DUNNAIR (Aust) Pty Ltd

WPR14

Ducted Water Cooled
R410a Refrigerant

Packaged Horizontal Type

TECHNICAL SPECIFICATION

Total Cooling Capacity	13.9 kW	Refrigerant	R410A
Electrical Input (Cooling)	3.82 kW	Refrigerant Charge	2.2 kg
E.E.R.(Cooling)	3.6	Minimum Water Flow	0.72 l/s
Running Amps (Total)	22.9 A	Water Coil Pressure Drop	40 kPa
Fan Motor Full Load Amps	3.2A	Filter (Option)	EU1
Electrical Supply Required	1 Ph.240V.50Hz	Electric Heater (Option)	10.5 kW

COOLING CAPACITY (kW)

AIR FLOW RATE (L/S)			760		
COIL E.A.T.	DB ℃		23	27	31
	WB ℃		17	19	21
Entering Water Temperature (E.W.T) ℃	20	T	14.8	15.5	16.3
		S	10.8	12.4	13.9
		FL	0.9	0.9	0.9
		HR	18.5	19.2	20.1
	25	T	14.0	14.9	16.4
		S	10.9	12.2	14.0
		FL	0.9	0.9	0.9
		HR	17.8	18.7	20.4
	30	T	13.2	13.9	15.5
		S	10.1	11.7	13.6
		FL	0.9	0.9	0.9
		HR	16.9	17.7	19.5
	35	T	12.3	13.0	13.5
		S	9.8	11.4	12.8
		FL	0.9	0.9	0.9
		HR	15.9	16.6	17.2
	40	T	11.8	12.1	12.7
		S	9.5	11.0	12.5
		FL	0.9	0.9	0.9
		HR	15.4	15.6	16.4

T = Total Capacity (kW)
S = Sensible Capacity (kW)
FL = Water Flow (l/s)
E.A.T.= Entering Air Temperature (℃)
__ = Nominal Capacity (kW)
HR = Heat Rejection

Note: 1. Capacities are gross and do not include allowance for fan motor heat loss. For fan motor heat loss refers to Air Handling Performance.
2. Water flow and cooling capacity based on 5℃ water temperature difference.

HEATING CAPACITY (kW)

