



DUNNAIR
(Aust) Pty Ltd

R410a Refrigerant

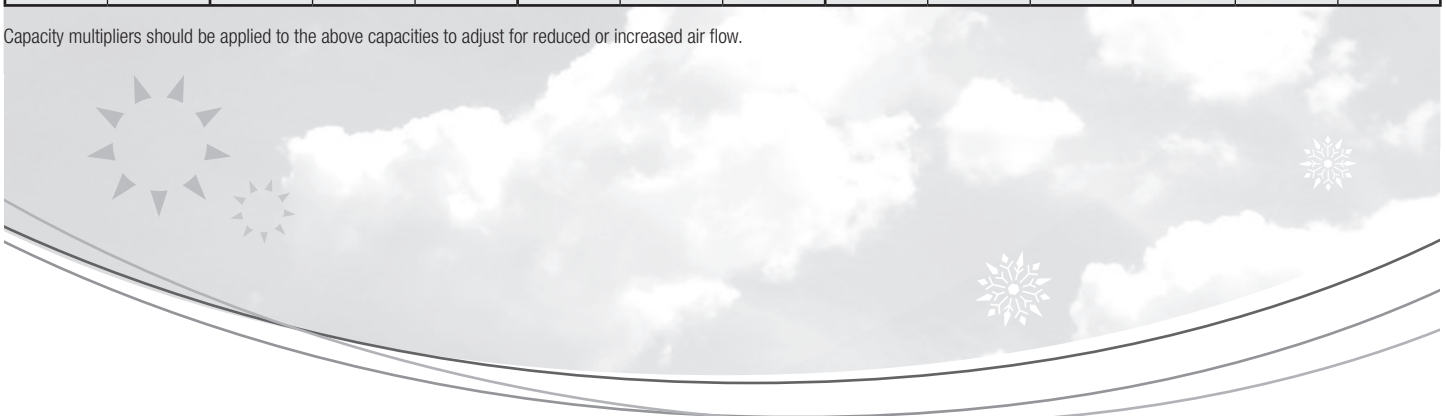
SHS20

Split Ducted Model

Performance Data

INDOOR COIL ENTERING AIR TEMP °C		OUTDOOR COIL ENTERING AIR TEMPERATURE °C											
		30°C			35°C			40°C			45°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
DB °C	WB °C												
21	17	18.8	11.6	11.5	17.9	11.2	11.8	17.0	10.8	12.1	16.5	10.8	12.2
	18	19.4	10.3	12.1	18.5	12.9	12.9	17.6	9.5	13.2	17.1	9.3	13.3
	19	20.0	9.1	13.6	19.1	13.9	13.9	18.1	8.3	14.2	17.6	8.0	14.3
	20	20.7	7.8	14.7	19.7	15.0	15.0	18.7	7.0	15.3	18.2	6.8	15.5
23	17	18.8	14.0	11.4	18.0	13.7	11.6	17.0	13.3	11.9	16.5	13.1	12.1
	18	19.4	12.7	12.5	18.5	12.3	12.8	17.5	11.9	13.1	17.0	11.7	13.3
	19	20.0	11.4	13.6	19.1	11.0	13.9	18.1	10.6	14.2	17.6	10.4	14.3
	20	20.7	10.1	14.8	19.7	9.8	15.1	18.7	9.3	15.5	18.2	9.1	15.6
	21	21.3	8.9	15.9	20.4	8.5	16.2	19.3	8.1	16.5	18.9	7.9	16.7
25	17	18.9	16.4	11.4	18.0	16.1	11.7	17.1	15.7	12.0	16.6	15.5	12.2
	18	19.4	15.9	12.6	18.5	14.8	12.8	17.6	14.4	13.0	17.1	14.2	13.3
	19	20.0	15.2	13.5	19.1	13.4	13.8	18.1	13.0	14.0	17.6	12.8	14.3
	20	20.6	14.5	14.7	19.7	12.1	15.0	18.7	11.6	15.3	18.2	11.4	15.5
	21	21.3	13.7	15.9	20.3	10.3	16.6	19.3	10.5	16.5	18.8	10.3	16.6
27	17	19.2	17.9	11.2	18.4	17.5	11.5	17.5	17.0	11.8	17.0	16.7	12.0
	18	19.5	17.4	12.4	18.6	17.0	12.7	17.6	17.1	13.0	17.1	16.4	13.2
	19	20.0	16.2	13.6	19.9	15.9	13.4	18.1	17.6	14.2	17.6	18.2	14.3
	20	20.6	14.8	14.7	20	15.0	14.6	18.6	18.2	15.3	18.2	13.8	15.4
	21	21.3	13.6	15.8	20.3	13.2	16.1	19.3	18.8	16.5	18.8	12.6	16.6
29	17	19.7	19.3	11.1	18.9	18.7	11.3	18.0	18.0	11.6	17.5	17.5	11.8
	18	19.8	19.1	12.3	18.9	18.6	12.6	18.0	18.0	12.9	17.5	17.5	13.0
	19	21.2	18.5	13.6	21.0	18.2	13.9	18.2	17.8	14.2	17.7	17.6	14.4
	20	21.6	17.1	14.7	21.5	16.7	15.0	18.7	16.3	15.3	18.2	16.1	14.4
	21	22.2	16.0	15.8	21.6	15.8	16.1	19.2	15.2	16.4	18.8	15.0	16.4
31	17	20.3	20.3	10.8	19.7	19.7	11.1	18.7	18.7	11.4	18.3	18.3	11.5
