DUNNAIR (Aust) Pty Ltd

R410a Refrigerant

SHS35

Split Ducted Model

PERFORMANCE DATA

INDOOR COIL ENTERING AIR TEMP °c		OUTDOOR COIL ENTERING TEMPERATURE °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	34.1	21.1	11.4	32.5	20.4	11.7	30.8	19.7	12.0	29.9	19.7	12.2
	18	35.3	18.9	12.0	33.7	18.2	12.8	31.9	17.5	13.1	31.1	17.1	13.2
	19	36.5	16.5	13.6	34.8	15.8	13.9	33.0	15.0	14.2	32.2	14.7	14.3
	20	37.7	14.3	14.7	36.0	13.6	15.0	34.1	12.8	15.3	33.4	12.5	15.5
23	17	34.1	25.5	11.5	32.6	24.8	11.7	30.8	24.1	12.1	30.0	23.7	12.2
	18	35.2	22.9	12.4	33.6	22.2	12.7	31.8	21.5	13.0	31.0	21.1	13.2
	19	36.4	20.7	13.5	34.8	20.0	13.8	33.0	19.2	14.2	32.2	18.9	14.3
	20	37.7	18.5	14.7	36.0	17.8	15.0	34.1	17.0	15.3	33.4	16.7	15.4
	21	38.9	16.3	15.7	37.2	15.7	16.0	35.3	14.9	16.3	34.6	14.7	16.4
25	17	34.3	29.7	11.4	32.7	29.0	11.7	31.0	28.3	12.0	30.2	27.9	12.1
	18	35.3	28.7	12.5	33.7	26.8	12.8	31.9	26.1	13.1	31.1	25.7	13.2
	19	36.4	27.5	13.5	34.7	24.2	13.8	32.9	23.5	14.1	32.1	23.2	14.3
	20	37.6	26.2	14.7	36.0	22.0	15.0	34.1	21.2	15.3	33.3	20.9	15.4
	21	38.9	27.9	15.7	37.2	19.8	16.0	35.2	19.1	16.3	34.6	18.8	16.4
27	17	34.9	32.4	11.2	33.4	31.0	11.5	31.7	30.7	11.7	31.0	30.2	11.9
	18	35.4	31.5	12.4	33.8	30.3	12.7	32.1	30.0	13.0	32.0	29.7	13.2
	19	36.4	29.5	13.5	34.8	28.3	13.7	33.0	28.1	14.1	33.0	27.8	14.2
	20	37.6	26.9	14.7	35.9	25.8	15.0	34.0	25.5	15.3	33.3	25.2	15.4
	21	38.9	24.7	15.7	37.2	23.5	16.0	35.2	23.3	16.3	34.5	23.0	16.4
29	17	35.8	35.0	11.1	34.4	33.9	11.4	32.8	32.8	11.7	32.1	32.1	11.8
	18	36.0	34.5	12.3	34.5	33.7	12.6	32.8	32.8	12.9	32.1	32.1	13.0
	19	36.6	33.5	13.5	34.8	32.9	13.8	33.1	32.1	14.1	32.1	32.1	14.3
	20	37.7	31.3	14.6	36.0	30.6	14.9	34.1	29.8	15.2	33.4	29.5	15.3
	21	38.8	28.9	15.7	37.1	28.3	15.9	35.1	27.5	16.3	34.5	27.2	16.4
31	17	37.0	37.0	10.9	35.6	35.6	11.2	34.1	34.1	11.6	33.5	33.5	11.7
	18	37.1	36.8	12.1	35.6	35.6	12.3	34.1	34.1	12.6	33.5	33.5	12.8
	19	37.1	36.7	13.3	35.6	35.6	13.6	34.1	34.1	13.9	33.5	33.5	14.1
	20	37.8	35.7	14.5	36.1	35.0	14.7	34.2	34.3	15.1	33.5	33.5	15.2
	21	38.9	32.9	15.7	37.2	32.2	16.0	35.3	31.4	16.4	34.6	31.1	16.5

