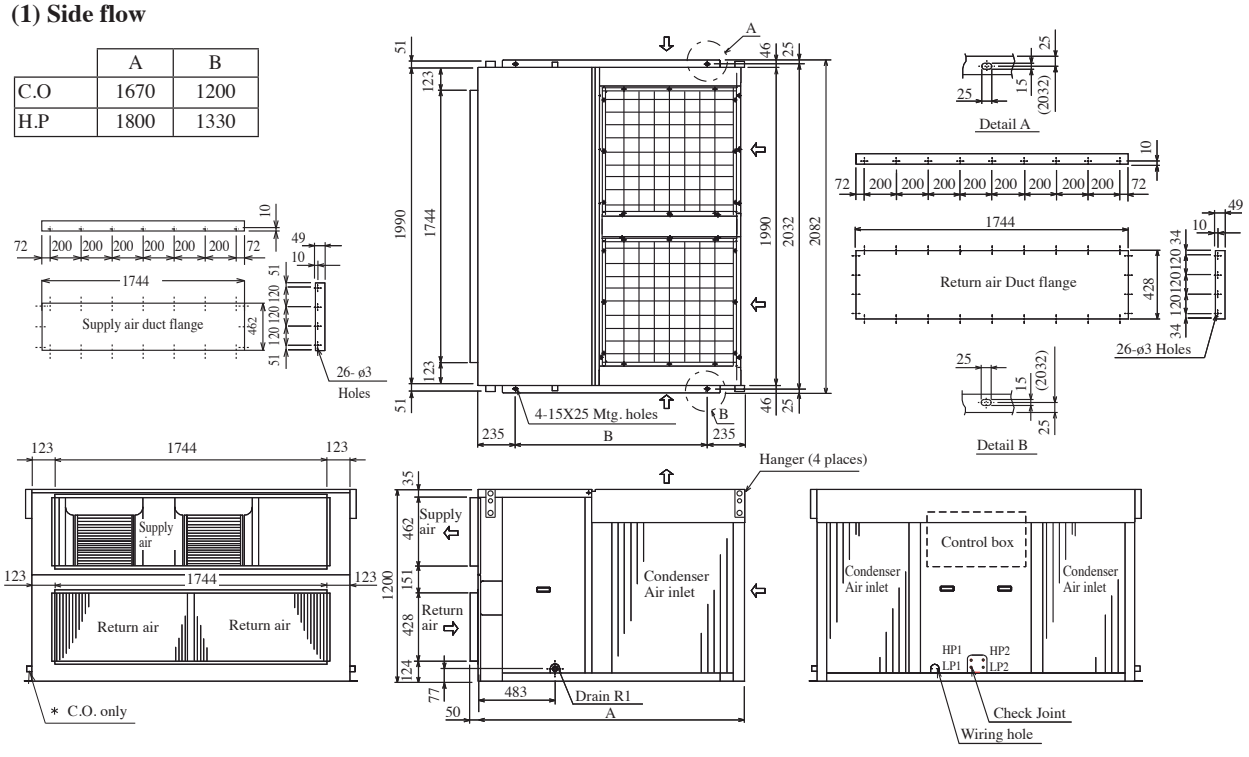
(2) Down flow



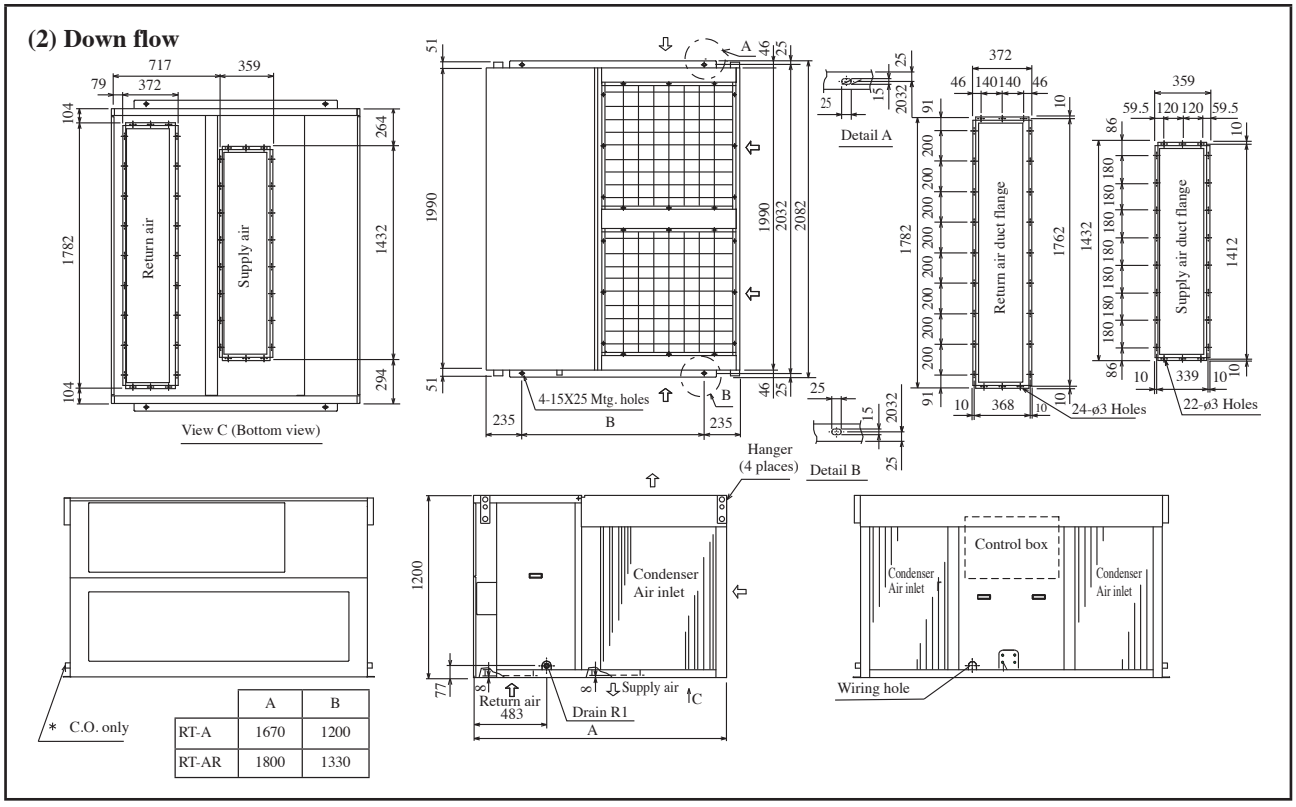
Model: A4RT150/200A

(1) Side flow

	A	B
C.O	1670	1200
H.P	1800	1330

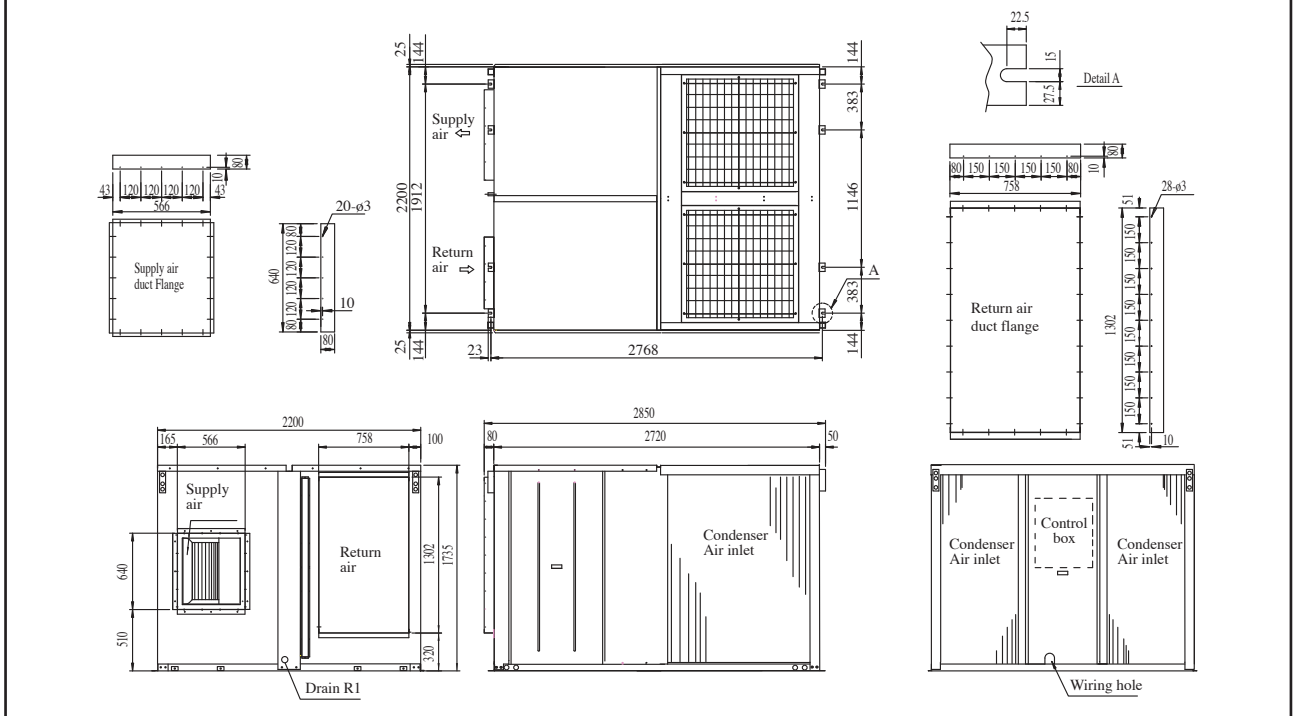


Model: A4RT150/200A

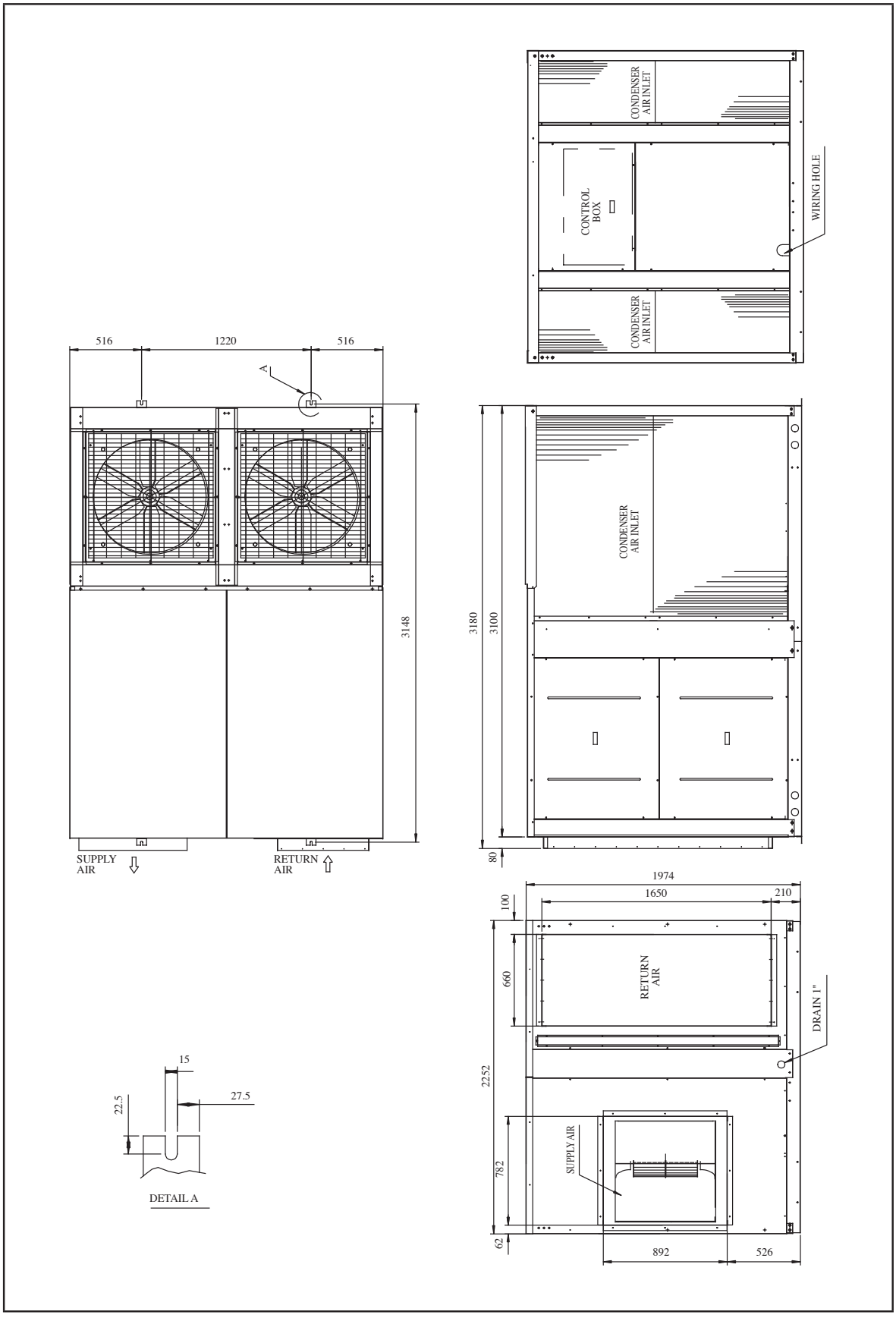