WPR Reverse Cycle Version

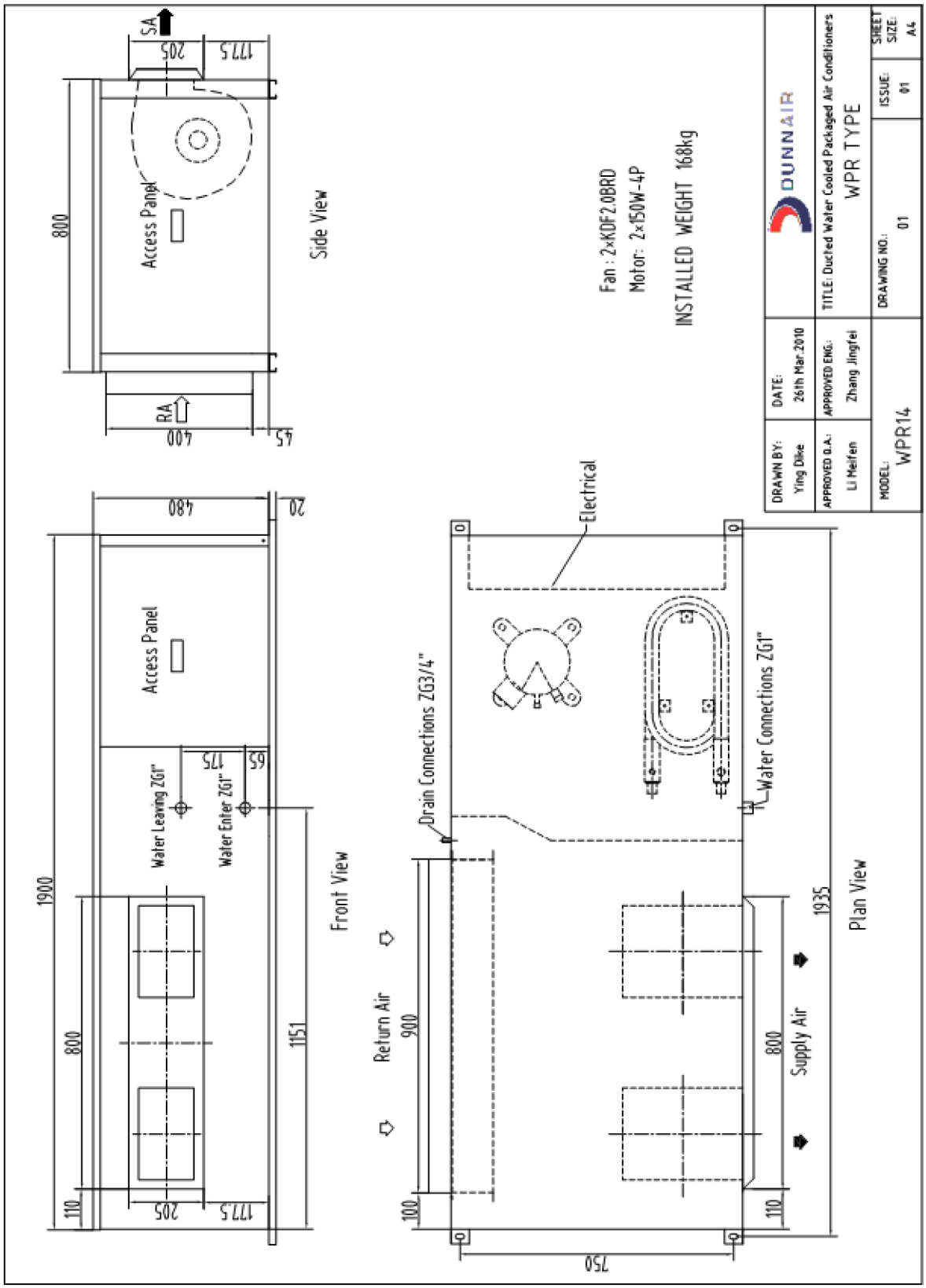
AIR FLOW RATE (L/S)			760		
WATE FLOW RATE (L/S)			0.9		
COIL E.A.T.	DB ℃		18	21	25
Entering Water Temperature (E.W.T) ℃	15	HC	13.6	13.4	12.8
		Hab	9.9	9.7	9.3
		LWT	11.4	11.4	11.6
		INPT	3.7	3.7	2.6
	20	HC	14.4	14.3	13.6
		Hab	10.7	10.6	10.0
		LWT	16.2	16.2	16.4
		INPT	3.8	3.7	3.6
	25	HC	15.7	15.4	14.9
		Hab	11.8	11.5	10.9
		LWT	20.8	20.9	21.0
		INPT	3.8	3.9	4.0

HC = Heating Capacity (kW)
Hab = Heat Absorbed (kW)
L.W.T.= Leaving Water Temperature (℃)
E.A.T.= Entering Air Temperature (℃)
INPT = Compressor Input Power (kW)
__ = Nominal Capacity (kW)

