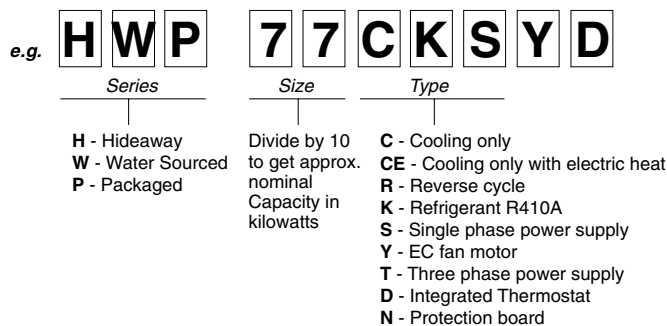


HWP 77, 96 (c/w EC Motor)

Ducted Water Cooled R410A Packaged Air Conditioner

Installation & Maintenance

Fig. 1 Nomenclature



GENERAL

HWP - A general designation which applies to all versions (refer fig.1)

These HWP units must be installed in accordance with all national and local safety codes.

OPTIONS

The following items are available as optional extras:

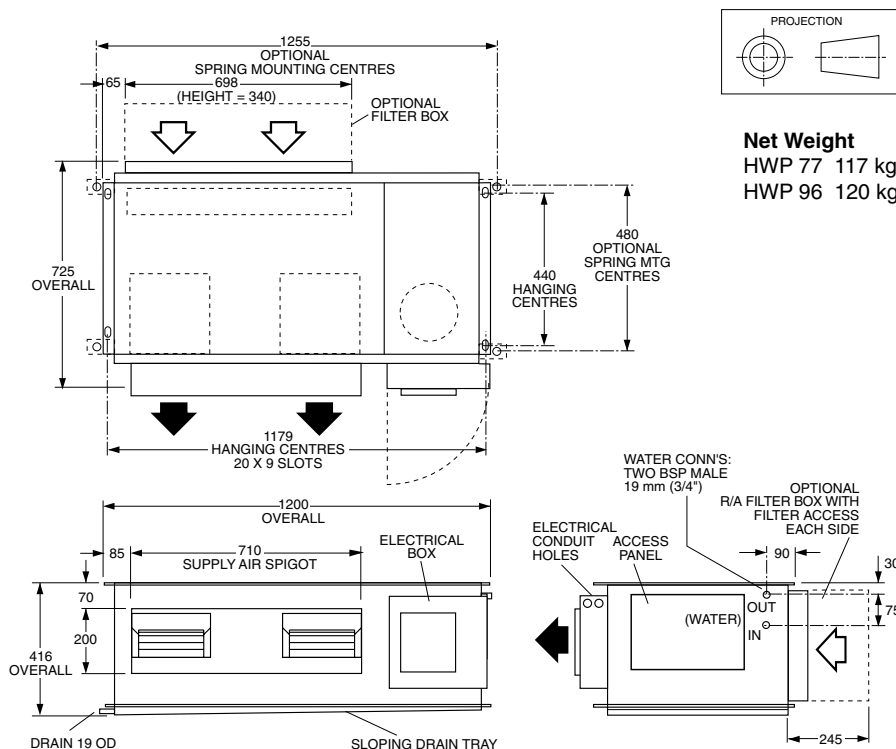
1. Condensate Lift-Pump Kit.
2. Filter Box.

A remote return air temperature sensor is supplied on all models except for HWP 77/96 CEKSYD models. Optional sensors are available; refer page 3.

High pressure hoses (600 mm long) c/w fitting and spring mounts are supplied as standard.

Fig. 2 Dimensions (mm)

Not to Scale



AIR FILTRATION / FILTER BOX (Option)

As air filtration requirements vary, filters are not supplied with the unit. Filters should ideally be installed on the return air side of the unit, no closer than 500 mm from the back of the unit and easily accessible for cleaning. To maximise the efficiency of air flow, the return air filter should be twice the area of the HWP unit's return air spigot/s. If efficiency is less of a concern a Filter Box is available.

The Filter Box is installed by unscrewing the return air spigot and replacing it with the Filter Box's filter-integrated spigot. The filter may be accessed from either side of this spigot. This box adds 90 mm to the overall depth of the unit.

INSTALLATION

Positioning & Mounting

HWP units are designed to be used with simple, short duct layouts. Units should be located as close to the space to be air conditioned as acoustic criteria allows; refer to Fig. 6 for application considerations.

When determining the position of the air conditioner, allow adequate space around the unit to facilitate future servicing and maintenance. Ensure there is enough working space in front of the electrical access panel. Allow adequate clearance for the filter (optional) to be withdrawn to its full length.

It is recommended that the unit be mounted using the spring mount system supplied (Fig.3). This system minimises transfer of vibration into the building structure.

If a more rigid installation can be tolerated, then suspend the unit from four threaded rods using locknuts (not supplied), as shown in Fig. 4.

Mount top of the unit level as it comes with a sloping drain tray. This tray is not reversible, i.e. the drain exit can only be at the opposite end to the compressor.

The unit must be mounted with sufficient height for the condensate drain to be 'U' trapped outside the unit (see figure 5). Alternatively fit a condensate lift-pump.

The drain line must not be piped to a level above the drain tray.

When finally positioned, tighten the lock nuts on the mounting rods to give a firm installation (see Fig. 3).

Condensate Drain

The drain line must be maintained at least 19 mm ID along its full length. A vent pipe is recommended for drain pipes longer than 4 m (refer figure 4). Check drain by pouring water into the drain tray and ensuring that it clears. Failure to adhere to these instructions could cause flooding.

Water Supply & Return

The HWP unit's IN and OUT water connections are male pipe threaded (refer Fig. 1). The two **temperzone** 600 mm flexible high pressure water hoses supplied have female pipe threaded connections at each end. Maximum water pressure for each hose is 1720 kPa (250 psi). The HWP unit alone, excluding hoses, will withstand 4480 kPa (650 psi).

Poor quality water supply must be pre-filtered and it is essential that adequate water treatment is maintained, particularly where open cooling towers are used.

Note: It is required that the water supply system be fitted with a water flow switch and water pump safety interlock. These items prevent the HWP units from going into fail safe lockout status due to a loss of water flow. Failure to install the above items would require the resetting of all HWP units in the system - either by breaking the power supply to each unit or breaking the thermostat control circuit.

HWP*R units require a minimum water supply temperature of 17°C.

Circuit Balancing Valve

It is recommended that a circuit balancing valve be fitted to maintain water flow at a constant rate. The minimum water flow rates in litres per second (l/s) are as follows:

HWP:	77	96
Minimum	0.4	0.6

Electrical

The air conditioner should be connected to the appropriate power supply for each model, as specified in the wiring diagram, with neutral and adequate earth. The supply to have an accessible switch to allow isolation of the unit. Wire the heating and cooling room thermostat to the electrical terminals adhering to the wiring diagram supplied with the unit. All wiring to the air conditioner must comply with the wiring regulations of the local electrical authority.