	A	B
RT-A	1670	1200
RT-AR	1800	1330

Model: A4RT250/300A



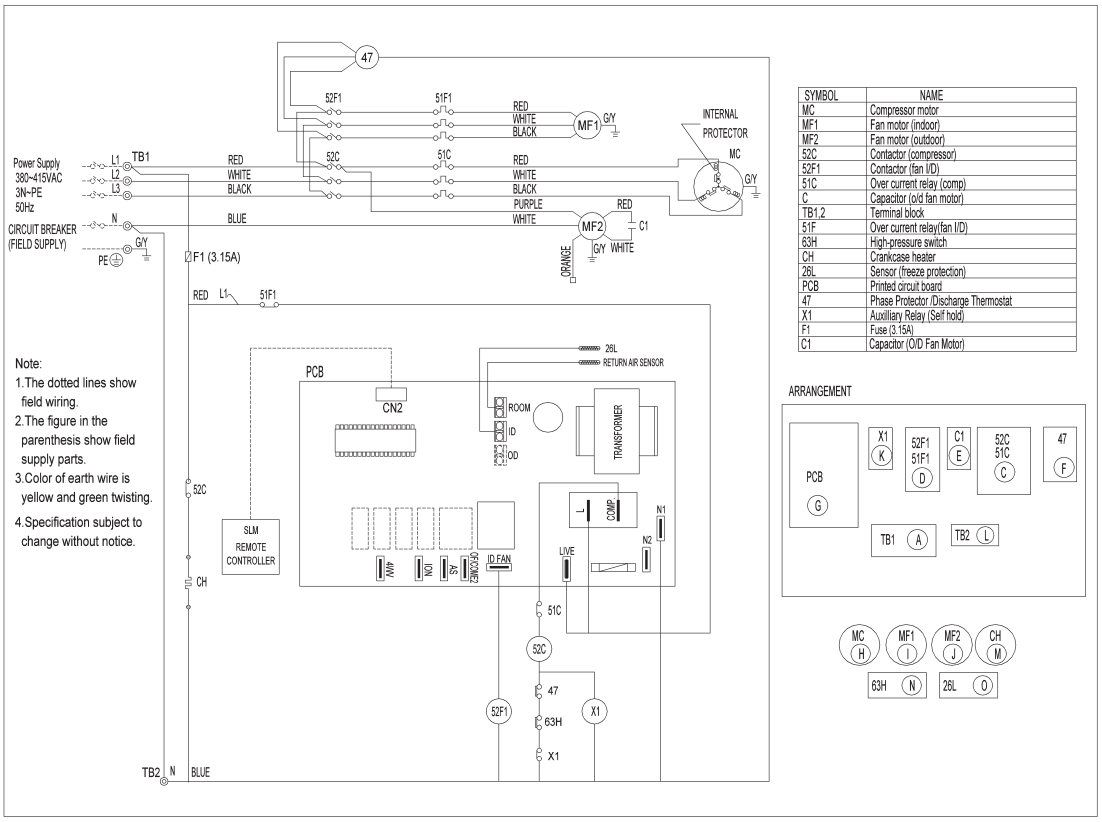
Model: A4RT360/420A



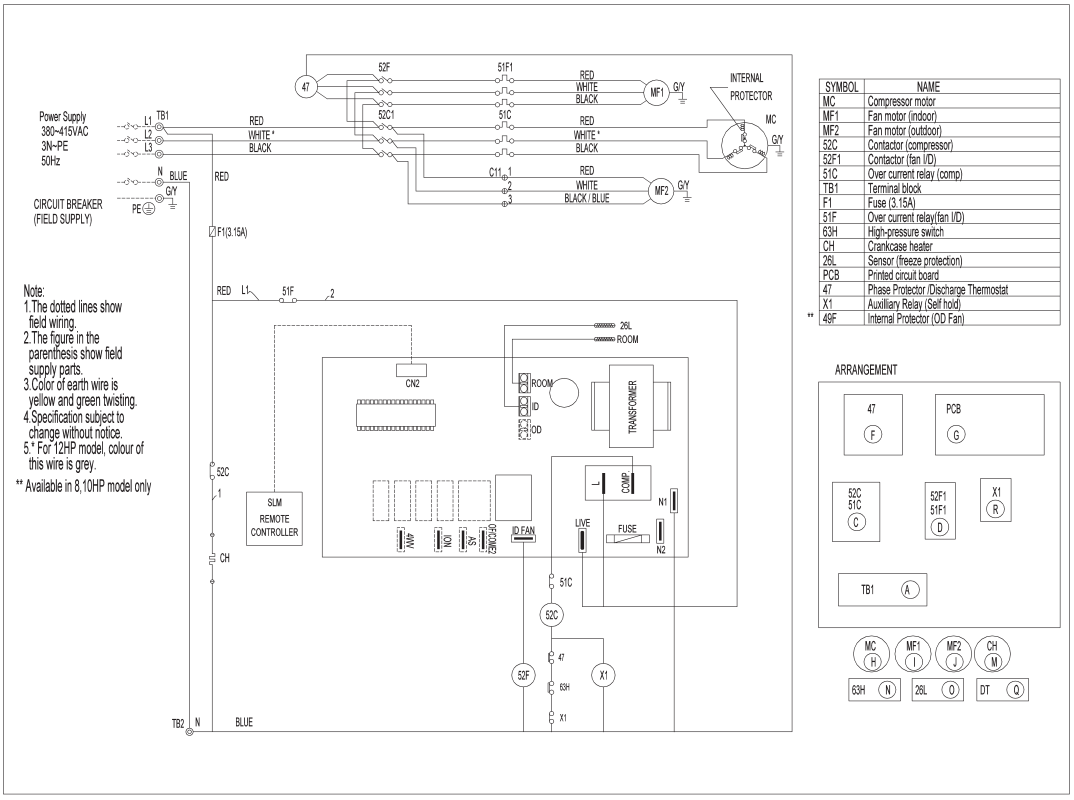
Wiring Diagram

Cooling Only

Model: A4RT60A

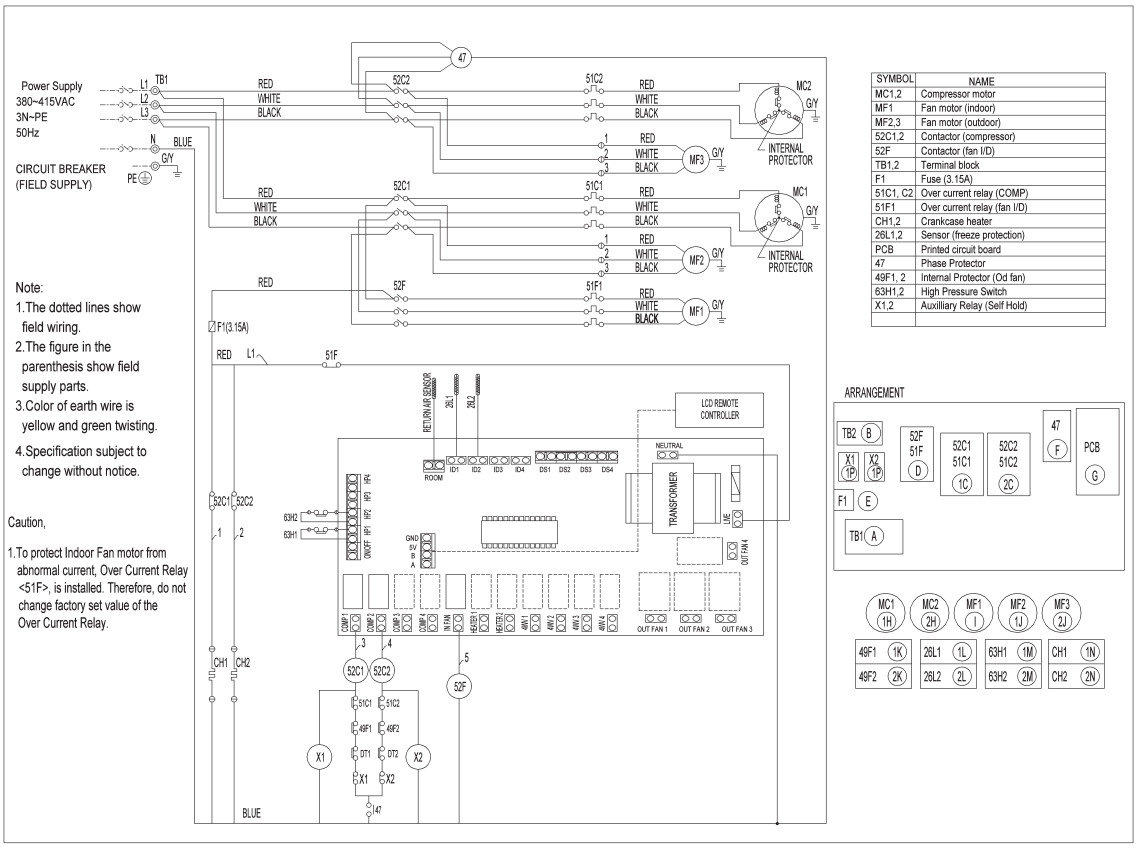