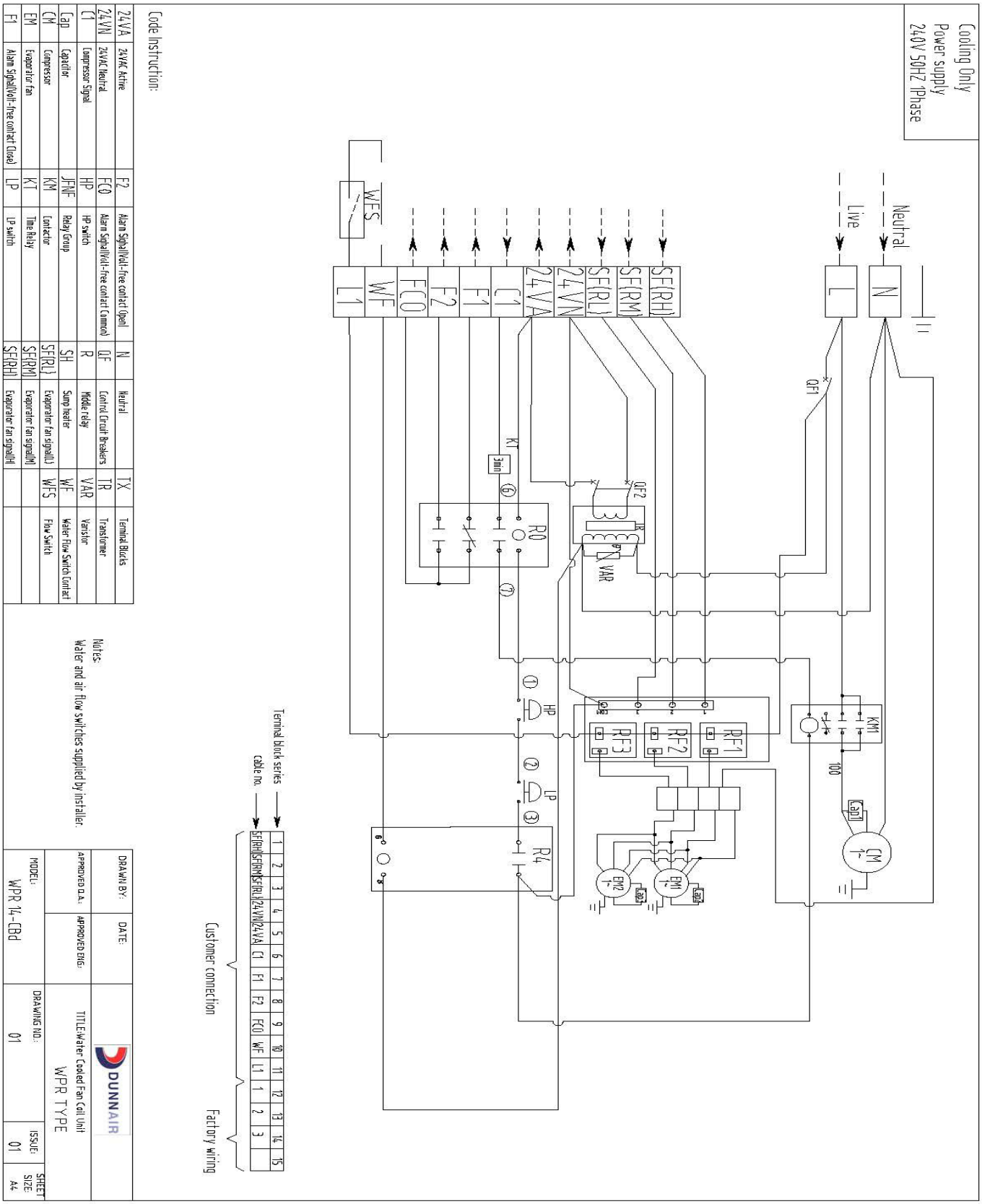
Note: All units are reverse cycle heat pump units. Models can also be provided as cooling only or cooling only with electric heater.

May 2014

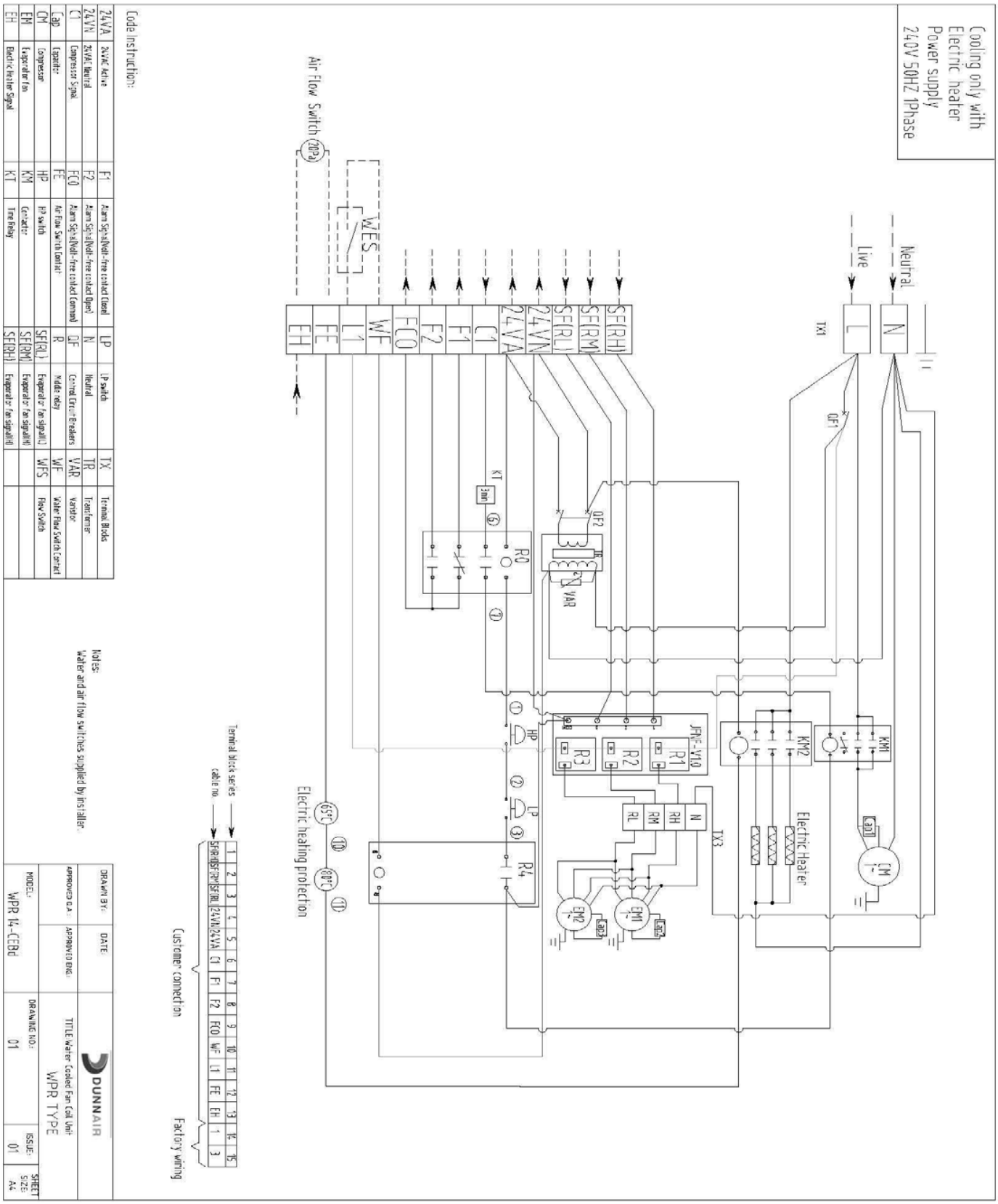
DIMENSIONS (mm)