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

Technical Specification SHS35 Split Ducted Model

Indoor Unit Model Number	SHS35N	Nominal Evaporator Air Flow (l/s)	2000
Outdoor Unit Model Number	SHS35W	Number of Compressors	1
Total Cooling Capacity (kW)*	34.8	Power Requirements (Volt /Phase)	415 / 3
Sensible Cooling Capacity (kW)*	28.3	Normal Max. Current (Amps /Phase)	27.9
Heating Capacity (kW) **	34.2	Power Input (kW)	12.65

*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 2000 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)	26.1	29.1	33.3	36.9	43.7

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	1
Type	Scroll
RPM (Nom)	2900
Normal Max. Current (amps /phase)	22.1
Locked Rotor Current (amps /phase)	102
Displacement (m^3 /h)	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)	0.78
Air Quantity (l/s)	2000

Evaporator (Indoor fan)

Number of Fans	2
Type	Centrifugal
Drive	Direct
Motor Voltage /Phase /Frequency	415 / 3 / 50
Motor Power (kW)	2 x 0.55
Maximum Fan Speed (rpm)	1045

Electrical

Power Requirements	3 phase / 415V / 50Hz
Normal Max. Current (Amps /Phase)	27.6

Condenser (Outdoor Coil)

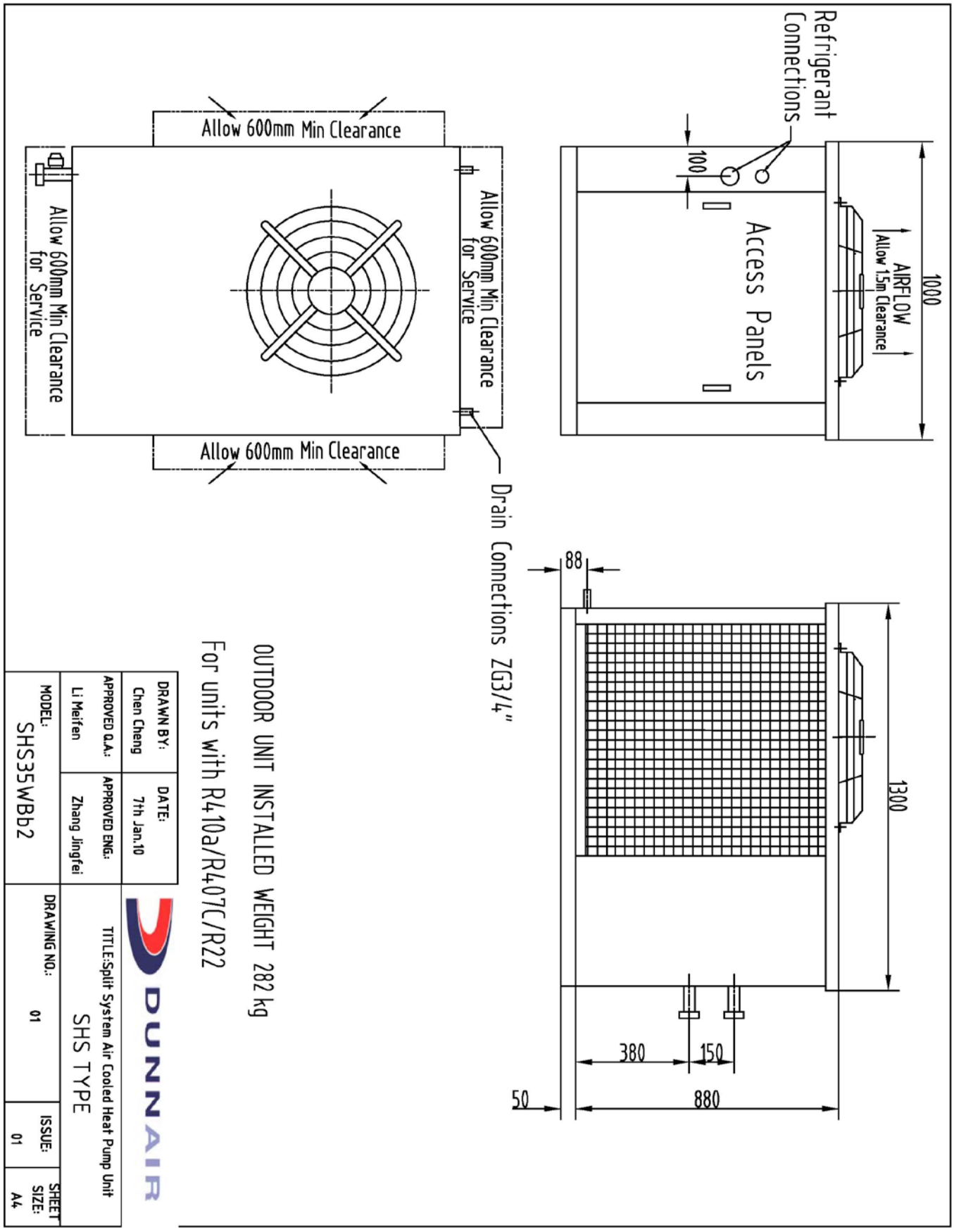
Type	Copper Tube / Aluminium Fins
Face Area (m^2)	2 x 0.61