Model: A4RT80/100/120A



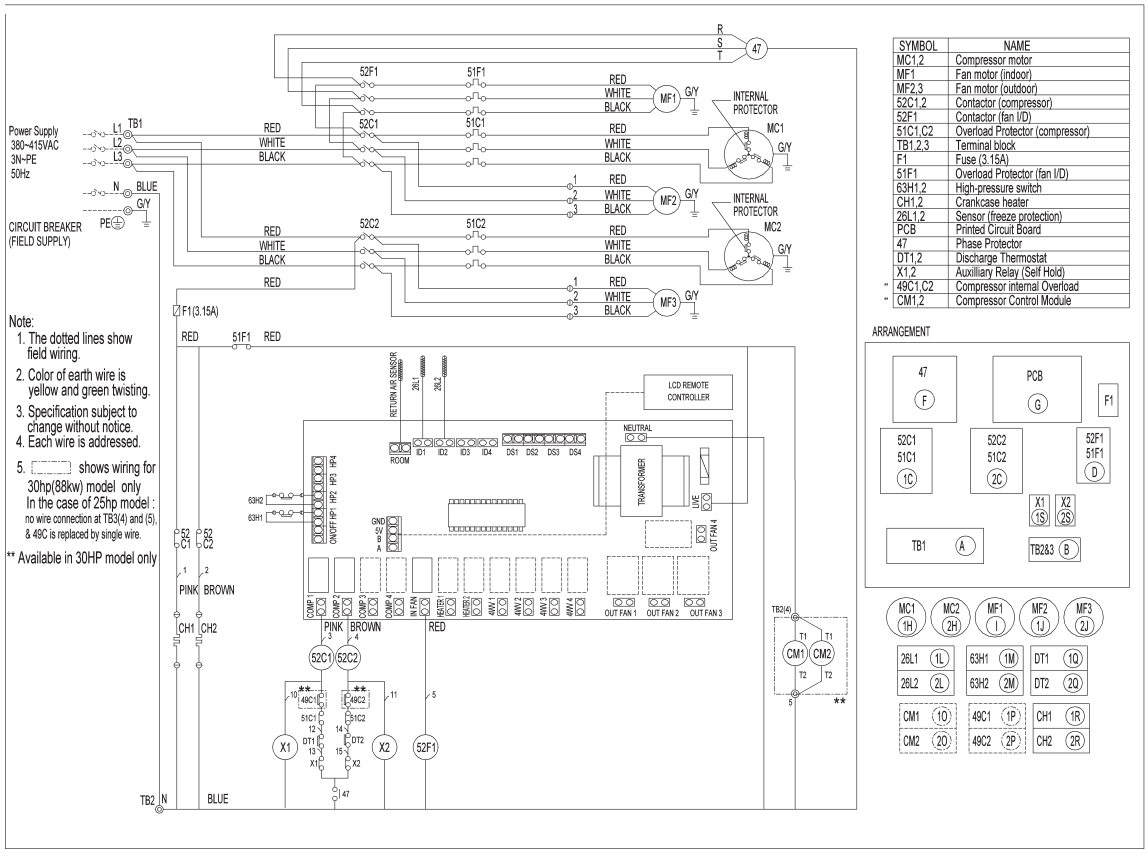
SYMBOL	NAME
MC	Compressor motor
MF1	Fan motor (indoor)
MF2	Fan motor (outdoor)
52C	Contactor (compressor)
52F1	Contactor (fan I/D)
51C	Over current relay (comp)
TB1	Terminal block
F1	Fuse (3.15A)
51F	Over current relay(fan I/D)
63H	High-pressure switch
CH	Crankcase heater
26L	Sensor (freeze protection)
PCB	Printed circuit board
47	Phase Protector /Discharge Thermostat
X1	Auxiliary Relay (Self hold)
** 49F	Internal Protector (OD Fan)