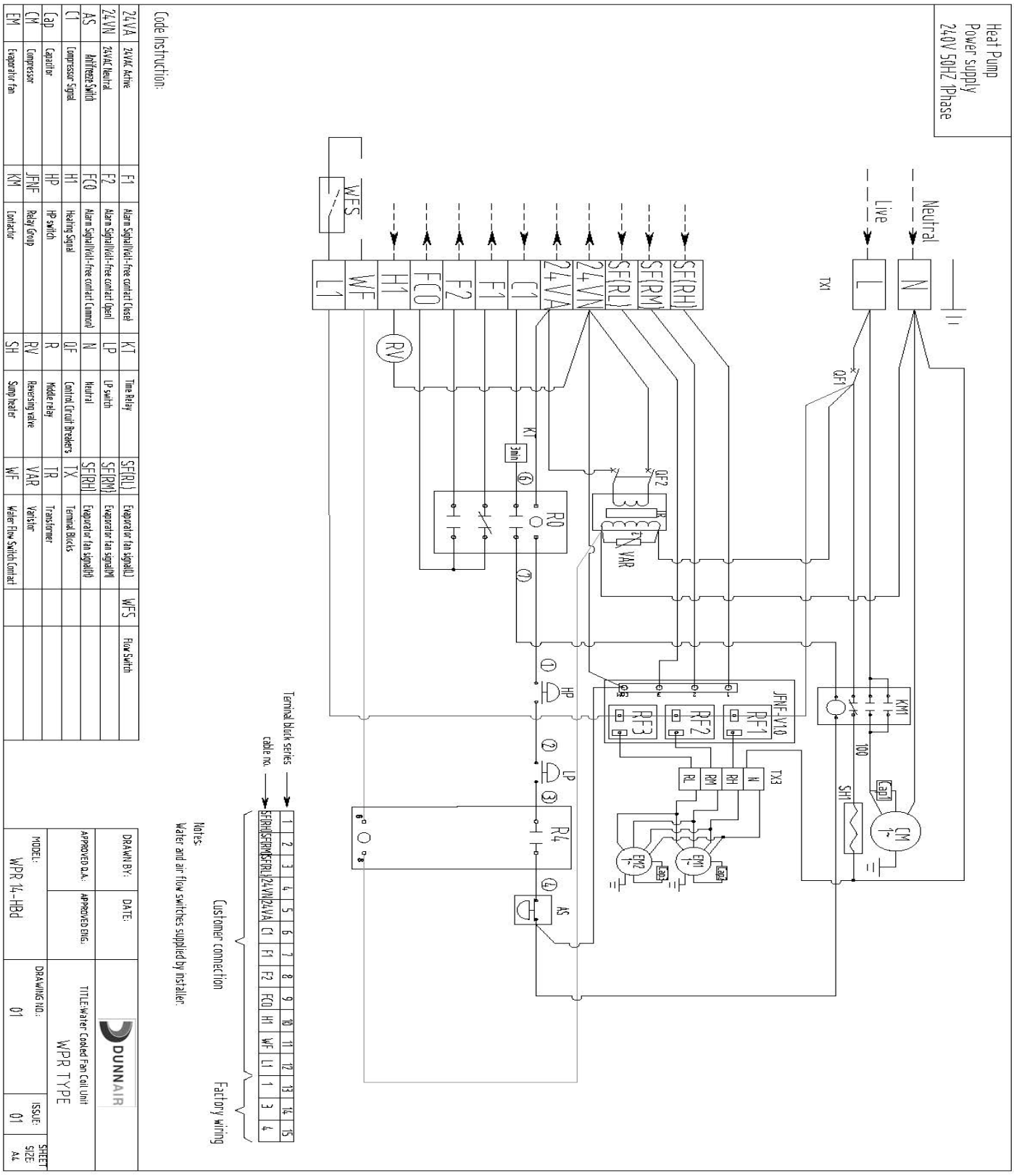
WIRING DIAGRAMS – Cooling Only



WIRING DIAGRAMS – Cooling Only with Electric Heater



WIRING DIAGRAMS – Reverse Cycle



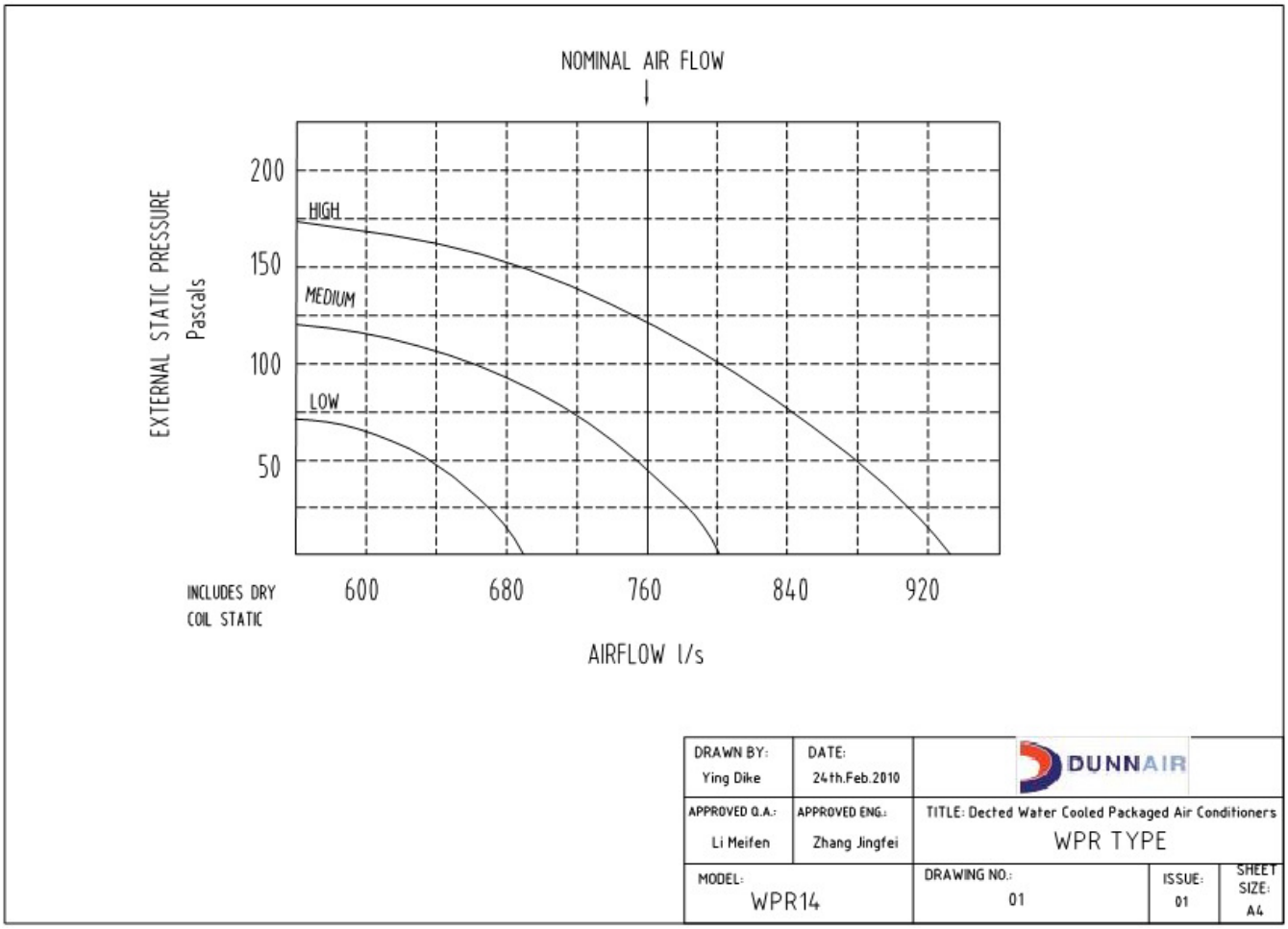
24VA	24VAC Active	F1	Alarm Signal(Volt-free contact Close)	KT	Time Relay	SF(RL)	Evaporator fan signal(L)
24VN	24VAC Neutral	F2	Alarm Signal(Volt-free contact Open)	LP	LP switch	SF(RM)	Evaporator fan signal(M)
AS	Anti Freeze Switch	FCO	Alarm Signal(Volt-free contact Common)	N	Neutral	SF(RH)	Evaporator fan signal(H)
C1	Compressor Signal	H1	Heating Signal	QF	Control Circuit Breakers	TX	Terminal Blocks
Cap	Capacitor	HP	HP switch	R	Middle relay	TR	Transformer
CM	Compressor	JFNF	Relay Group	RV	Reversing valve	VAR	Varistor
EM	Evaporator fan	KM	Contactor	SH	Sump heater	WF	Water Flow Switch Contact