	18	20.4	20.3	12.2	19.7	19.7	12.4	18.7	18.7	12.8	18.3	18.3	12.9
	19	21.4	20.3	13.3	21.0	21.0	14.0	18.7	18.7	13.9	18.3	18.3	14.1
	20	21.7	19.7	14.6	21.5	21.1	15.0	18.7	18.7	15.2	18.3	18.3	15.3
	21	21.8	18.2	15.8	21.6	19.0	16.3	19.3	17.4	16.5	18.8	17.2	16.6

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



Technical Specification SHS20 Split Ducted Model

Indoor Unit Model Number	SHS20N	Nominal Evaporator Air Flow (l/s)	1110
Outdoor Unit Model Number	SHS20W	Number of Compressors	1
Total Cooling Capacity (kW)*	19.9	Power Requirements (Volt / Phase)	415 / 3
Sensible Cooling Capacity (kW)*	15.9	Normal Max. Current (Amps / Phase)	16.0
Heating Capacity (kW)**	19.5		

*Entering air @ 27/19°C and ambient 35°C ** Entering air @ 21°C DB and 7°C ambient

Air Quantity Multiplying Factors

% Rated Air Quantity-Nominal 1110 l/s					
Capacity	80	90	100	110	120
Total	0.95	0.98	1.00	1.02	1.04
Sensible	0.89	0.95	1.00	1.05	1.09

Heating Performance Data

Outdoor Coil Entering DB temp					
	0	4	8	12	18
Heating Capacity kW	14.4	15.6	20	22	24

Heating Performance Correction

% Rated Air Quality	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)	12.0
Locked Rotor Current (Amps / Phase)	101
Displacement (m ³ /h)	19.2

Electrical Controls and Safeties

High Pressure Switch (Setting kPa)	2800	Defrost	
Low Pressure Switch (Setting kPa)	100	Initiation Temperature (°C)	-4
Indoor Fan Overload	Internal	Termination Temperature (°C)	10
Outdoor Fan Overload	Internal	Min. Period Between De-Ice (min)	33
Compressor Delay Timer	300 sec	Max. De-Ice Period (min)	4

Standard Features

Manual 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

Indoor Coil

Type	Copper Tube / Aluminium Fins
Face Area (m)	0.48
Air Quantity (l/s)	1110

Indoor Fan

Number of Fans	2
Type	Centrifugal
Drive	Direct
Motor Voltage / Phase / Frequency	240 / 1 / 50
Motor (kW) Standard	2 × 0.55
Max. Fan Speed (rpm)	1290