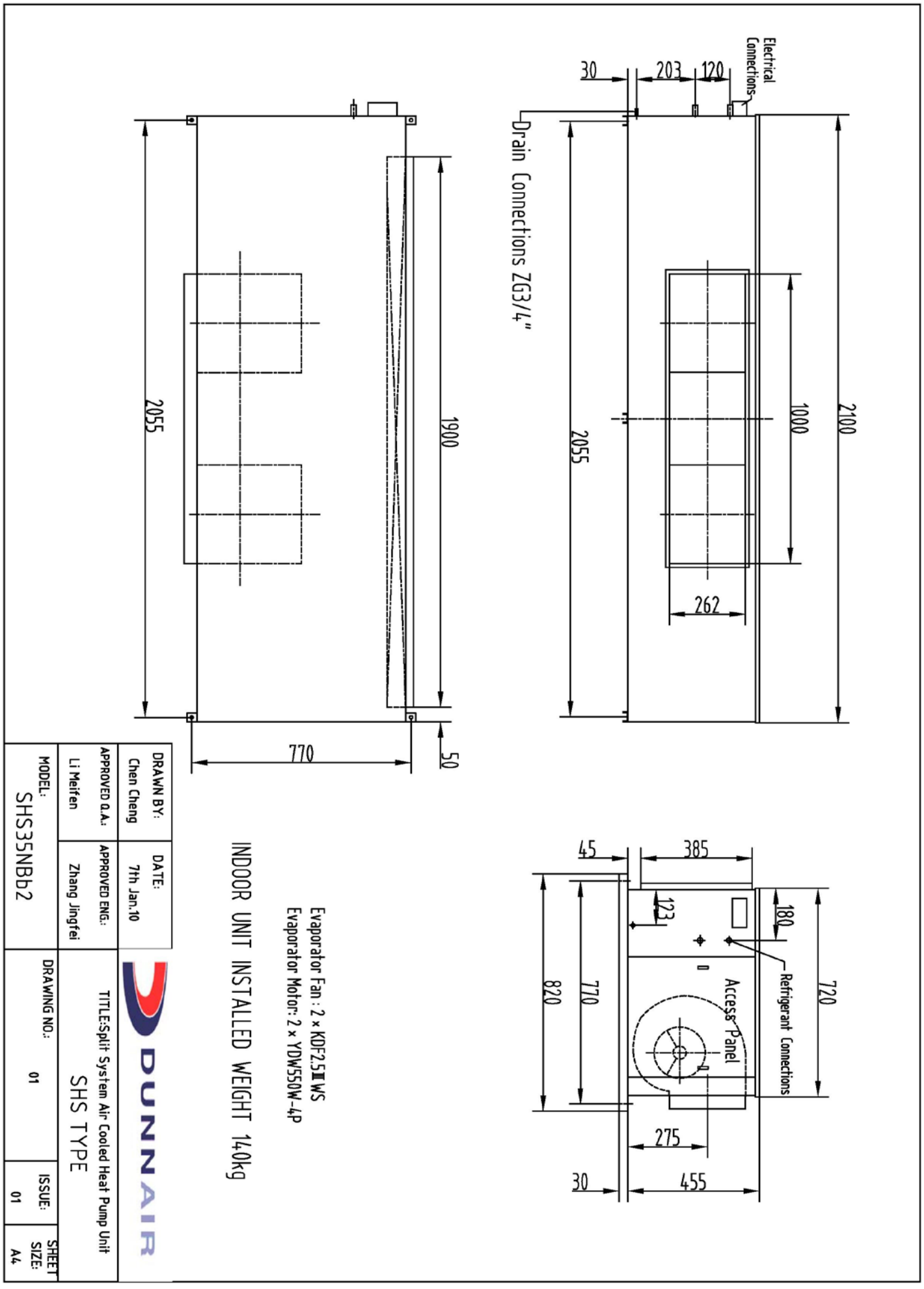
Condenser (Outdoor Fan)

