DUNNAIR
(Aust) Pty Ltd

R410a Refrigerant

SH73

Split Ducted Model

PERFORMANCE DATA

INDOOR COIL ENTERING AIR TEMP ^{0}c		OUTDOOR COIL ENTERING TEMPERATURE ^{0}C											
		30°C			35°C			40°C			45°C		
DB °C	WB °C	Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C	Tot. Cap KW	Sens.Cap KW	LWB °C
21	17	71.4	44.0	10.9	67.7	42.5	11.2	63.8	40.8	11.6	61.1	40.8	11.8
	18	73.9	39.7	11.5	70.1	38.1	12.3	66.0	36.3	12.6	63.4	35.2	12.9
	19	76.6	35.2	13.2	72.7	33.6	13.5	68.4	31.8	13.9	65.8	30.8	14.1
	20	79.5	30.5	14.1	75.4	28.8	14.5	70.9	27.0	14.9	68.4	25.9	15.2
23	17	71.7	52.6	10.8	68.0	51.1	11.2	64.1	49.4	11.5	61.4	48.3	11.8
	18	73.9	48.2	11.9	70.1	46.6	12.2	66.0	44.8	12.6	63.4	43.7	12.9
	19	76.6	43.7	13.0	72.6	42.1	13.4	68.3	40.4	13.8	65.8	39.3	14.1
	20	79.4	39.0	14.1	75.4	37.3	14.5	70.9	35.5	14.9	68.3	34.4	15.1
	21	82.5	34.3	15.1	78.2	32.6	15.5	73.5	30.7	15.9	71.0	29.6	16.2
25	17	72.4	60.5	10.7	68.7	58.8	11.0	64.8	57.0	11.4	62.3	55.8	11.7
	18	74.1	58.5	12.0	70.3	55.5	12.3	66.2	53.7	12.7	63.6	52.6	13.0
	19	76.5	55.7	13.0	72.6	50.6	13.4	68.3	48.9	13.8	65.7	47.8	14.0
	20	79.4	52.5	14.1	75.3	45.9	14.5	70.8	44.0	14.9	68.3	43.0	15.1
	21	82.4	49.0	15.1	78.2	41.1	15.5	73.5	39.2	15.9	71.0	38.2	16.1
27	17	73.7	67.1	10.6	70.2	65.1	10.9	66.4	62.8	11.3	64.0	61.4	11.6
	18	74.8	65.6	11.8	71.0	64.0	12.1	66.9	62.2	12.5	65.0	61.1	12.7
	19	76.7	60.9	12.8	72.8	59.3	13.2	68.5	57.5	13.6	66.0	56.4	13.8
	20	79.4	56.6	14.0	75.3	54.9	14.3	70.8	53.1	14.7	68.3	52.1	14.9
	21	82.3	51.3	15.1	78.1	49.6	15.5	73.4	47.7	15.9	70.9	46.7	16.1
29	17	75.5	72.7	10.5	72.1	7.3	10.9	68.3	67.5	11.3	66.0	66.0	11.5
	18	76.2	71.2	11.7	72.5	69.2	12.1	68.5	67.1	12.5	66.0	66.0	12.7
	19	77.3	70.0	12.9	73.4	68.4	13.2	69.1	66.6	13.6	66.0	66.0	13.9
	20	79.5	64.9	14.0	75.4	63.2	14.3	70.9	61.3	14.8	68.4	60.3	15.0
	21	82.3	59.8	15.1	78.1	58.1	15.5	73.4	56.2	15.9	70.9	55.2	16.1
31	17	77.9	77.5	10.2	74.6	74.5	10.5	70.9	70.9	10.9	68.8	68.8	11.1
	18	78.3	76.6	11.5	74.7	74.2	11.8	70.9	70.9	12.2	68.8	68.8	12.5
	19	78.7	75.8	12.7	74.9	73.9	13.1	70.9	70.9	13.5	68.8	68.8	13.7
	20	80.0	73.8	13.9	76.0	72.2	14.3	71.5	70.3	14.7	69.0	68.8	15.0
	21	82.4	68.9	15.1	78.2	67.2	15.5	73.5	65.3	15.9	71.0	64.3	16.2

Capacity multipliers should be applied to the above capacities to adjust for reduced or increased air flow.