Electrical

Power Requirements	3 Phase / 415V / 50Hz
Normal Max. Current (Amps / Phase)	16.0

Outdoor Coil

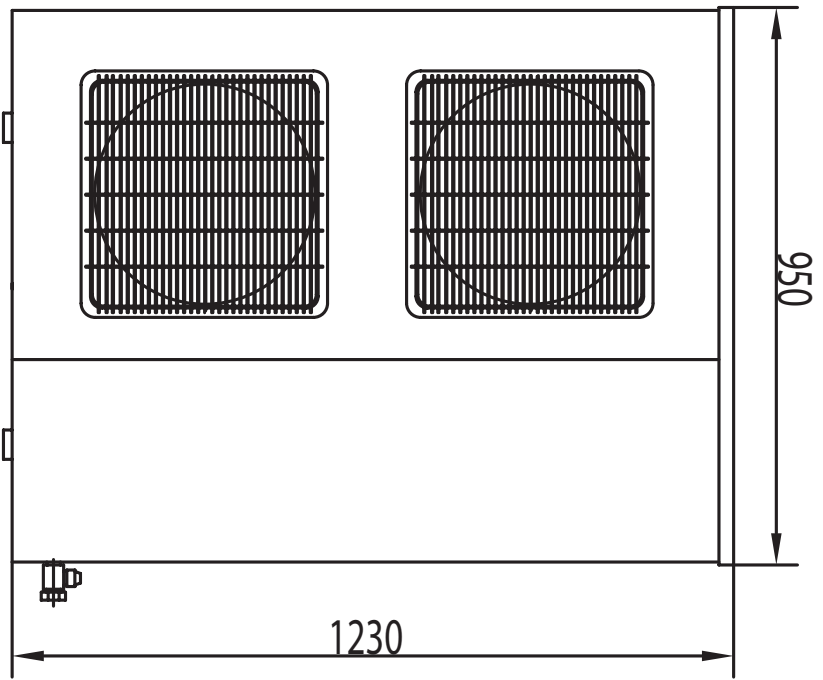
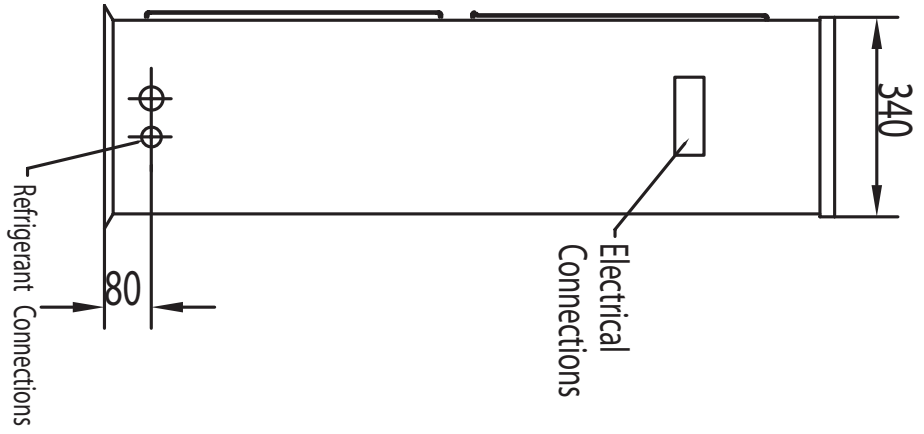
Type	Copper Tube / Aluminium Fins
Face Area	0.70

Outdoor Fan

Number of Fans	2
Type	Axial
Drive	Direct
Motor Watts / rpm	2 × 300 / 950
Motor Voltage / Phase / Frequency	2 × 240 / 1 / 50