Fig. 3 Spring Mounting

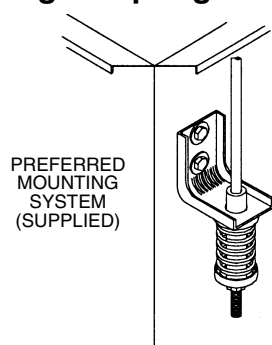


Fig. 4 Solid Mounting

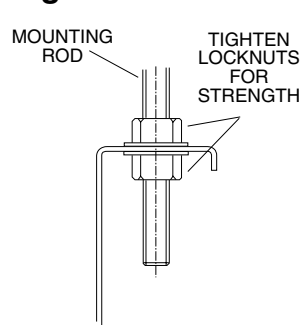
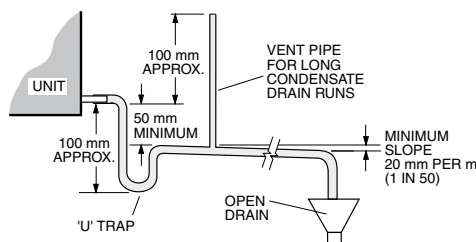


Fig. 5 Condensate Drain



Indoor Fan Speed

The fan speed (RPM) range is adjustable using DIP2 Switches 1 to 5 on the EC Motor Controller board located in the electrical box – refer wiring diagram. The default setting is highlighted.

HWP-CKSYN & HWP-RKSYN models:

Once set, your fan speed range can then be set to:

1. **Variable:** Anywhere from 0–100% capacity (max. RPM) using a 0–10V DC input signal supplied from an independent BMS. (DIP1 switch 1 'ON'), or
2. **Stepped:** LOW, MED and HIGH (DIP1 switch 1 'OFF') across the selected range.

Note: If using Option 1-Variable, then you must also fit a Controller Signal Isolator (item no.201-000-129), supplied separately by temperzone.

HWP-CKSYD & HWP-RKSYD models:

Once set, your fan speed range can then be set to: LOW, MED and HIGH (DIP1 switch 1 'OFF') across the selected range.

Air / Water Flow

Refer to HWP 77/96 Data Sheet pamphlets for detailed information on air handling performance and water flow rates.

Unit Protection

Unit protection is incorporated in either:
a.) HWP Protection Board, or
b.) SAT-2 Controller,
depending on which HWP model is being installed.

A pump verification relay ensures that water is flowing before the compressor will start. A high pressure lockout protects the unit from low water flow in cooling mode, or fan failure in heating mode. Sensors protect against low air coil temperature and loss of refrigerant. Units include an anti rapid cycle device for compressor protection.

HWP*R units also have a low refrigerant temp. safety thermostat to protect against icing up of the water within the unit's tube-in-tube heat exchanger.

A non-specific fault LED/ output signal is also included for remote fault indication to building management systems (refer wiring).

Note: Lockout protection can be reset by switching unit's power supply off and on. Lockout protection will also reset when the thermostat switches, or is switched to the dead zone.

Units Supplied With SAT-2 Thermostat

Any faults detected are displayed on the SAT-2 Wall plaque (refer Table 1). A non-specific fault output signal is also included on SAT-2 Controllers for remote fault indication to building management systems.

Units Supplied With Electric Heat

HWP*CEKS models supplied with electric heat include both auto (90°C) and manual (120°C) high temp. safety thermostats. If the manual safety t/stat requires resetting, then the auto safety t/stat has failed and needs to be replaced.

Room Thermostat

(Reverse Cycle Models)

The thermostat should be set within the recommended operating range of between 19°C and 30°C. The thermostat should not be used as an on-off switch. Refer to **temperzone** for a list of other approved thermostats.

If your unit is supplied with **temperzone's SAT-2 Thermostat**, refer to page 3 for installation instructions.

COMMISSIONING

1. Check that the thermostat is correctly wired and set at the desired temperature.
2. Check that the air filter (if fitted) is clean.
3. Check that the fan runs freely without vibration.
4. Check condensate drain and safety drain tray for free drainage.

Demonstrate the SAT-2 Wall Control (if supplied) to the owner/user, after having first thoroughly familiarised yourself with the User's Operating Instructions. This page is to remain with the owner/user.

MAINTENANCE

Quarterly

1. Remove lint and dust accumulation from heat exchange air coil. (Note: failure to do this may affect efficiency).
2. Check air filters and vacuum or wash clean as necessary.

3. Check condensate drain for free drainage.
4. Check compressor compartment for oil stains indicating refrigerant leaks.
5. Check quality of water supply.

Six Monthly

Check tightness of electrical connections.

Yearly

1. Remove lint and dust accumulation from heat exchange air coil. (Note: failure to do this may affect efficiency).
2. Replace air filter if damaged to maintain adequate air flow and efficiency.

Units Supplied With Integrated Thermostat (SAT-2 Controller)

Components

The following components are supplied in a box taped inside the supply air spigot:

1. SAT-2 Wall Control plaque, including wall mounting plate.
2. 10 m interface lead (electrical box-to-plaque).
3. User's Operating Instructions booklet.
4. Lithium CR2032 battery (3V).

Optional

1. Remote return air sensor (in box).
2. Remote return air temperature sensor lead; 1.5, 6, 12 or 25 m.
3. 20 m extended interface lead (electrical box-to-plaque).
4. SAT-2 Zone Control PCB.
5. Zone Control 24V transformer.
6. Additional SAT-2 Wall Control plaque.
7. Infra red remote control.

Installation

The SAT-2 Controller PCB is supplied pre-installed in the HWP unit's electrical box.

1. Isolate the HWP unit from power supply, then remove electrical box cover.
2. Remove the SAT-2 box supplied taped inside the supply air spigot.
3. Remove the Wall Control's interface lead from this box and connect to the terminal block (A1/B1/Vcc/GND) on the SAT-2 Controller board. Trace the remaining length of the lead to the Wall Control's intended location. **Note:** Make sure the coloured wires are connected as per the wiring diagram.
4. Remove the Wall Control's backing plate by using a small screw driver to remove the single screw at the bottom edge of the plaque.
5. Install the Lithium battery, supplied loose, positive (+) side up in the Wall Control's battery holder.
6. Check the wall where the Wall Control plaque is to be located is flat before fastening the wall mounting plate. Alternatively, the mounting plate can be screwed to a standard wall socket mounted horizontally. **Note:** Use low profile (mush) headed screws to prevent contact with the PCB board. Fixing the plate to a distorted surface may damage the control.
7. Drill hole in wall to allow cable entry.
8. Connect the interface lead to the the Wall Control board. **Note:** Make sure the coloured wires are consistently connected at each end as per the wiring diagram.
9. Ensure the interface lead is run separately and away from main power supply wires, including the interconnecting cable. When installing cabling, trim any excess length to suit your location.

10. Fill around the interface lead with foam or cover hole with PVC tape to prevent draft from wall cavity affecting control operation. Do not use aluminium duct tape.
11. Secure the Wall Control body to the mounting plate by replacing the locking screw removed earlier.
12. Replace the HWP electrical box cover.

Remote Air Temperature Sensor/s (option)

The air temperature sensor is by default located in the Wall plaque. Optional remote air temperature sensors are available so that the measurement of the room temperature can be taken away from the wall plaque, eg. elsewhere in the room or in the return air duct.

Remote sensor's can be plugged directly into the Controller board (PCB). This board accepts up to four sensors which are designated as 'zones' one to four. The first return air sensor will automatically replace the Wall Control sensor and should be located in the same room as the Wall Control. The Controller will always use the average of the zones selected. Refer to the separate installation instructions supplied with the PCB for further details.

Ensure all remote sensor wires are run separately and away from main power supply wires, including the interconnecting cable.