Technical Specification SH73 Split Ducted Model

Indoor Unit Model Number	SH73N	Nominal Evaporator Air Flow (l/s)	3900
Outdoor Unit Model Number	SH73W	Number of Compressors	2
Total Cooling Capacity (kW)*	72.8	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	59.3	Normal Max. Current (Amps /Phase)	60.6
Heating Capacity (kW) **	66.6	Power Input (kW)	28.6

*Entering air @ 27/19 °C and ambient 35°C

** Entering air @ 21 °C DB and 7°C ambient

Cooling Performance Correction

Capacity	% Rated Air Quantity - Nominal 3900 l/s				
	80	90	100	110	120
Total Cooling	0.95	0.98	1.00	1.02	1.04
Sensible Cooling	0.89	0.95	1.00	1.05	1.09

Heating Performance Data

Outdoor Coil Entering DB temperature °C					
	0	4	8	12	18
Heating Capacity (kW)	46.5	51.4	59.4	65.3	78.2

Heating Performance Correction

% Rated Air Quantity	Multiplier	Return Air Temp. °C	Multiplier	Outdoor Air Temp. °C	Approx. Defrost Factor
80	0.93	15	1.05	0	0.80
90	0.97	18	1.03	2	0.78
100	1.00	21	1.00	4 - 6	0.75
110	1.03	24	0.97	7	0.87
120	1.05	27	0.95	8	1.00

Compressor

Number Per Unit	2
Type	Scroll
RPM (Nom)	2900
Normal Max. Current (amps /phase)	2 x 22.1
Locked Rotor Current (amps /phase)	2 x 102
Displacement (m^3 /h)	2 x 26.4

Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	4000	Defrost	
Low Pressure Switch (Setting kPa)	300	Initiation Temperature (°C)	-2
Indoor Fan Overload	Internal	Termination Temperature (°C)	18
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	30
Compressor Delay Timer	300 sec	Max De-Ice Period (min)	10

Standard Features

Auto reset high pressure and auto reset low pressure cutouts	
Thermal overload protection on all motors	Suction line accumulator
Compressor crankcase heater	Automatic de-ice system
Limit start timer (anti short cycling)	Thermally insulated indoor unit

Evaporator (Indoor Coil)

Type	Copper Tube / Aluminium Fins
Face Area (m^2)	1.60
Air Quantity (l/s)	3900

Evaporator (Indoor fan)

Number of Fans	1
Type	Centrifugal
Drive	Belt
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	5.5
Maximum Fan Speed (rpm)	790

Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	60.6

Condenser (Outdoor Coil)