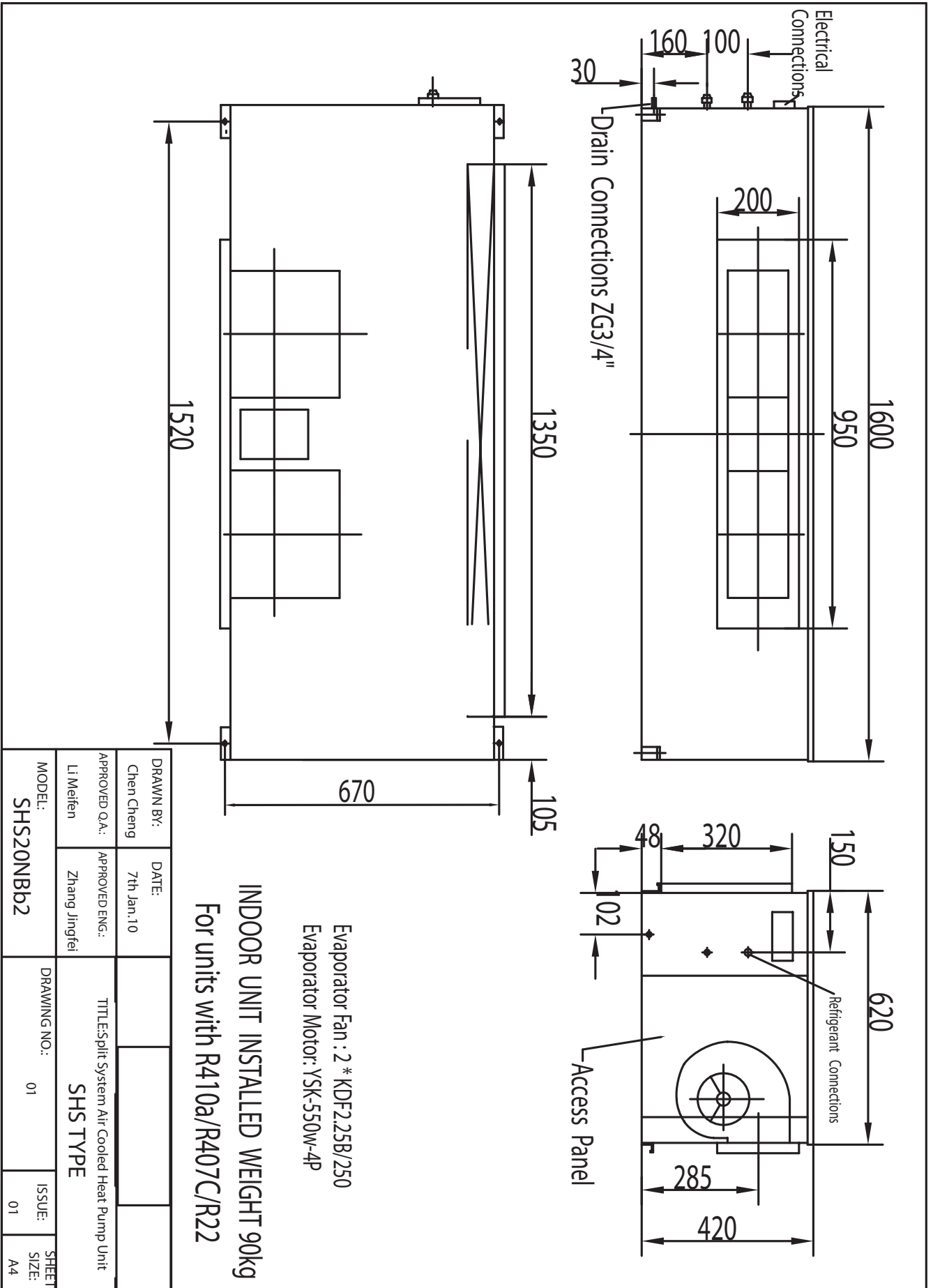
Refrigerant System

Refrigerant Type	R410a
Charge (kg)	5.2
Line Size (mm)	
Liquid 0–10 metres	13
Gas 0–10 metres	19
Liquid 10–20 metres	19
Gas 10–20 metres	28
Service Connections	Rotor Lock Valve
Expansion Control – in outdoor unit	TX Valve