Model: A4RT150/200A



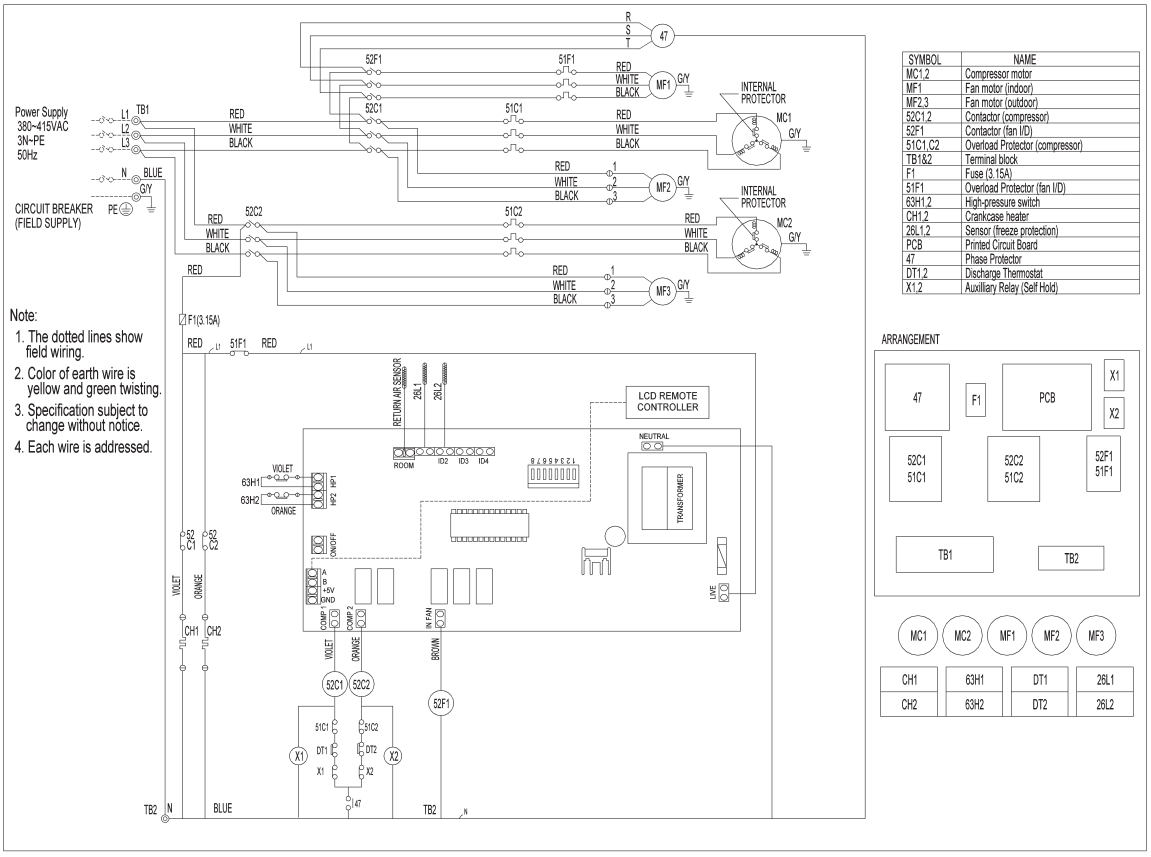
SYMBOL	NAME
MC1,2	Compressor motor
MF1	Fan motor (indoor)
MF2,3	Fan motor (outdoor)
52C1,2	Contactor (compressor)
52F	Contactor (fan I/D)
TB1,2	Terminal block
F1	Fuse (3.15A)
51C1, C2	Over current relay (COMP)
51F1	Over current relay (fan I/D)
CH1,2	Crankcase heater
26L1,2	Sensor (freeze protection)
PCB	Printed circuit board
47	Phase Protector
49F1, 2	Internal Protector (Od fan)
63H1,2	High Pressure Switch
X1,2	Auxilliary Relay (Self Hold)

Model: A4RT250A



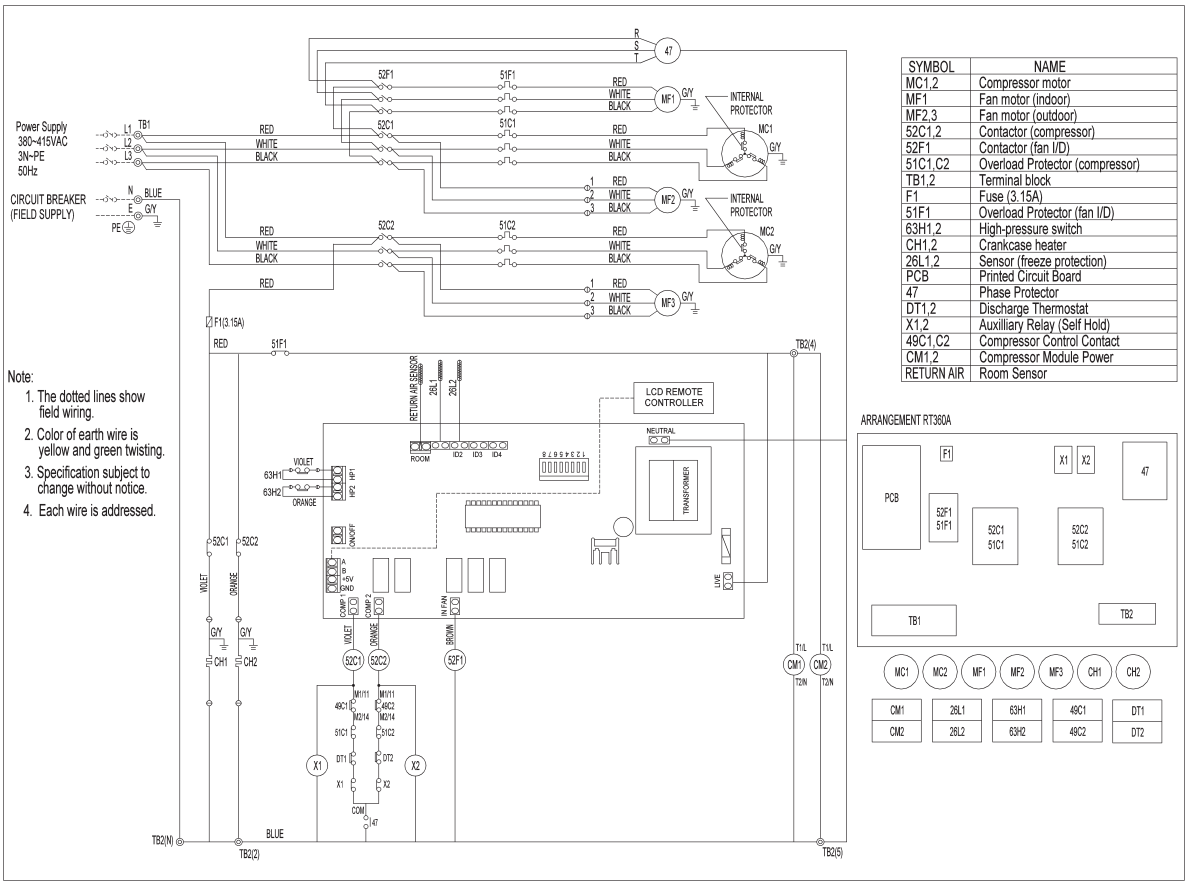
SYMBOL	NAME
MC1,2	Compressor motor
MF1	Fan motor (indoor)
MF2,3	Fan motor (outdoor)
52C1,2	Contactor (compressor)
52F1	Contactor (fan I/D)
51C1,C2	Overload Protector (compressor)
TB1,2,3	Terminal block
F1	Fuse (3.15A)
51F1	Overload Protector (fan I/D)
63H1,2	High-pressure switch
CH1,2	Crankcase heater
26L1,2	Sensor (freeze protection)
PCB	Printed Circuit Board
47	Phase Protector
DT1,2	Discharge Thermostat
X1,2	Auxilliary Relay (Self Hold)
** 49C1,C2	Compressor internal Overload
** CM1,2	Compressor Control Module