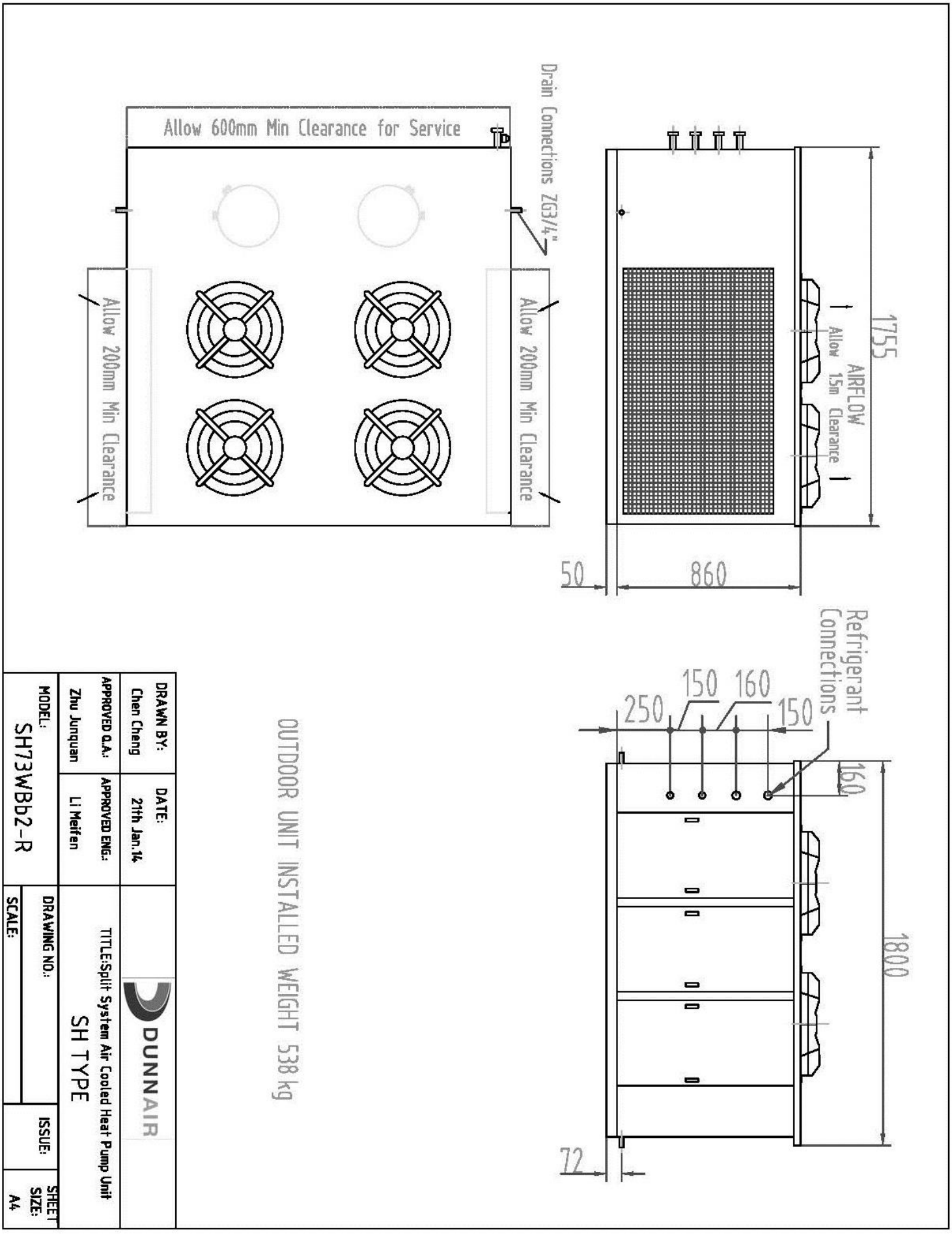
Type	Copper Tube / Aluminium Fins
Face Area (m^2)	2 x 1.03