OUTDOOR UNIT INSTALLED WEIGHT 122 kg
For units with R410a/R407C/R22

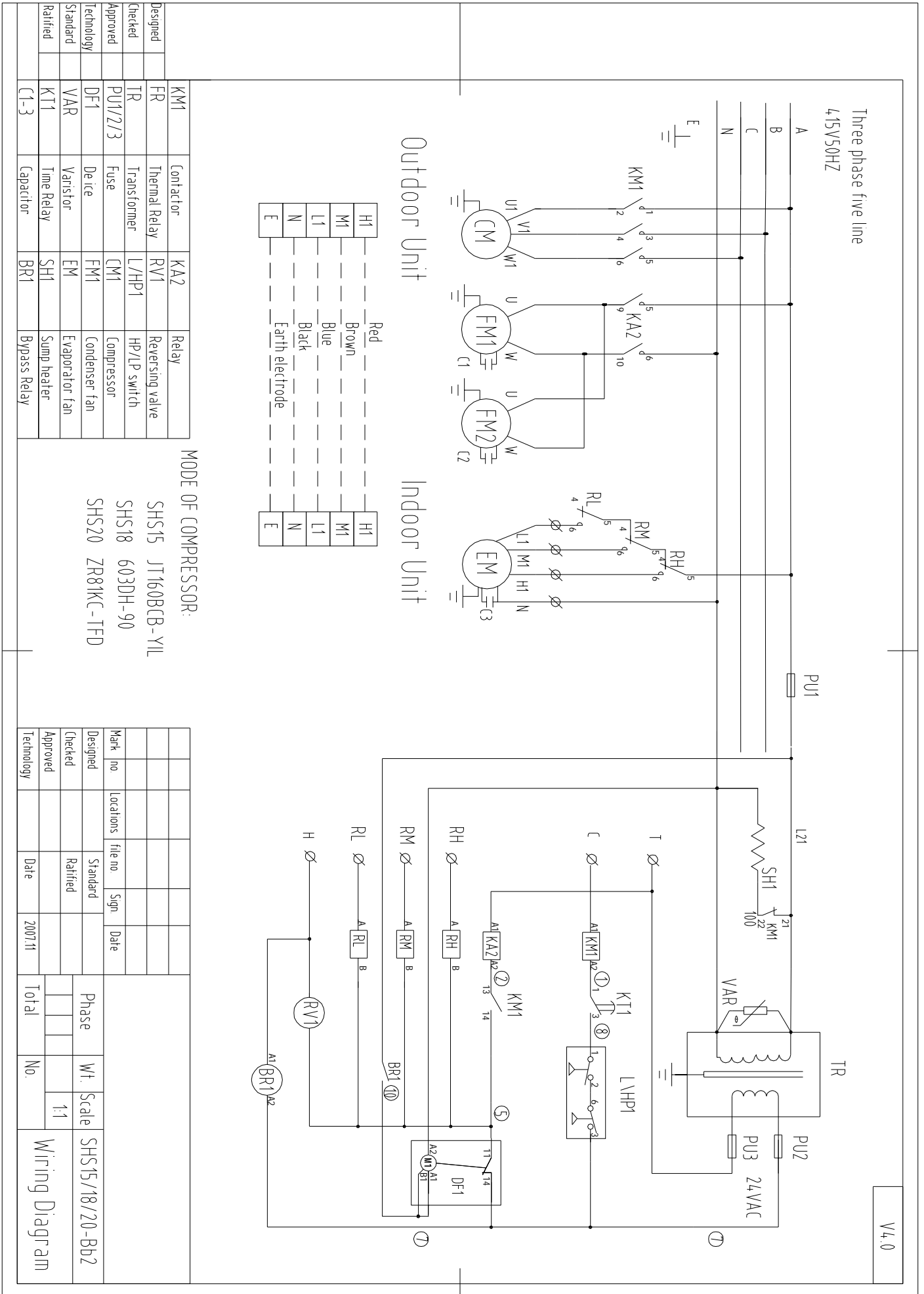
DRAWN BY: Chen Cheng	DATE: 7th Jan.10	TITLE: Split System Air Cooled Heat Pump Unit	
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	SHS TYPE	
MODEL: SHS20WBb2	DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4