Fault Detection

Any faults detected are displayed on the SAT-2 Wall plaque (refer Table 1). A non-specific fault output signal is also included on SAT-2 Controllers for remote fault indication to building management systems.

NOTE

The manufacturer reserves the right to make changes in specifications at any time without notice or obligation. Certified data is available on request.

This pamphlet replaces the previous issue no. 3878 dated 09/12. Wiring revisions B & C.

Table 1 SAT-2 Controller - Troubleshooting

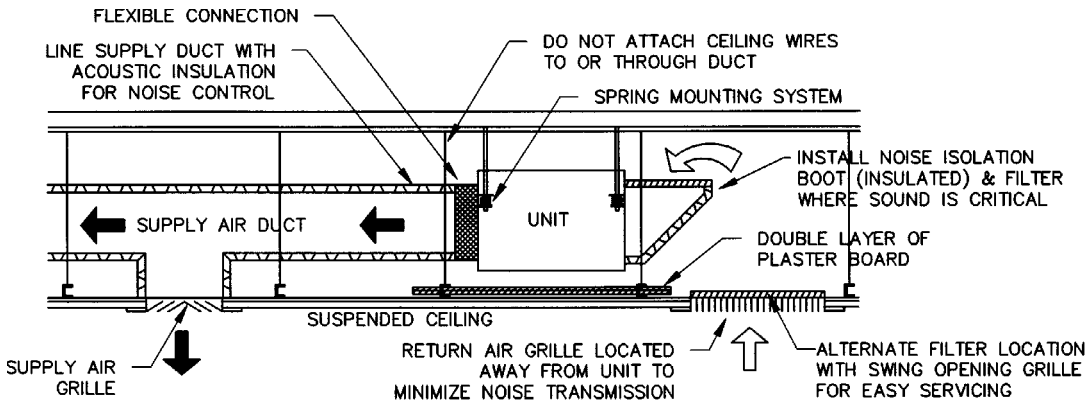
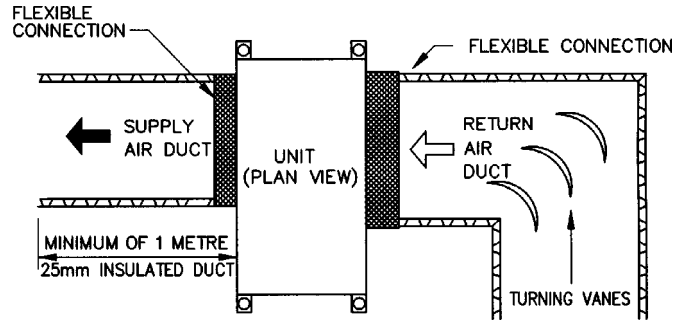
If an fault is detected, an 'ERR' symbol will light up on the Wall plaque display. The following error codes may be displayed:

Error Code	Fault	Remarks
1	Room sensor #1 failure	Main board AD3
2	Room sensor #2 failure	Main board AD4
3	Room sensor #3 failure	Main board AD5
4	Room sensor #4 failure	Main board AD6
5	#1 indoor coil sensor failure	Main board AD1
6	#1 LST sensor failure	Main board AD2
7	#1 insufficient refrigerant	
8	#1 compressor overload	
9	#1 low pressure failure	
10	#1 high pressure failure	
11	Room sensor #5 failure	At wallpad B
12	Room sensor #6 failure	At wallpad A
13	All room sensor failure	
14	Float switch failure	
15	#1 Low safety thermostat failure	
16	Communication failure	
17	Hydronic pump switch failure	
18	#2 insufficient refrigerant	
19	#2 compressor overload	
20	#2 Low safety thermostat failure	
21	Discharge sensor 1 failure	
22	Discharge sensor 2 failure	
23	Discharge temp 1 failure	
24	Discharge temp 2 failure	

Fig. 6 Application Considerations

Recommendations for Noise Isolation:

1. Avoid installing units, with non-ducted return air, directly above spaces where noise is critical.
2. Use flexible connections between unit and rigid ducting.
3. Use generously sized acoustically lined ducts.
4. If generous duct size is not possible, use turning vanes on bends to reduce air turbulence (regenerated noise).
5. Use 90° bends in ducting to significantly assist in noise reduction.



HWP 77/96 CKSYD

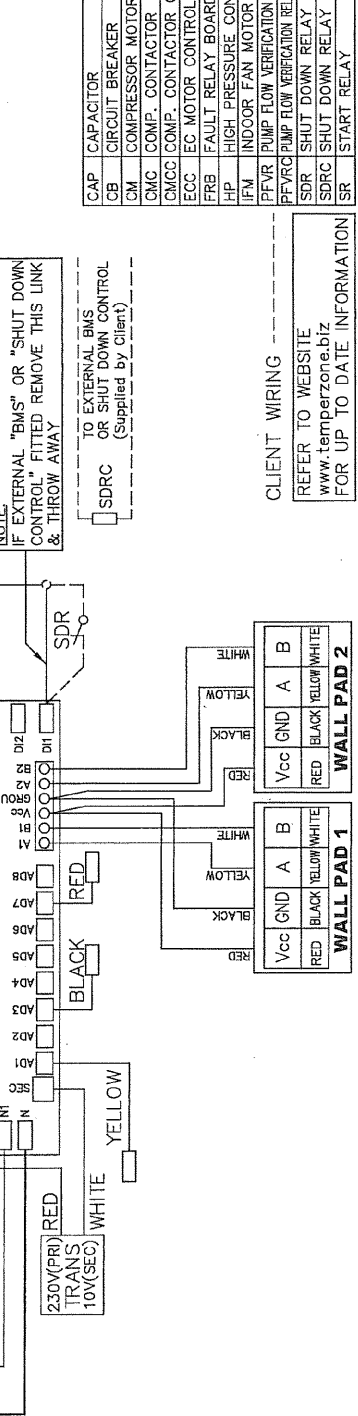
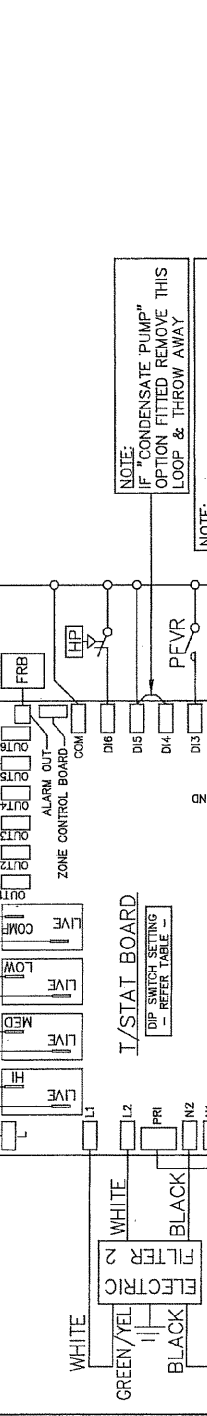
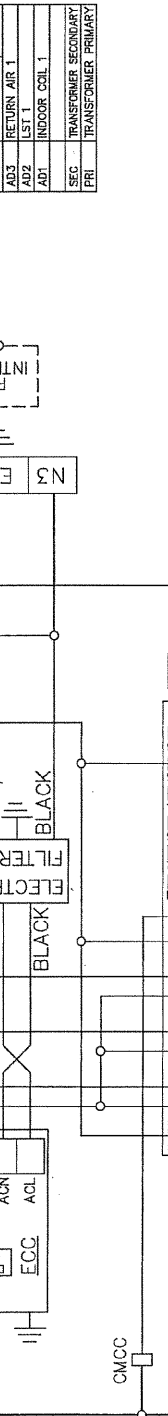
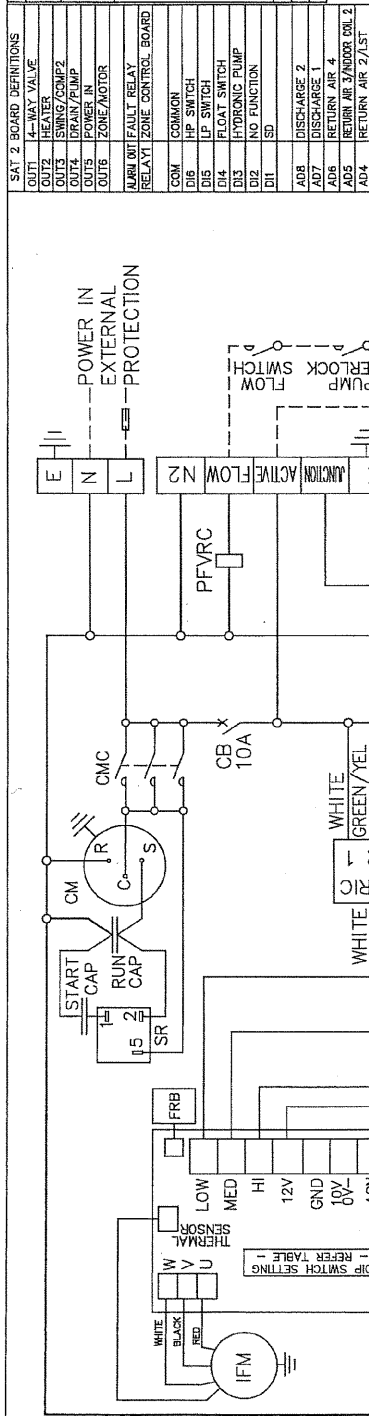
SPECIFICATION TABLE		HWP	HWP
CAPACITIES - AS/NZS 3823		77C	96C
COOLING - NET		kW	7.75
ELECTRICAL INPUT			9.65
COOLING -		kW	2.41
E.F.E.R. (COOLING)		kW/kW	3.62
ELECTRICAL			3.53
SUPPLY REQUIRED 1PH 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS			
COMPRESSOR RUN AMPS AT RATING		A	8.72
COMPRESSOR CAPACITOR SIZE		µF	55
RATING AMPS		A	9.35
MAX RUNNING AMPS (TOTAL)		A	12
VOLTAGE IN		V	230/240
IFM AMPS (MAX)		A	5
REFRIGERANT - R410A			
WEIGHT - NETT		kg	1.70
COMPRESSOR TYPE: ROTARY		kg	1.17
OIL TYPE: POLYVINYL ETHER (PVE)			1.20