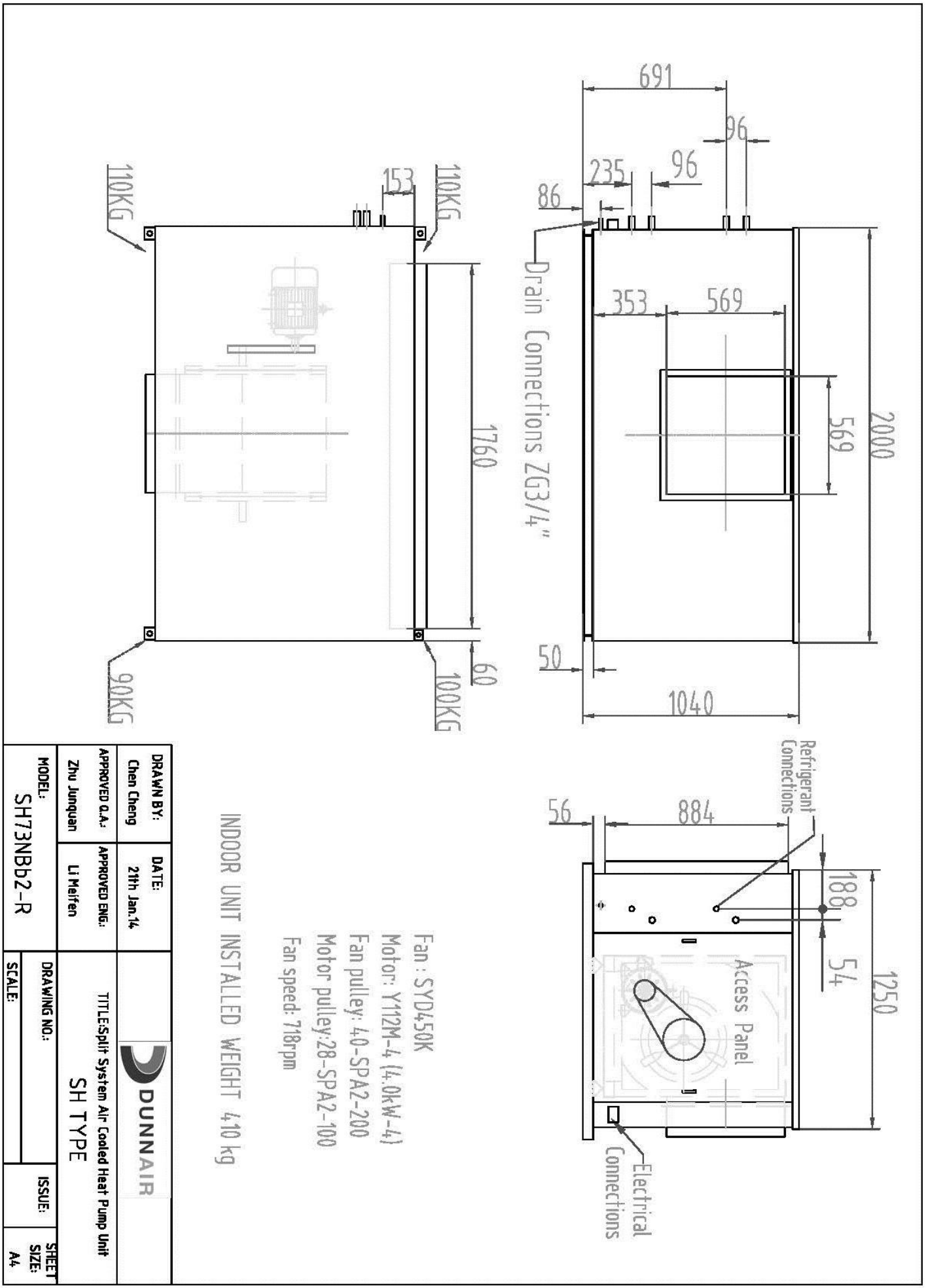
Condenser (Outdoor Fan)

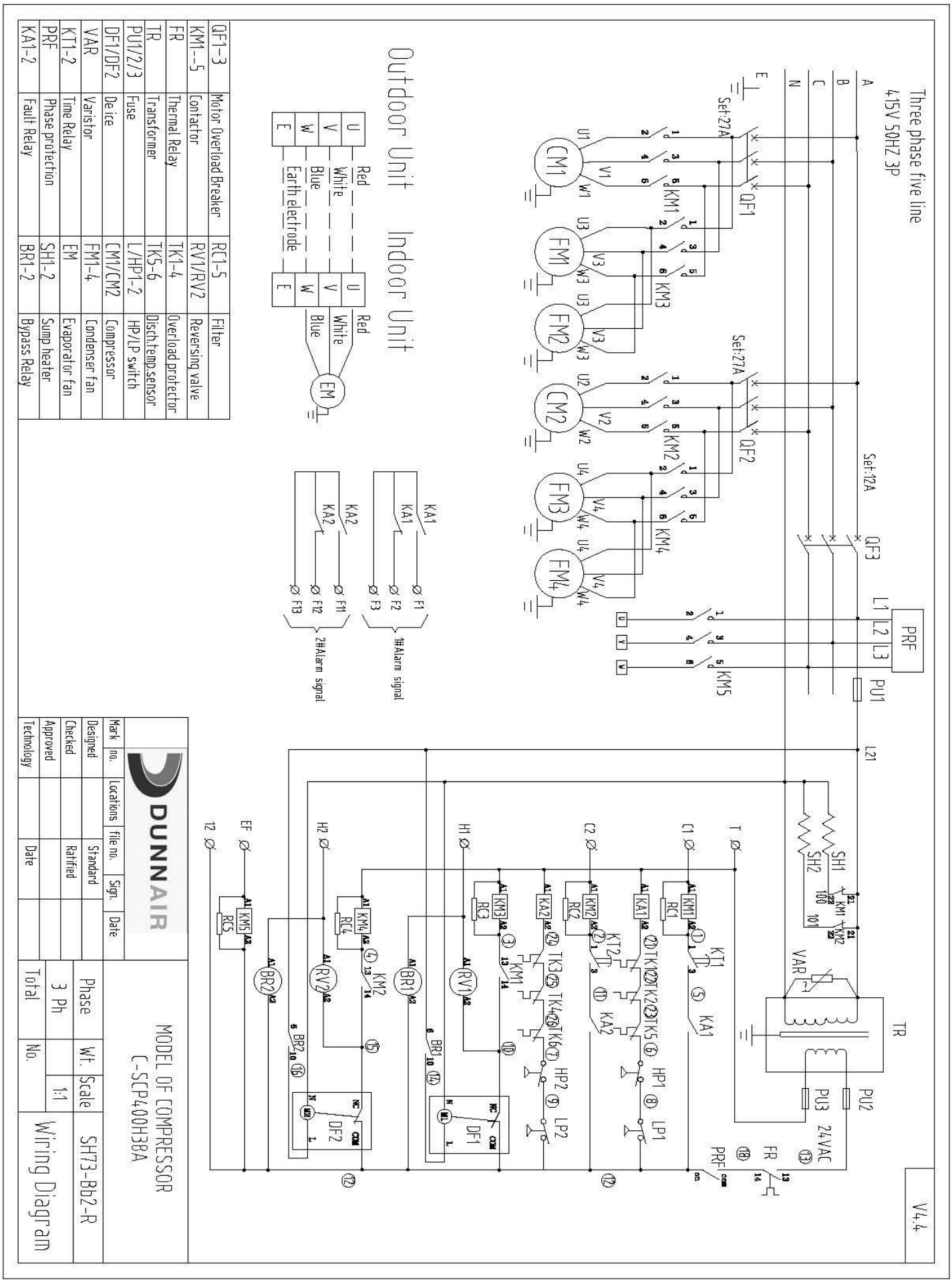
Number of Fans	4
Type	Axial
Drive	Direct
Motor Watts /rpm	4 x 370 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