Number of Fans	1
Type	Axial
Drive	Direct
Motor Watts /rpm	750 / 950
Motor Voltage /Phase /Frequency	415 / 3 / 50

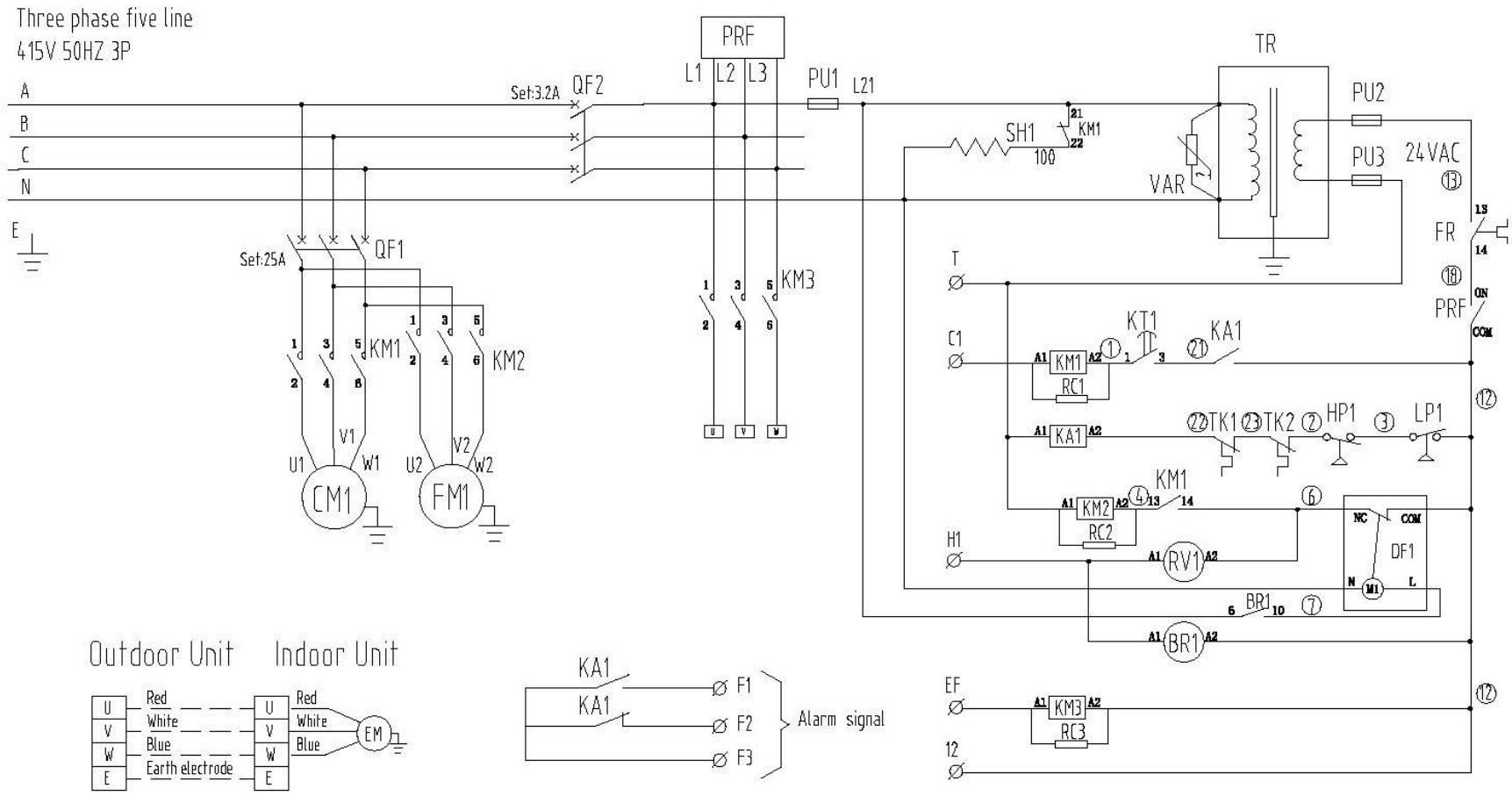
Refrigeration System

Refrigerant Type	R410A
Charge (kg)	7.6
Service Connections	Rotor Lock Valves
Expansion Control - In / Outdoor Unit	TX Valve
Line Size (mm)	
Liquid Line 0 – 50 Meters	22 (7/8")
Gas Line 0 – 50 Meters	29 ($1^1/_8$")


Refrigerant Connections
100
Access Panels
AIRFLOW
Allow 1.5m Clearance
1000
Allow 600mm Min Clearance
Allow 600mm Min Clearance for Service
Allow 600mm Min Clearance for Service
Allow 600mm Min Clearance
Drain Connections ZG3/4"
88
1300
380
150
50
880
OUTDOOR UNIT INSTALLED WEIGHT 282 kg
For units with R410a/R407C/R22
DUNNAIR
DRAWN BY: Chen Cheng
DATE: 7th Jan.10
APPROVED Q.A.: Li Meifen
APPROVED ENG.: Zhang Jingfei
TITLE:Split System Air Cooled Heat Pump Unit
SHS TYPE
MODEL: SHS35WBb2
DRAWING NO.: 01
ISSUE: 01
SHEET SIZE: A4


Electrical Connections
30
203
120
Drain Connections ZG3/4"
2055
1000
2100
262
2055
1900
770
50
45
385
123
180
820
770
Access Panel
Refrigerant Connections
720
275
30
455
INDOOR UNIT INSTALLED WEIGHT 140kg
Evaporator Fan : 2 × KDF2.5Ⅱ WS
Evaporator Motor: 2 × YDW550W-4P
DRAWN BY: Chen Cheng
DATE: 7th Jan.10
APPROVED Q.A.: Li Meifen
APPROVED ENG.: Zhang Jingfei
MODEL: SHS35NBb2
TITLE:Split System Air Cooled Heat Pump Unit
SHS TYPE
DRAWING NO.: 01
ISSUE: 01
SHEET SIZE: A4
DUNNAIR