EC-BOARD SPEED SELECTION - DIP SWITCH 2 (DIP2)	
SWITCH 1	OFF OFF OFF OFF
SWITCH 2	OFF ON OFF OFF
SWITCH 3	ON ON OFF ON
SWITCH 4	OFF OFF ON ON
SWITCH 5	OFF OFF OFF OFF
Max (rpm)	1350 1300 1200 1100
Min (rpm)	1050 1000 900 800

DIP1 SWITCH SETTING	
1	OFF ON
2	OFF ON
3	OFF ON
4	OFF ON

DIP2 SWITCH SETTING	
1	OFF ON
2	OFF ON
3	OFF ON
4	OFF ON
5	OFF ON
6	OFF ON
7	OFF ON
8	OFF ON

SAT 2 BOARD DEFINITIONS	
OUT1	4-WAY VALVE
OUT2	HEATER
OUT3	RAIN PUMP
OUT4	POWER IN
OUT5	ZONE MOTOR
OUT6	ZONE MOTOR
ALARM	FAULT RELAY
RELAY1	ZONE CONTROL BOARD
COM	COMMON
DIP	IP SWITCH
DIP4	FLOAT SWITCH
DIP3	HYDRONIC PUMP
DIP2	NO FUNCTION
DIP1	SD
AD9	DISCHARGE 2
AD7	DISCHARGE 1
AD6	RETURN AIR 4
AD5	RETURN AIR 3/INDOOR DM 2
AD4	RETURN AIR 2/LST
AD3	RETURN AIR 1
AD2	LST 1
AD1	INDOOR COIL 1
SEC	TRANSFORMER SECONDARY
FRI	TRANSFORMER PRIMARY



ISSUE	MODIFICATION	EC/N	DATE	APRVD	DRG SIZE	No.	DESCRIPTION	Mat.1	FINISH	ASSY No.
A	SA Dip 1, Switch No.3 to the 'OFF' Position/Speed Selection Table Mod	N3113	12-09-12	J.S.L.						

Programmed by
 HWP 77&96 CKSYD
 WIRING SCHEMATIC

temperzone

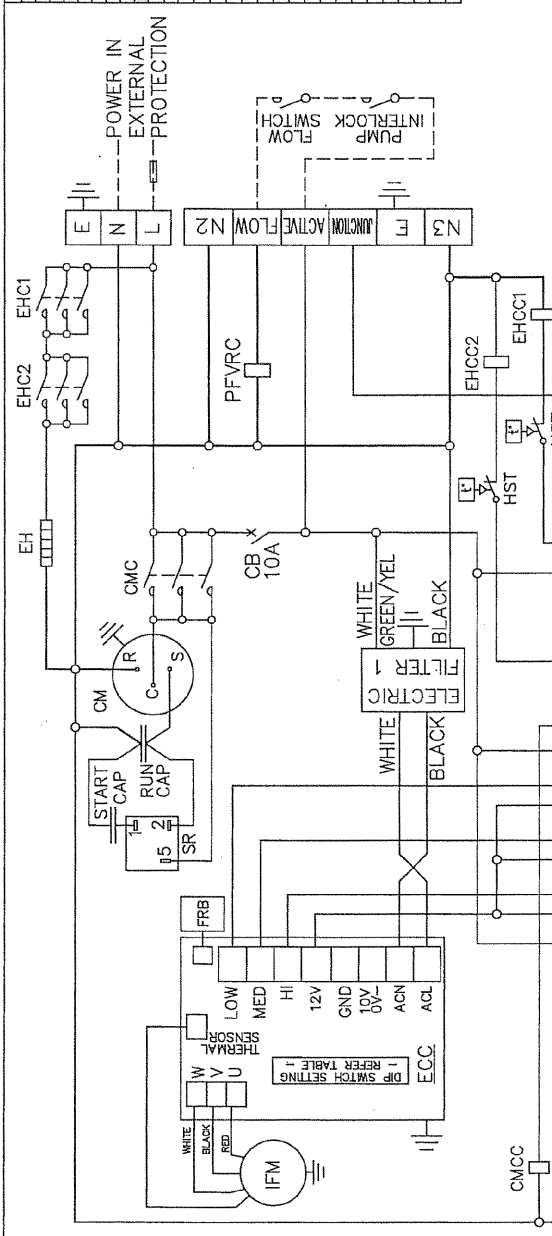
Drawn D.A.B Date 12-02-12 Drawing No. 291-000-041 Revision A
 Scale *1/2" = 1'*