Refrigeration System

Refrigerant Type	R410A
Charge (kg)	2 x 7.8
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TX Valve
Line Size (mm)	
Liquid Line 0 – 50 Meters	19 (3/4")
Gas 0 Line – 50 Meters	29 (1 1/8")


Allow 600mm Min Clearance for Service
Drain Connections ZG3/4"
Allow 200mm Min Clearance
Allow 200mm Min Clearance
1755
AIRFLOW
Allow 1.5m Clearance
50
860
Refrigerant Connections
250
150
160
150
160
1800
72
OUTDOOR UNIT INSTALLED WEIGHT 538 kg
DRAWN BY: Chen Cheng
DATE: 21th Jan.14
APPROVED Q.A.: Zhu Junquan
APPROVED ENG.: Li Meifen
TITLE:Split System Air Cooled Heat Pump Unit
SH TYPE
MODEL: SH73WBb2-R
DRAWING NO.:
SCALE:
ISSUE:
SHEET SIZE: A4
DUNNAIR


691
96
235
96
86
Drain Connections ZG3/4"
353
569
569
2000
50
1040
110KG
153
110KG
1760
60
90KG
100KG
Refrigerant Connections
56
884
188
54
1250
Access Panel
Electrical Connections
Fan : SYD450K
Motor: Y112M-4 (4.0kW-4)
Fan pulley: 40-SPA2-200
Motor pulley:28-SPA2-100
Fan speed: 718rpm
INDOOR UNIT INSTALLED WEIGHT 410 kg
DRAWN BY: Chen Cheng
DATE: 21th Jan.14
APPROVED Q.A.: Zhu Junquan
APPROVED ENG.: Li Meifen
DUNNAIR
TITLE:Split System Air Cooled Heat Pump Unit
SH TYPE
MODEL: SH73NBb2-R
DRAWING NO.:
ISSUE:
SCALE:
SHEET SIZE: A4



QF1-3	Motor Overload Breaker
KM1--5	Contactor
FR	Thermal Relay
TR	Transformer
PU1/2/3	Fuse
DF1/DF2	De ice
VAR	Varistor
KT1-2	Time Relay
PRF	Phase protection
KA1-2	Fault Relay