Evaporator Fan : 2 * KDF2.25B/250
 Evaporator Motor: YSK-550W-4P

INDOOR UNIT INSTALLED WEIGHT 90kg
For units with R410a/R407C/R22

DRAWN BY: Chen Cheng	DATE: 7th Jan.10	TITLE:Split System Air Cooled Heat Pump Unit	
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	SHS TYPE	
MODEL: SHS20NBb2	DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4



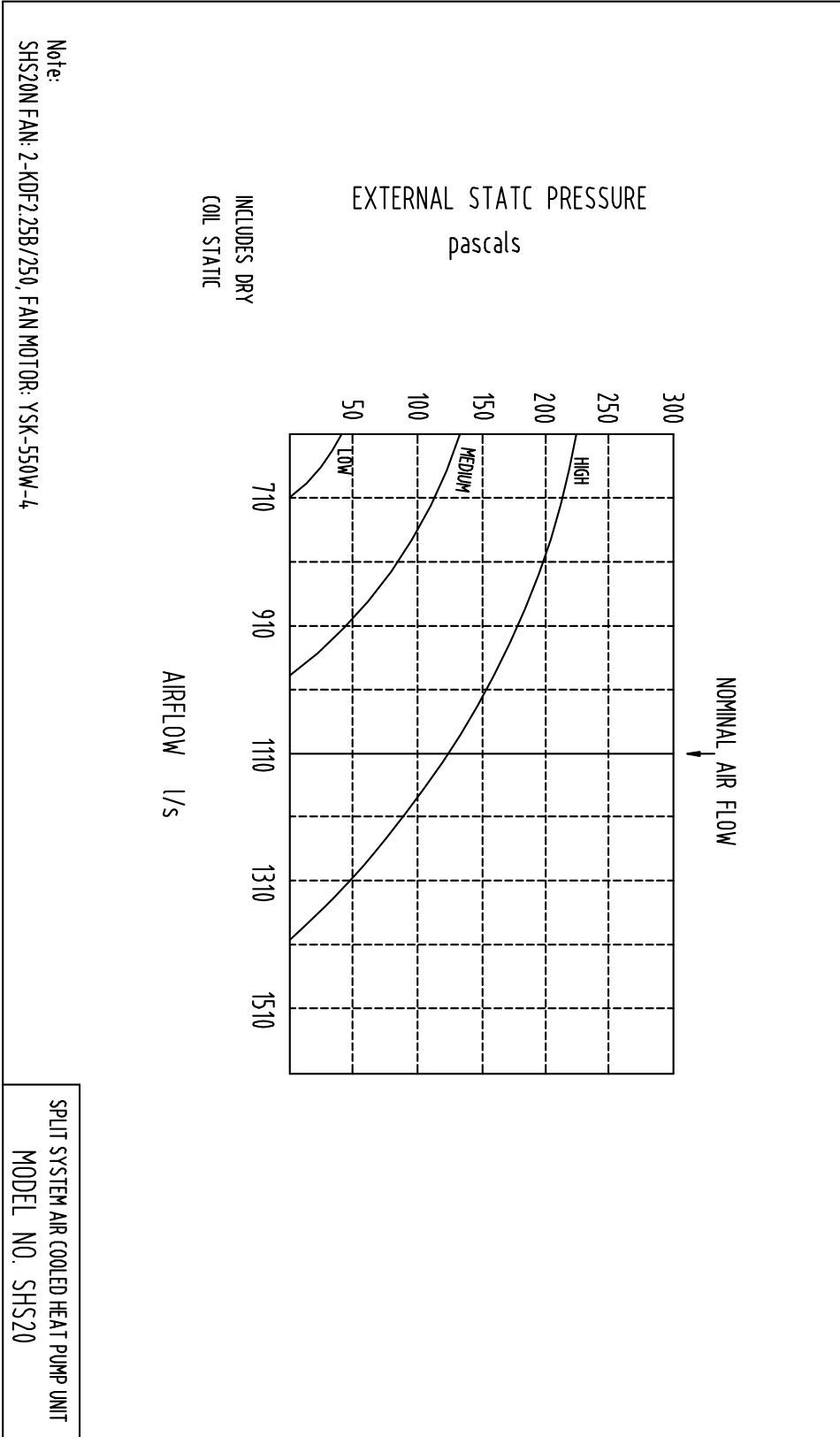
Designed	KM1	Contactor	KA2	Relay
Checked	FR	Thermal Relay	RV1	Reversing valve
Approved	TR	Transformer	L/HP1	HP/LP switch
Technology	PU1/2/3	Fuse	CM1	Compressor
Standard	DF1	Device	FM1	Condenser fan
Rated	VAR	Varistor	EM	Evaporator fan
	KT1	Time Relay	SH1	Sump heater
	C1-3	Capacitor	BR1	Bypass Relay