PLOTTED 12-09-12
 ©temperzone ltd 2009

HWP 77/96 CEKSYD

SPECIFICATION TABLE		HWP	HWP
CAPACITIES - AS/NZS 3823		MODEL	77CE
COOLING - NET		KW	7.75
HEATING - ELECTRIC HEAT		KW	4.00
ELECTRICAL INPUT			8.49
COOLING -		KW	2.14
HEATING - ELECTRIC HEAT		KW	4.00
E.E.R. (COOLING)			3.62
ELECTRICAL			3.53
SUPPLY REQUIRED 1PH 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS			
COMPRESSOR RUN AMPS AT RATING		A	8.72
COMPRESSOR CAPACITOR SIZE		uFd	55
RATING AMPS		A	9.35
MAX RUNNING AMPS (TOTAL)		A	12
VOLTAGE IN		V 230/240	230/240
F.M. AMPS (MAX)		A	5
REFRIGERANT - R410A		kg	1.70
WEIGHT - NETT		kg	117
COMPRESSOR TYPE: ROTARY			120
OIL TYPE: POLYVINYL ETHER (PVE)			

SAT 2 BOARD DEFINITIONS	
OUT1	4-WAY VALVE
OUT2	HEATER
OUT3	SWING/COMP2
OUT4	DRAIN/PUMP
OUT5	POWER IN
OUT6	ZONE/MOTOR
LRM	OUT FAULTY RELAY
RELAY1	ZONE CONTROL BOARD
COM	COMMON
D16	LP SWITCH
D15	FP SWITCH
D14	FLOAT SWITCH
D13	HYDRONIC PUMP
D12	NO FUNCTION
D11	SD
AD8	DISCHARGE 2
AD7	RETURN AIR 4
AD6	RETURN AIR 3/MODOR COIL 2
AD5	RETURN AIR 2/LST
AD4	RETURN AIR 1
AD3	LST 1
AD2	INDOOR COIL 1
SEC	TRANSFORMER SECONDARY
PRI	TRANSFORMER PRIMARY



EC-BOARD SPEED SELECTION - DIP SWITCH 2 (DIP2)				
SWITCH 1	SWITCH 2	SWITCH 3	SWITCH 4	SWITCH 5
OFF	OFF	OFF	OFF	OFF
ON	OFF	ON	OFF	ON
OFF	ON	OFF	ON	OFF
ON	ON	ON	OFF	ON
OFF	ON	OFF	ON	OFF
ON	ON	ON	ON	ON

Max (rpm)	1350	1000	900	800
Min (rpm)	1050	1000	900	800

DIP1: SWITCH SETTINGS	
OFF	ON
3 SPEED FAN HI/MED/LOW ACTION	ON
NORMAL FORWARD ACTION	ON
B0W & 1.25kW MOTOR LEAVE IN THIS POSITION	ON

DIPSWITCH SETTING	
OFF	ON
1	COOL ONLY
2	NO ELECTRIC HEATERS
3	1.5°C DIFFERENTIAL CONTROL
4	FAN ON IN COOL CYCLE FOR INDOOR SENSORS
5	AIR COOLED
6	TWO STAGE
7	FAULT RELAY ACTIVATED UPON FINAL LOCK OUT
8	FAN ON IN HEAT CYCLE FOR INDOOR SENSORS

DIP2: SWITCH SETTINGS	
OFF	ON
1	ON
2	ON
3	ON
4	ON
5	ON
6	ON
7	ON
8	ON

TSTAT BOARD	
OFF	ON
1	COOL ONLY
2	NO ELECTRIC HEATERS
3	1.5°C DIFFERENTIAL CONTROL
4	FAN ON IN COOL CYCLE FOR INDOOR SENSORS
5	AIR COOLED
6	TWO STAGE
7	FAULT RELAY ACTIVATED UPON FINAL LOCK OUT
8	FAN ON IN HEAT CYCLE FOR INDOOR SENSORS

ISSUE	MODIFICATION	EC/N	DATE	APPRD	DRG SIZE	No.	Matl	FINISH	ASSY No.
A	Set Dip 1, Switch No.3 to the "OFF" Position/Speed Selection Table Mod N3113	14-09-12	J.S.L.						

CLIENT WIRING	
REFER TO WEBSITE www.temperzone.biz FOR UP TO DATE INFORMATION	
WALL PAD 1	Vcc GND A B RED BLACK YELLOW/WHITE
WALL PAD 2	Vcc GND A B RED BLACK YELLOW/WHITE

Programmed by

PLOTTED 14-09-12

©temperzone ltd 2009

Drawn D.A.B Date 12-02-12

Scale

Revision

291-000-049 A



HWP 77&96 CEKSYD
WIRING SCHEMATIC

Title

TEMPERZONE	
------------	--

HWP 77/96 RKSYS

SPECIFICATION TABLE		HWP	HWP
CAPACITANCE - AS/MS 3823	MODEL	77R	96R
COOLING - NET	KW	7.75	9.65
HEATING - REVERSE CYCLE	KW	6.80	8.49
ELECTRICAL INPUT			
COOLING -	KW	2.14	2.68
HEATING - REVERSE CYCLE	KW	1.79	2.40
E.E.R. (COOLING)	KW/KW	3.62	3.53
ELECTRICAL			
SUPPLY REQUIRED 1PH, 200-252V ~ 50HZ INCLUDING VOLTAGE FLUCTUATION LIMITS			
COMPRESSOR RUN AMPS AT RATING	A	8.72	11
COMPRESSOR CAPACITOR SIZE	UF	95	55
RATING AMPS	A	9.35	11.8
MAX RUNNING AMPS (TOTAL)	A	12	16
VOLTAGE IN	V	230/240	230/240
IFM AMPS (MAX)	A	5	5
REFRIGERANT - R410A	kg	1.70	1.70
WEIGHT - NETT	kg	117	120
COMPRESSOR TYPE, ROTARY			
OIL TYPE, POLYVINY. ETHER (PVE)			