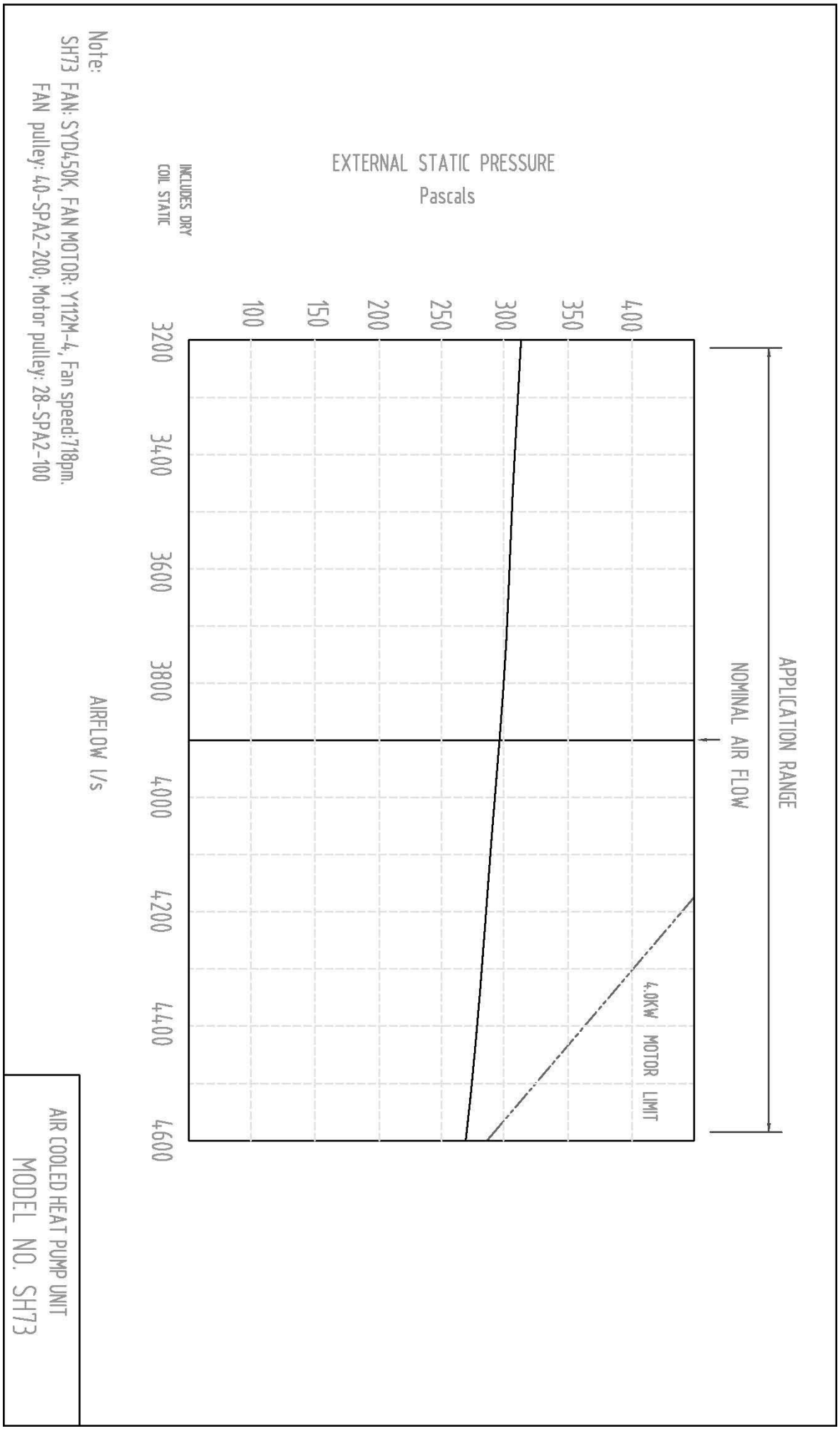
RC1-5	Filter
RV1/RV2	Reversing valve
TK1-4	Overload protector
TK5-6	Disch.temp.sensor
L/HP1-2	HP/LP switch
CM1/CM2	Compressor
FM1-4	Condenser fan
EM	Evaporator fan
SH1-2	Sump heater
BR1-2	Bypass Relay