V4.4



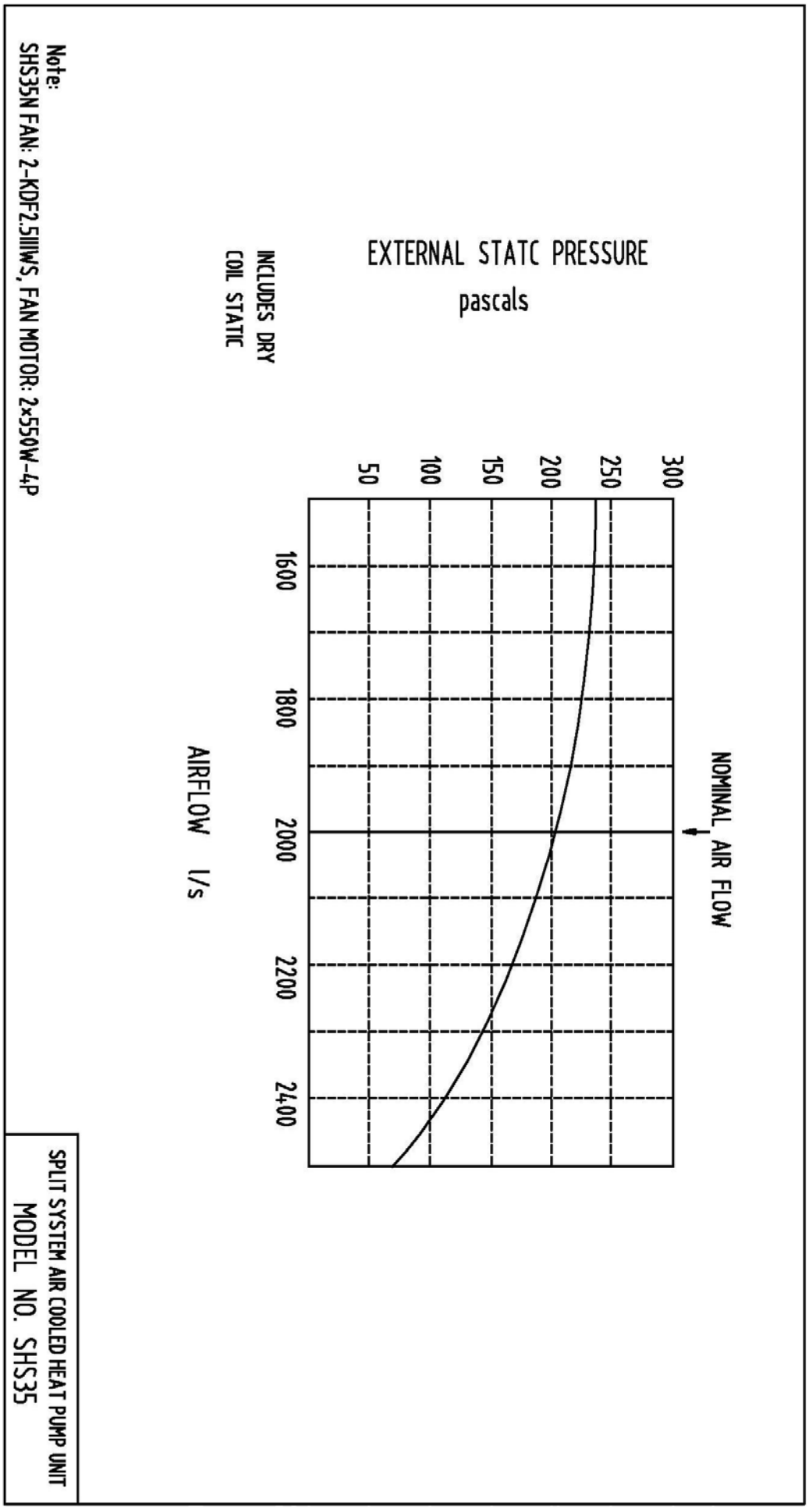
QF1-2	Motor Overload Breaker	RC1-3	Filter
KM1--3	Contactor	RV1	Reversing valve
FR	Thermal Relay	TK1	Overload protector
TR	Transformer	TK2	Disch.temp.sensor
PU1/2/3	Fuse	H/LP1	HP/LP switch
DF1	De ice	CM1	Compressor
VAR	Varistor	FM1	Condenser fan
KT1	Time Relay	EM	Evaporator fan
PRF	Phase protection	SH1	Sump heater
KA1	Fault Relay	BR1	Bypass Relay