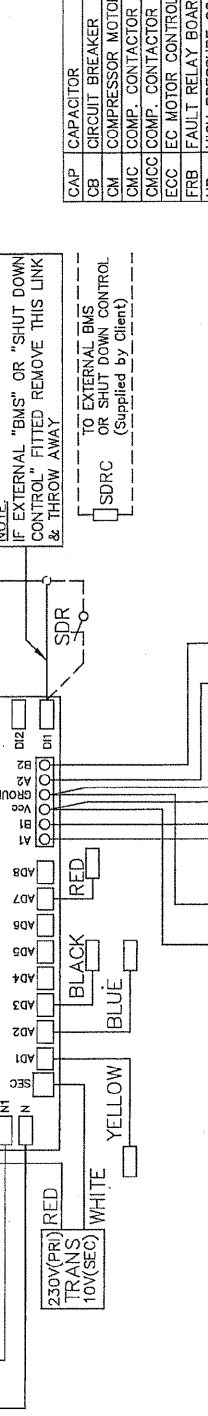
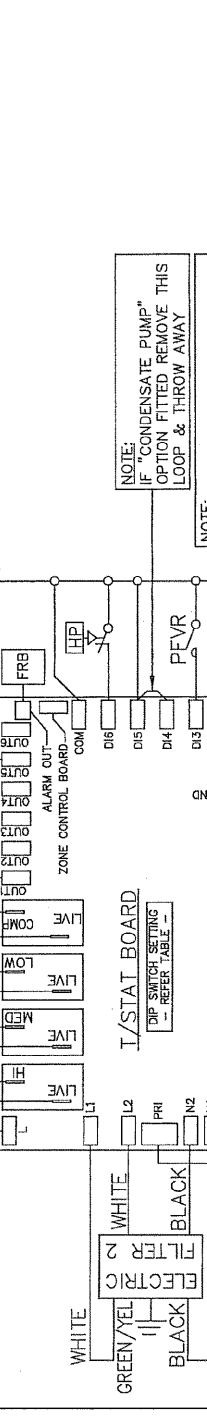
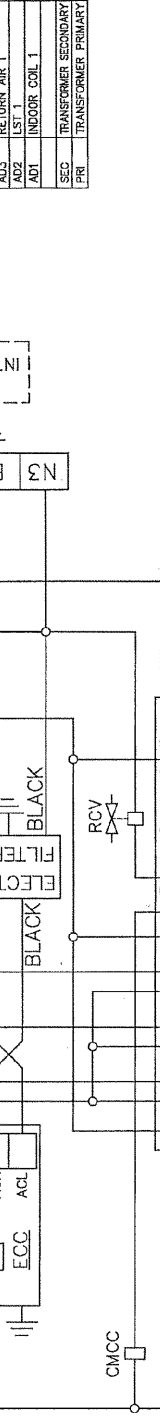
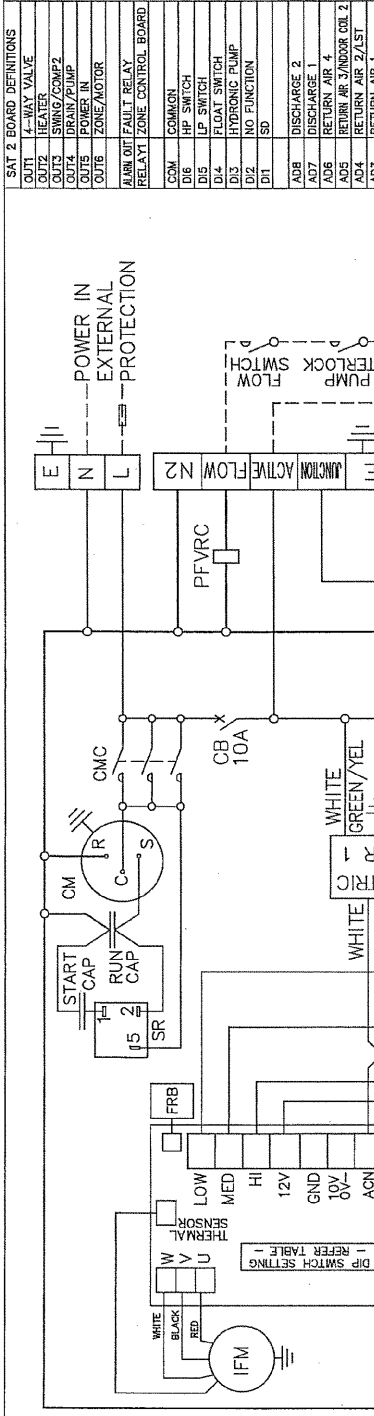
EC-BOARD SPEED SELECTION - DIP SWITCH 2 (DIP2)	
SWITCH 1	OFF OFF OFF OFF
SWITCH 2	OFF ON OFF OFF
SWITCH 3	ON ON OFF OFF
SWITCH 4	OFF OFF ON ON
SWITCH 5	OFF OFF OFF OFF
Max (rpm)	1350 1300 1200 1100
Min (rpm)	1050 1000 900 800

DIP1 SWITCH SETTING	
1	OFF ON
2	OFF ON
3	OFF ON
4	OFF ON

DIP2 SWITCH SETTING	
1	OFF ON
2	OFF ON
3	OFF ON
4	OFF ON
5	OFF ON
6	OFF ON
7	OFF ON
8	OFF ON

DIP3 SWITCH SETTING	
1	OFF ON
2	OFF ON
3	OFF ON
4	OFF ON
5	OFF ON
6	OFF ON
7	OFF ON
8	OFF ON

SAT 2 BOARD DEFINITIONS	
OUT1	4-WAY VALVE
OUT2	HEATER
OUT3	SWING/COMP2
OUT4	DRAIN PUMP
OUT5	POWER IN
OUT6	ZONE/MOTOR
ALN1	FAULT RELAY
ALN2	FAULT RELAY
ALN3	FAULT RELAY
ALN4	FAULT RELAY
ALN5	FAULT RELAY
ALN6	FAULT RELAY
ALN7	FAULT RELAY
ALN8	FAULT RELAY
ALN9	FAULT RELAY
ALN10	FAULT RELAY
ALN11	FAULT RELAY
ALN12	FAULT RELAY
ALN13	FAULT RELAY
ALN14	FAULT RELAY
ALN15	FAULT RELAY
ALN16	FAULT RELAY
ALN17	FAULT RELAY
ALN18	FAULT RELAY
ALN19	FAULT RELAY
ALN20	FAULT RELAY
ALN21	FAULT RELAY
ALN22	FAULT RELAY
ALN23	FAULT RELAY
ALN24	FAULT RELAY
ALN25	FAULT RELAY
ALN26	FAULT RELAY
ALN27	FAULT RELAY
ALN28	FAULT RELAY
ALN29	FAULT RELAY
ALN30	FAULT RELAY
ALN31	FAULT RELAY
ALN32	FAULT RELAY
ALN33	FAULT RELAY
ALN34	FAULT RELAY
ALN35	FAULT RELAY
ALN36	FAULT RELAY
ALN37	FAULT RELAY
ALN38	FAULT RELAY
ALN39	FAULT RELAY
ALN40	FAULT RELAY
ALN41	FAULT RELAY
ALN42	FAULT RELAY
ALN43	FAULT RELAY
ALN44	FAULT RELAY
ALN45	FAULT RELAY
ALN46	FAULT RELAY
ALN47	FAULT RELAY
ALN48	FAULT RELAY
ALN49	FAULT RELAY
ALN50	FAULT RELAY
ALN51	FAULT RELAY
ALN52	FAULT RELAY
ALN53	FAULT RELAY
ALN54	FAULT RELAY
ALN55	FAULT RELAY
ALN56	FAULT RELAY
ALN57	FAULT RELAY
ALN58	FAULT RELAY
ALN59	FAULT RELAY
ALN60	FAULT RELAY
ALN61	FAULT RELAY
ALN62	FAULT RELAY
ALN63	FAULT RELAY
ALN64	FAULT RELAY
ALN65	FAULT RELAY
ALN66	FAULT RELAY
ALN67	FAULT RELAY
ALN68	FAULT RELAY
ALN69	FAULT RELAY
ALN70	FAULT RELAY
ALN71	FAULT RELAY
ALN72	FAULT RELAY
ALN73	FAULT RELAY
ALN74	FAULT RELAY
ALN75	FAULT RELAY
ALN76	FAULT RELAY
ALN77	FAULT RELAY
ALN78	FAULT RELAY
ALN79	FAULT RELAY
ALN80	FAULT RELAY
ALN81	FAULT RELAY
ALN82	FAULT RELAY
ALN83	FAULT RELAY
ALN84	FAULT RELAY
ALN85	FAULT RELAY
ALN86	FAULT RELAY
ALN87	FAULT RELAY
ALN88	FAULT RELAY
ALN89	FAULT RELAY
ALN90	FAULT RELAY
ALN91	FAULT RELAY
ALN92	FAULT RELAY
ALN93	FAULT RELAY
ALN94	FAULT RELAY
ALN95	FAULT RELAY
ALN96	FAULT RELAY
ALN97	FAULT RELAY
ALN98	FAULT RELAY
ALN99	FAULT RELAY
ALN100	FAULT RELAY