Model: A4RT300A



SYMBOL	NAME
MC1,2	Compressor motor
MF1	Fan motor (indoor)
MF2,3	Fan motor (outdoor)
52C1,2	Contactor (compressor)
52F1	Contactor (fan I/D)
51C1,C2	Overload Protector (compressor)
TB1&2	Terminal block
F1	Fuse (3.15A)
51F1	Overload Protector (fan I/D)
63H1,2	High-pressure switch
CH1,2	Crankcase heater
26L1,2	Sensor (freeze protection)
PCB	Printed Circuit Board
47	Phase Protector
DT1,2	Discharge Thermostat
X1,2	Auxilliary Relay (Self Hold)

Model: A4RT360/420A



SYMBOL	NAME
MC1,2	Compressor motor
MF1	Fan motor (indoor)
MF2,3	Fan motor (outdoor)
52C1,2	Contactor (compressor)
52F1	Contactor (fan I/D)
51C1,C2	Overload Protector (compressor)
TB1,2	Terminal block
F1	Fuse (3.15A)
51F1	Overload Protector (fan I/D)
63H1,2	High-pressure switch
CH1,2	Crankcase heater
26L1,2	Sensor (freeze protection)
PCB	Printed Circuit Board
47	Phase Protector
DT1,2	Discharge Thermostat
X1,2	Auxilliary Relay (Self Hold)
49C1,C2	Compressor Control Contact
CM1,2	Compressor Module Power
RETURN AIR	Room Sensor

ARRANGEMENT RT360A

SERVICING & MAINTENANCE

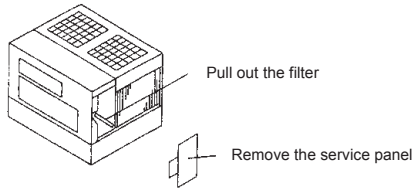
For Superior Performance And Lasting Durability, Please Do Not Forget To Conduct Proper And Regular Maintenance.

> ⚠ **Warning**
> **1.Do not wash the unit with water.**
> If washed with water, electrical shock may be caused.
> **2.Turn off power source.**
> For safety, turn the power source off before service work to avoid electronical shock.

1.1 Cleaning The Saranet Filter

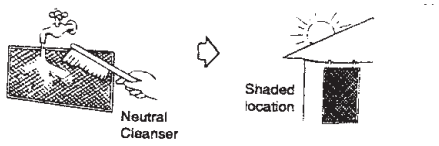
The standard unit comes with a saranet filter. Clean the saranet filter about once a week with a neutral cleanser and leave it to dry in a shady location. If using an air filter which is special order or field supplied, please refer to filter supplier for maintenance and care instructions.
Clean more regularly if the air filter gets very dirty.
If the filter gets blocked, air will not be sucked in properly, and the cooling effect will deteriorate.
Failure to clean the saranet filter may result in equipment breakdown or malfunction.

1. Removing the saranet filter.
The saranet filter is mounted in the service panel.
(in front of the heat exchanger.)



2. The saranet filter is cleaned with cleaner or washed in clear water.
Please wash the dirty saranet filter in lukewarm water with neutral detergent.
Please do not use hot water of 50ºC or more, as it can deform the filter.
Do not scrub or wring dry the filter as this can damage the filter.
Rinse thoroughly and ensure there is no detergent remaining.

3. When the filter is washed in clear water, dry it under the shade.
Please do not dry under direct sunshine and direct fire.



4. The saranet filter is installed as before.

1.2 Cleaning Of Panel

Clean dirt off panel as follows.
Use a household neutral cleanser such as dishwashing liquid. Moisten a soft cloth with the cleanser, then wipe lightly. Next, wipe three or four times with another soft cloth moisten with water.
Finally, wipe off all the remaining cleanser with a soft cloth.

Fingermarks
Grease
→ **Neutral Cleanser**

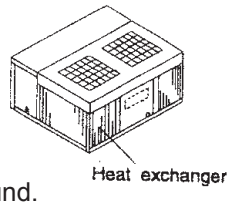
Moisten a soft cloth with the alcohol, then wipe off lightly. Isopropyl alcohol is sold at stores as reagents in small quantities.

Adhesive
Paste
→ **Isopropyl alcohol**

> Note:
> Alcohol is highly combustible. Take extreme care when handing. Also, do not use paint or adhesive thinner.

1.3 Cleaning The Outdoor Heat Exchanger

If you use your air conditioner for prolonged periods, the outdoor heat exchanger will become dirty, impairing its function and reducing the air conditioner's performance. Consult your equipment supplier or air conditioning contractor on how to clean the heat exchanger.



1.4 Starting The Air Conditioner After Service Works

Please turn on the power supply after checking is done and no abnormality is found.
Please do the following work.
It is confirmed that air inlet and outlet are not blocked.
It is confirmed that the earth connection line does not come off.
The earth connection line is firmly installed in the unit.
It is confirmed that there is neither lifting, blocking, nor bending of the drain-hose.
1. The controller is in the OFF position.
2. The power supply switch is turned on.

1.5 When The Air Conditioner Is Not To Be Used For A Long Time

If the air conditioner is not to be used for a long time due to seasonal change, etc., Please do the following work.

1. The power supply switch is turned off.
   If the power supply is kept on, several watts or several tends of watts will be wasted. The accumulation of dust, etc., can result in fire.
2. Filter, and drain pan must be cleaned. Pay attention to clean dust in the drain.
3. Run it for 4-5 hours with the air blowing until the inside is completely dry.
   Failing to do so can result in the growth of unhygienic, unhealthy mold in scattered areas throughout the room.