DUNNAIR

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

MODEL OF COMPRESSOR
C-SCP400H38A

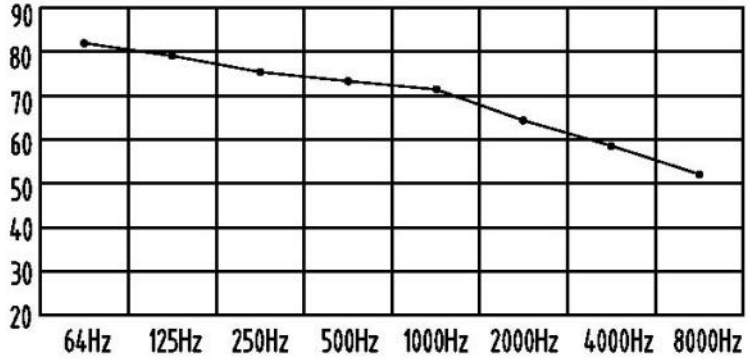
Phase	Wt.	Scale	SHS35-Bb2-R
3 Ph		1:1	Wiring Diagram
Total	No.		


Note:
SHS35N FAN: 2-KDF2.5IIIWS, FAN MOTOR: 2×550W-4P
INCLUDES DRY COIL STATIC
EXTERNAL STATC PRESSURE
pascals
50
100
150
200
250
300
1600
1800
2000
2200
2400
AIRFLOW l/s
NOMINAL AIR FLOW
SPLIT SYSTEM AIR COOLED HEAT PUMP UNIT
MODEL NO. SHS35

SHS35W Sound Pressure Curve
A Class: 75.3dB

Hz	dB
64Hz	81.2
125Hz	79.0
250Hz	76.1
500Hz	72.6
1000Hz	70.8
2000Hz	64.8
4000Hz	59.1
8000Hz	52.0

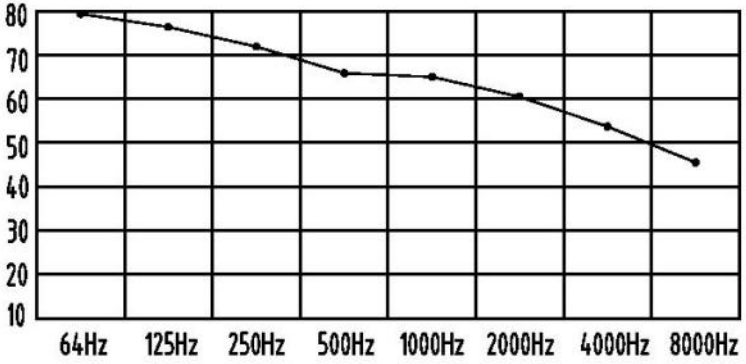
Sound Pressure Curve (A Class: 75.3dB) dB



SHS35N Sound Pressure Curve
A Class: 70.3 dB

Hz	dB
64Hz	79.8
125Hz	77.2
250Hz	71.5
500Hz	66.3
1000Hz	65.6
2000Hz	60.1
4000Hz	53.8
8000Hz	45.5

Sound Pressure Curve (A Class: 70.3dB) dB



Note: Occupant at least 1.0m from sound source.

DRAWN BY: Chen Cheng	DATE: 2524th.Oct.2010	DUNNAIR		
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	TITLE: Split System Air Cooled Heat Pump Unit SHS TYPE		
MODEL: SHS35		DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4