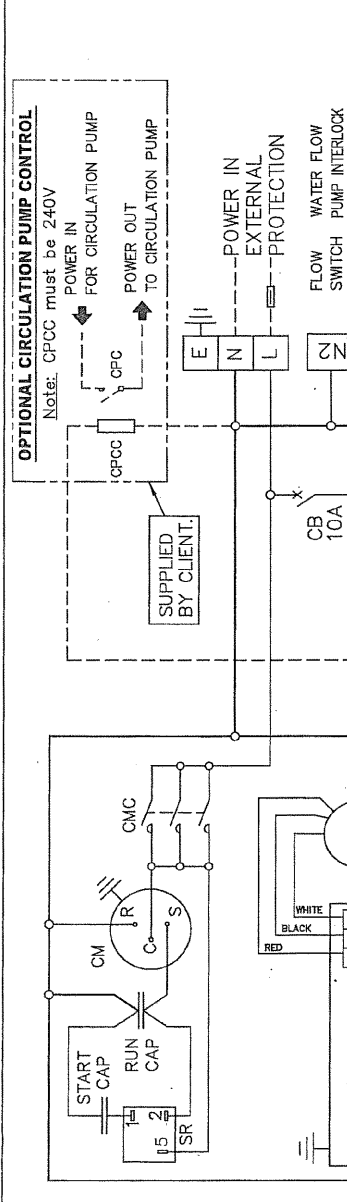
ISSUE	MODIFICATION	EC/N	DATE	APRVD	DRG SIZE	No.	DESCRIPTION	Mat.I	FINISH	ASSY No.
A	Set Dip 1, Switch No.3 to the "OFF" Position/Speed Selection Table Mod	N3113	12-09-12	J. S. L.						

temperzone
 HWP 77&96 RKSYS
 WIRING SCHEMATIC
 Title
 Drawn D.A.B
 Date 12-02-12
 Scale
 Revision
 Drawing No. 291-000-039
 Revision A
 Programmed by
 PLOTTED 12-09-12
 ©temperzone ltd 2009

HWP 77/96 CKSYN

PROTECTION BOARD DEFINITIONS

PUMP	PUMP OUTPUT
COMP	COMP. OR CMC OUTPUT
LIVE	COMP. RELAY FEED
PUMP IN	CIRC. PUMP POWER IN
PUMP OUT	CIRC. PUMP POWER OUT
COMP ON	CIRC. COMP. REQUEST
HEAT IN	HEAT CYCLE INPUT
CR	PUMP WATER FLOWING INPUT
WF	DRAIN/TRAY FLOAT SWITCH
HP	HP SWITCH INPUT
ERROUT	OUTPUT TO FAULT RELAY
LST	LOW SUCTION TEMP. SENSOR
DT	DISCHARGE TEMP. SENSOR
ID	INDOOR COIL TEMP. SENSOR
SEC	TRANSFORMER SECONDARY
PRI	TRANSFORMER PRIMARY



SPECIFICATION TABLE

HWP	HWP
MODEL	77C
AS/NZS 3823	96C
COOLING - NET	77C
COOLING - KW	7.75
9.65	
COOLING - KW	2.14
2.68	
COOLING - KW/KW	3.62
3.53	
SUPPLY REQUIRED IPh	200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS
COMPRESSOR RUN AMPS AT RATING	A 8.72 11
COMPRESSOR CAPACITOR SIZE	µF 55 55
RATING AMPS	A 9.35 11.8
MAX RUNNING AMPS (TOTAL)	A 12 16
VOLTAGE IN	V 230/240 230/240
IFM AMPS (MAX)	A 5 5
REFRIGERANT - R410A	kg 1.70 1.70
WEIGHT - NETT	kg 117 120
COMPRESSOR TYPE: ROTARY	
OIL TYPE: POLYVINYL ETHER (PVE)	

CLIENT WIRING

REFER TO WEBSITE
www.temperzone.biz
FOR UP TO DATE INFORMATION

EC-BOARD SPEED SELECTION - DIP SWITCH 2 (DIP2)

SWITCH-1	OFF	OFF	OFF	OFF
SWITCH 2	OFF	ON	OFF	OFF
SWITCH 3	ON	ON	OFF	ON
SWITCH 4	OFF	OFF	ON	ON
SWITCH 5	OFF	OFF	OFF	OFF
Max (rpm)	1350	1300	1200	1100
Min (rpm)	1050	1000	900	800

DO NOT USE ANY OTHER DIP COMBINATIONS EXCEPT THOSE SHOWN IN THE TABLE ADJACENT.

PROTECTION BOARD DIP SWITCH SETTING

STANDARD SETTING	OFF	ON
1	3 SPEED FAN HI/MED/LOW	0-10V CONTROL
2	NORMAL FORWARD ACTION	REVERSE ACTION
3	900W & 1.25KW MOTOR	DO NOT USE
4	LEAVE IN THIS POSITION	DO NOT USE

PROTECTION BOARD DIP SWITCH SETTING

STANDARD SETTING	OFF	ON
1	COOL ONLY	HEAT PUMP
2	FAULT RELAY ACTIVATED UPON FINAL LOCK OUT.	FAULT RELAY ACTIVATED WITH EACH SYSTEM FAULT
3	LST ACTIVATED AT -2°C	LST ACTIVATED AT -1°C
4	SPARE	

EC BOARD

STANDARD SETTING	OFF	ON
1	0-10V CONTROL	ON
2	REVERSE ACTION	ON
3	DO NOT USE	ON
4	DO NOT USE	ON

WIRING SCHEMATIC

temperzone

HWP 77&96 CKSYN

PLOTTED 12-09-12

©temperzone ltd 2009

Drawn D.A.B	Date 12-02-12	Drawing No.	Revision
Scale	As per	291-000-040	A

ISSUE	MODIFICATION	EC/N	DATE	APRVD
A	See Dip 1. Switch No.3 to the 'Off' Position/Speed Selection Table Mod	N3113	12-09-12	J.S.L.