1.6 In Case Of Failure

(1) Never remodel the air conditioner by yourself. Consult your dealer for any repair service. Improper repair work can result in water leakage, electric shock, fire, etc.
(2) If the power breaker is frequently activated, get in touch with your dealer. Leaving the unit as it is under such conditions can result in fire or failure.
(3) If refrigerant gas blows out or leaks, stop the operation of the air conditioner. Thoroughly ventilate the room, and contact your dealer. Leaving the unit as it is can result in accidents due to oxygen deficiency.

2. Transferring Work And Construction

2.1 Transfer Of Installation

(1) When removing and reinstalling the air conditioner, consult with your dealer in advance to ascertain the cost of the professional engineering work required for transferring the installation.
(2) Please do not use refrigerant other than the specified refrigerant when you top-up/recharge the refrigerant at the new installation site .
(3) When moving or reinstalling the air conditioner, consult with your dealer. Defective installation can result in electric shock, fire, etc.

2.2 Place For Installation

Please do not use the unit in the following places.
(1) Places with a lot of oil, moisture, and dust.
(2) Places with high salinities such as seaside.
(3) Places where sulfur gas, volatile gas, and corroded gas are filled.
(4) Places where acid solution is frequently used.
(5) Places where special spray is frequently used.
(6) Hot spring zones.
(7) Near to machines that generate high cycles (High cycle welding machine etc.).
(8) Places where ventilation entrance of unit is closed by snowfall.
(9) The unit must be installed on stable, level surface.
The consequence of using a unit in the places mentioned above is the main body might corrode, the refrigerant might leak, the performance of the unit might decrease remarkably, and it might cause damage of parts in the unit.

2.3 Regarding Electric Work

(1) The electrical work must be undertaken by a person who is qualified as an electrical technician with respect to local governing laws.
(2) Please install the earth connection for the electric shock prevention.
(3) Never connect the grounding wire to a gas pipe, water pipe, arrestor, or telephone grounding wires. For details, consult with your dealer.
(4) In some types of installation sites, the installation of an earth leakage breaker is mandatory. For details, consult with your dealer.
(5) The breaker and the fuse must be of correct capacity.

2.4 Consideration Of The Noise

(1) Take sufficient measures against noise when installing the air conditioners at hospitals or communications related businesses.
(2) If the air conditioner is used in any of the above-mentioned environments, frequent operational failure can be expected. It is advisable to avoid these type of installation sites. For further details, consult with your dealer.
(3) Choose a place where cool air and noise from the outdoor air outlet of the air conditioner do not inconvenience the neighbors.
(4) Obstacles placed near the air outlet of the unit can decrease performance and increase noise. Avoid placing any obstacles adjacent to the air outlet.
(5) If the air conditioner produces any abnormal sound, consult your dealer.

2.5 Disposing Of The Unit

When you need to dispose of the unit, consult your dealer.
If pipes are removed incorrectly, refrigerant (fluorocarbon gas) may blow out and come into contact with your skin, causing injury. Releasing refrigerant into the atmosphere also damages the environments.

2.6 Maintenance And Inspection

(1) If the air conditioner is used throughout several seasons, the inside can get dirty and eventually reduce the performance.
(2) Depending upon the conditions of usage, foul odors can be generated and drainage can deteriorate due to dust, dirt, etc.