DUNNAIR

MODEL OF COMPRESSOR
C-SCP400H38A

Mark	no.	Locations	file no.	Sign.	Date
Designed			Standard		
Checked			Ratified		
Approved					
Technology		Date			

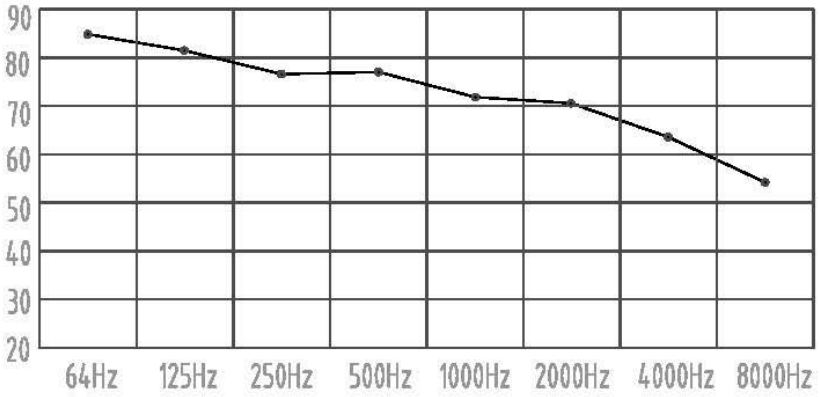
Phase	Wt.	Scale	SH73-Bb2-R
3 Ph		1:1	
Total	No.		Wiring Diagram


EXTERNAL STATIC PRESSURE
Pascals
INCLUDES DRY COIL STATIC
100
150
200
250
300
350
400
3200
3400
3600
3800
4000
4200
4400
4600
AIRFLOW l/s
APPLICATION RANGE
NOMINAL AIR FLOW
4.0KW MOTOR LIMIT
Note:
SH73 FAN: SYD450K, FAN MOTOR: Y112M-4, Fan speed:718pm.
FAN pulley: 4.0-SPA2-200, Motor pulley: 28-SPA2-100
AIR COOLED HEAT PUMP UNIT
MODEL NO. SH73

SH73W Sound Pressure Curve
A Class: 78.4dB

Hz	dB
64Hz	84.6
125Hz	81.2
250Hz	77.1
500Hz	77.6
1000Hz	71.8
2000Hz	70.2
4000Hz	63.5
8000Hz	54.2

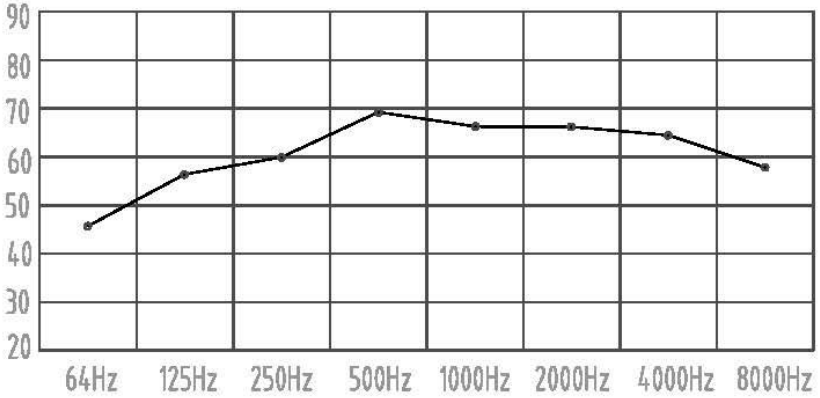
Sound Pressure Curve (A Class: 78.4dB) dB



SH73N Sound Pressure Curve
A Class: 73.0dB

Hz	dB
64Hz	46
125Hz	57
250Hz	60
500Hz	69
1000Hz	67
2000Hz	67
4000Hz	65
8000Hz	58

Sound Pressure Curve (A Class: 73.0dB) dB



Note: Occupant at least 1.0m from sound source.

DRAWN BY: Chen Cheng	DATE: 2014-3-5	DUNNAIR		
APPROVED Q.A.: Zhu Junquan	APPROVED ENG.: Li Meifen	TITLE: Split System Air Cooled Heat Pump Unit SH TYPE		
MODEL: SH73		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4