MODE OF COMPRESSOR:

- SHS15 JT160BCB-Y1L
- SHS18 603DH-90
- SHS20 ZR81KC-TFD

Mark no.	Locations	file no.	Sign.	Date	Phase	Wt. Scale	SHS15/18/20-Bb2
Designed		Standard				1:1	
Checked		Rated					
Approved							
Technology		Date	2007/11		Total	No.	Wiring Diagram

V4.0

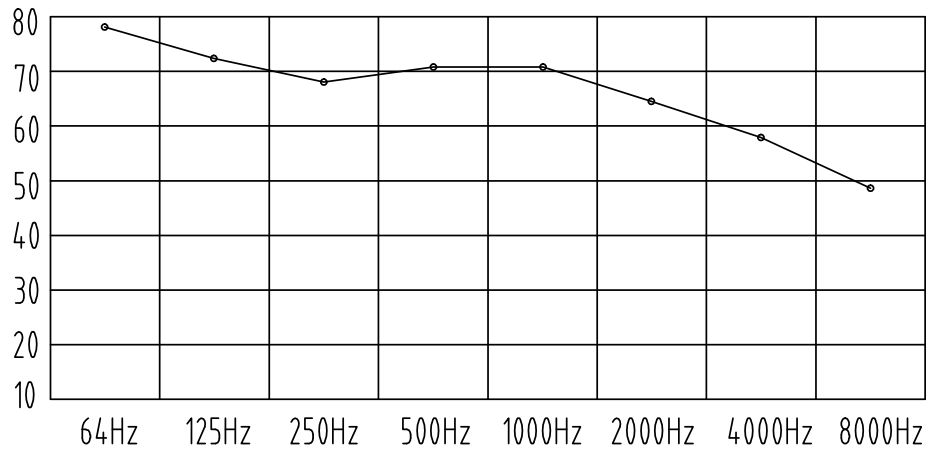


SHS20W Noise rate analysing chart

A Class: 73.7dB

Hz	dB
64Hz	78.4
125Hz	72.5
250Hz	68.8
500Hz	70.5
1000Hz	70.6
2000Hz	64.8
4000Hz	58.0
8000Hz	49.3

Noise rate analysing chart (A Class: 73.7dB) dB



SHS20N Noise rate analysing chart

A Class: 70.5dB

Hz	dB
64Hz	78.2
125Hz	76.1
250Hz	76.8
500Hz	72.3
1000Hz	68.8
2000Hz	63.0
4000Hz	58.4
8000Hz	53.1

Noise rate analysing chart (A Class: 70.5dB) dB