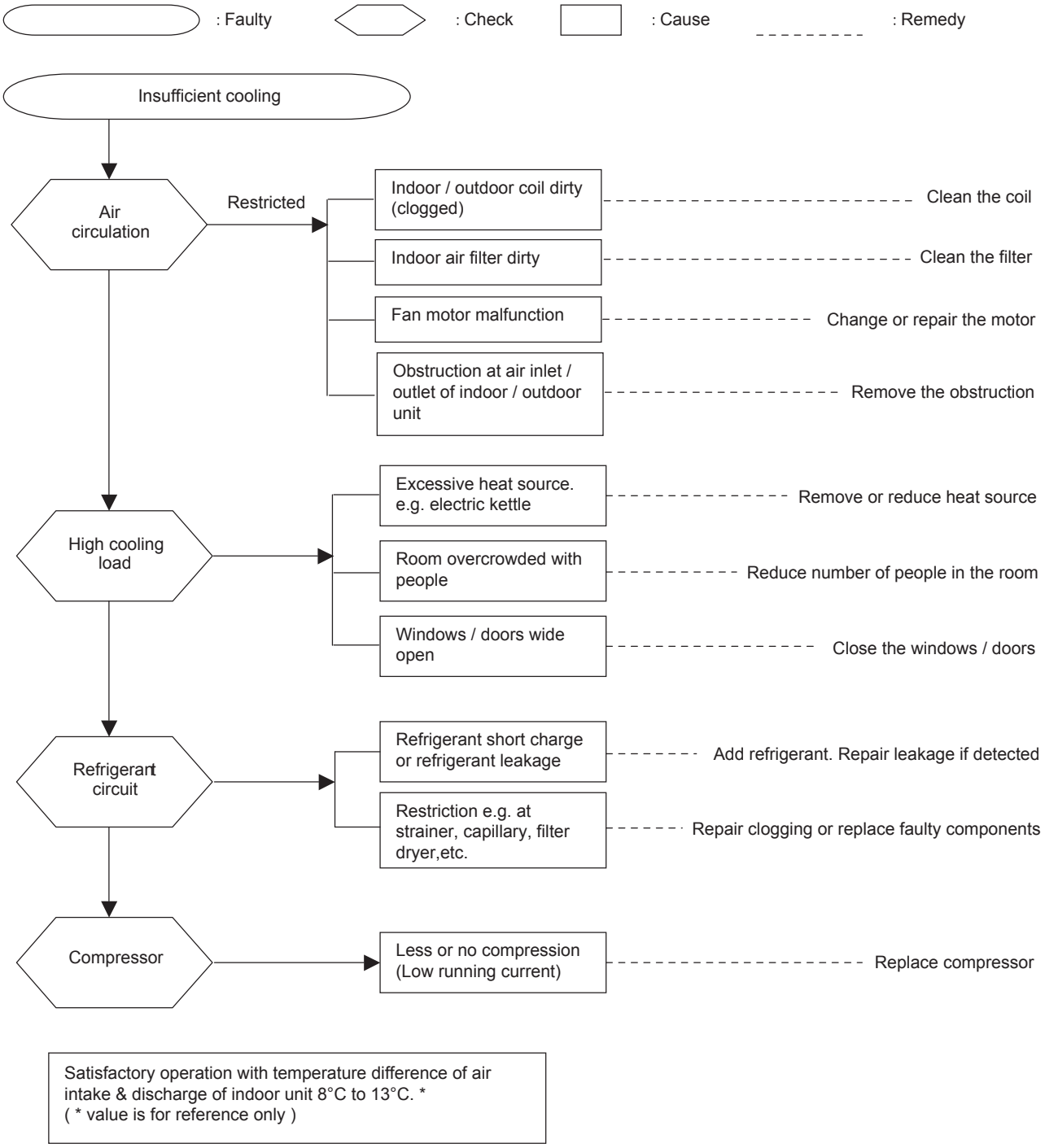
TROUBLESHOOTING

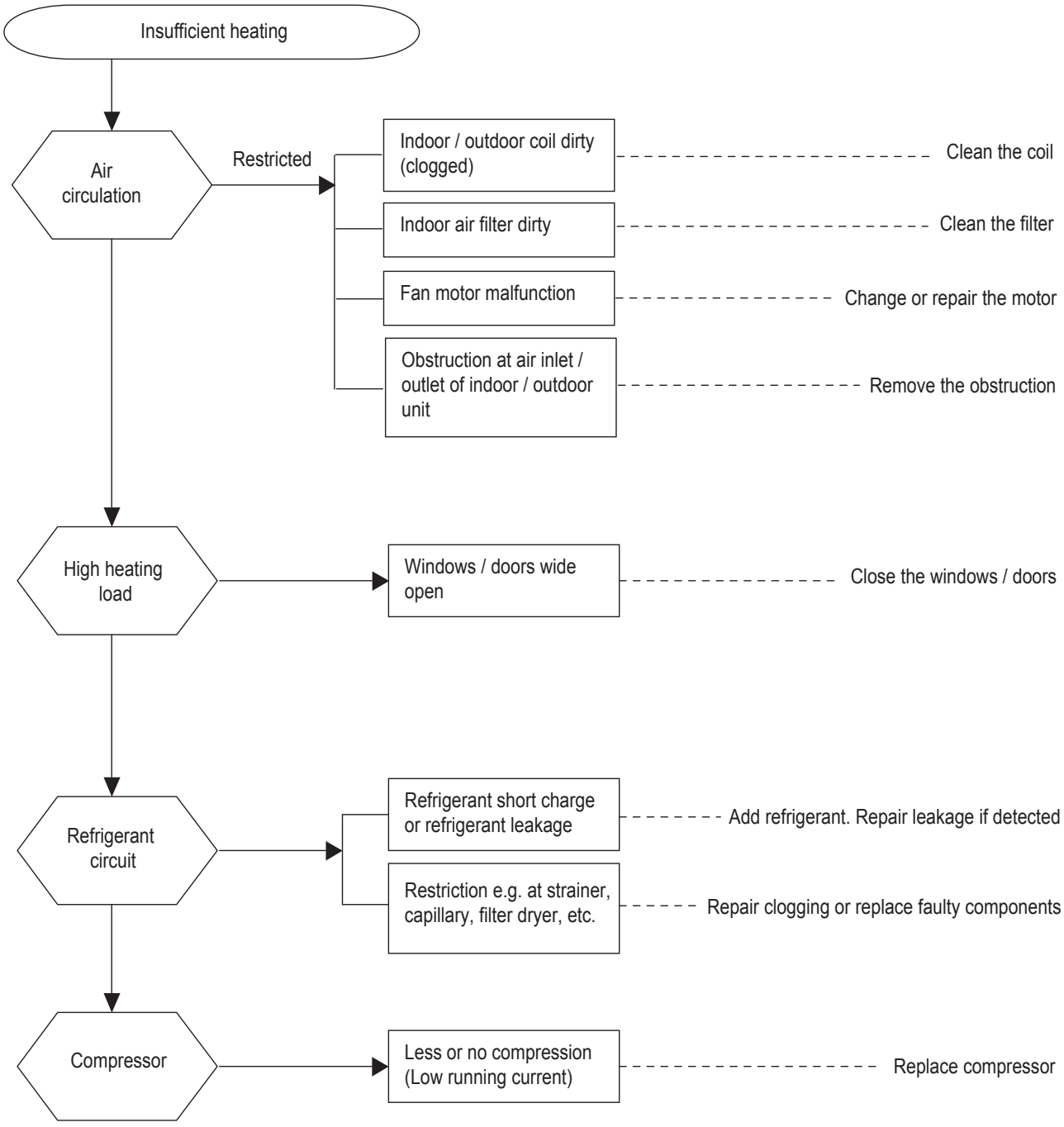
Whena malfunction of the air conditioner unit is detected, immediately switch off the main power supply before proceeding with the following troubleshooting procedures.
The following are common fault conditions and simple troubleshooting tips. If any other fault conditions which are not listed occur, contact your nearest local dealer. DO NOT attempt to troubleshoot the unit by yourself.

No	Fault conditions	Possible causes / corrective actions
1	The air conditioner unit will not resume after power failure.	• The auto restart function is not functioning. Please turn on the unit with the wireless / wired controller.
2	The compressor does not operate 3 minutes after the air conditioner unit is started.	• Protection against frequent starting. • Wait for 3 or 4 minutes for the compressor to start operating by it self.
3	The airflow is too slow or room cannot be cooled sufficiently.	• The air filter is dirty. • The doors and windows are opened. • The air suction and discharge of both indoor and outdoor units are clogged or blocked. • The regulated temperature or temperature setting is not low enough.
4	Discharge airflow has bad odor.	• Cigarettes, smoke particles, perfume and others, which might have adhered onto the coil, may cause odor. • Contact your nearest dealer.
5	Condensation on the front air grille of the indoor unit.	• This is caused by air humidity after an extended period o f operation. • The set temperature is too low. Increase the temperature setting and operate the unit at high fan speed.
6	Water flowing out from the air conditioner.	• Switch off the unit and contact your nearest dealer. This might be due to tilted installation.
7	Hissing airflow sound from the air conditioner unit during operation.	• Liquid refrigerant flowing into the evaporator coil.
8	The wireless controller display is dim.	• The batteries are discharged. • The batteries are not correctly inserted. • The assembly is not good.
9	Compressor operates continuously.	• Dirty air filter. Clean the air filter. • Temperature setting too low (cooling). Use higher temperature setting. • Temperature setting too high (heating), Use lower temperature setting.
10	No cool air comes out during cooling cycle, or no hot air comes out during heating cycle.	• Temperature setting too high (cooling). Use lower temperature setting. • Temperature setting too low (heating). Use higher temperature setting.
11	On heating cycle, warm air does not come out.	• Unit is in defrost mode. Heating operation will resume after defrost cycle ends.

ii) Diagnosis of Refrigerant Circuit / Application

There might be some causes where the unit starts running but does not perform satisfactorily, i.e.insuf cient cooling. Judgement could be made by measuring temperature difference of indoor unit's intake and discharge air as well as running current.





Satisfactory operation with temperature difference of air intake & discharge of indoor unit 14°C to 20°C. *
(* value is for reference only)

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TM-4RT-A-AM-A1