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
SF(RH)	SF(RM)	SF(RL)	24VN	24VA	C1	F1	F2	FCO	H1	WF	L1	1	3	4	

DRAWN BY:	DATE:	DUNNAIR	
APPROVED Q.A.:	APPROVED ENG.:	TITLE:Water Cooled Fan Coil Unit WPR TYPE	
MODEL: WPR 14-HBd		DRAWING NO.: 01	ISSUE: 01
			SHEET SIZE: A4

AIR HANDLING PERFORMANCE

Fan Curve (Without Filter)



Note:

1. In tropical (high humidity) conditions, care must be taken to select an air flow which gives a suitable coil face air velocity, to prevent water carry over.
2. For applications with low resistance, be sure not to exceed the fan motor full load Amps.
3. Applications using full or high proportions of fresh air should be referred to DUNNAIR engineering office to establish of unit model.
4. EU1 rate filter pressure loss 15Pa.

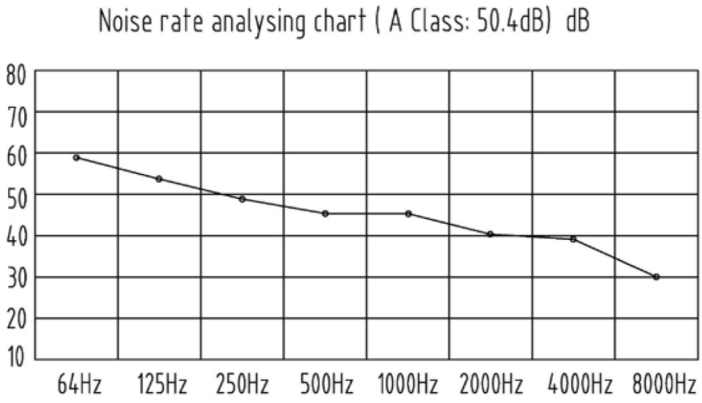
AIR HANDLING PERFORMANCE

Sound Levels

WPR14 Noise rate analysing chart

A Class: 50.4dB

Hz	dB
64Hz	59.7
125Hz	53.4
250Hz	50.1
500Hz	45.8
1000Hz	45.9
2000Hz	41.1
4000Hz	39.3
8000Hz	30.6



Note:1m from source with 1m insulated duct and fully reflective surface surrounding unit.

DRAWN BY: Ying Dike	DATE: 10th.Dec 2010	DUNNAIR		
APPROVED Q.A.: Li Meifen	APPROVED ENG.: Zhang Jingfei	TITLE: Dected Water Cooled Packaged Air Conditioners WPR TYPE		
MODEL: WPR14	DRAWING NO.: 01	ISSUE: 01	SHEET SIZE: A4	