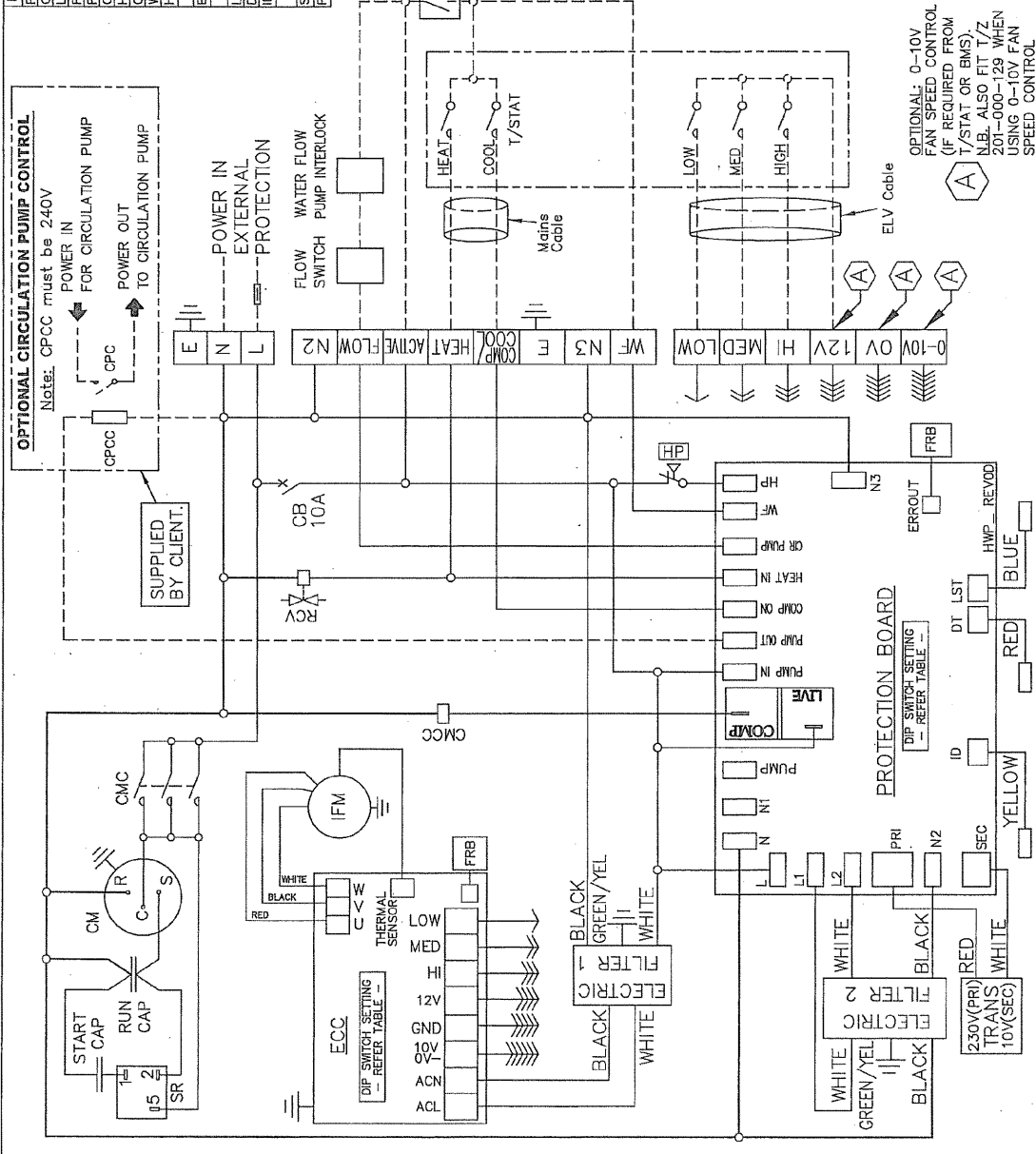
DRG SIZE	No.	DESCRIPTION	Mat'l	FINISH	ASSY No.

Programmed by

HWP 77/96 RKSYN

SPECIFICATION TABLE		HWP	HWP
CAPACITIES - AS/NZS 3823		77R	96R
COOLING - NET	KW	7.75	9.65
HEATING - REVERSE CYCLE	KW	6.80	8.45
ELECTRICAL INPUT			
COOLING -	KW	2.14	2.68
HEATING - REVERSE CYCLE	KW	1.79	2.40
E.L.R. (COOLING)	KW/KVA	3.62	3.53
ELECTRICAL			
SUPPLY REQUIRED 1PH 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS			
COMPRESSOR RUN AMPS AT RATING	A	6.72	11
COMPRESSOR CAPACITOR SIZE	µF	55	55
RATING AMPS	A	9.35	11.8
MAX RUNNING AMPS (TOTAL)	A	12	16
VOLTAGE IN	V	230/240	230/240
IFM AMPS (MAX)	A	5	5
REFRIGERANT - R410A	kg	1.70	1.70
WEIGHT - NETT	kg	117	120
COMPRESSOR TYPE: ROTARY			
OIL TYPE: POLYVINYL ETHER (PVE)			

PROTECTION BOARD DEFINITIONS	
PUMP	PUMP OUTPUT
COMP	COMP. OR CMC OUTPUT
LIVE	COMP. RELAY FEED
PUMP IN	PUMP POWER IN
COMP ON	CIRC. PUMP POWER OUT
HEAT IN	HEAT CYCLE INPUT
CIR	WATER FLOWING INPUT
WF	DRAIN/FRY FLOW INPUT
HP	HP SWITCH INPUT
ERR	OUTPUT TO FAULT RELAY
LST	LOW SUCTON TEMP SENSOR
DT	DISCHARGE TEMP. SENSOR
ID	INDOOR COIL TEMP. SENSOR
SEC	TRANSFORMER SECONDARY
PRI	TRANSFORMER PRIMARY



REFER TO WEBSITE
www.temperzone.biz
FOR UP TO DATE INFORMATION

CLIENT WIRING

EC-BOARD SPEED SELECTION - DIP SWITCH 2 (DIP2)

SWITCH 1	OFF	OFF	OFF	OFF	OFF
SWITCH 2	OFF	ON	OFF	OFF	OFF
SWITCH 3	ON	ON	OFF	ON	ON
SWITCH 4	OFF	OFF	ON	ON	ON
SWITCH 5	OFF	OFF	OFF	OFF	OFF

DO NOT USE ANY OTHER DIP SWITCH COMBINATIONS EXCEPT THOSE SHOWN IN THE TABLE ADJACENT.

Max (rpm)	1350	1300	1200	1100	1000
Min (rpm)	1050	1000	900	800	700

PROTECTION BOARD DIP SWITCH SETTING

OFF	ON
1	ON
2	ON
3	ON
4	ON

3 SPEED FAN H/MED/LOW
NORMAL FORWARD ACTION
900W & 1.25KW MOTOR
LEAVE IN THIS POSITION

STANDARD SETTING

OFF	ON
1	ON
2	ON
3	ON
4	ON

0-10V CONTROL
REVERSE ACTION
DO NOT USE
DO NOT USE

PROTECTION BOARD DIP SWITCH SETTING

OFF	ON
1	ON
2	ON
3	ON
4	ON

COOL ONLY
FAULT RELAY ACTIVATED UPON FINAL LOCK OUT.
LST ACTIVATED AT -2°C
SPARE

STANDARD SETTING

OFF	ON
1	ON
2	ON
3	ON
4	ON

HEAT PUMP
FAULT RELAY ACTIVATED WITH EACH SYSTEM FAULT.
LST ACTIVATED AT -1°C

Title		HWP 77&96 RKSYN								
Wiring Schematic		WIRING SCHEMATIC								
Plotted		12-09-12								
Programmed by		J.P.								
Drawing No.		291-000-035								
Revision		A								
Scale		As per								
Drawn D.A.B		Date 12-02-12								
PLOTTER		12-09-12								
©temperzone ltd		2009								
ISSUE	MODIFICATION	EC/N	DATE	APRVD	DRG SIZE	No.	DESCRIPTION	Mct.l.	FINISH	ASSY No.
A	Set Dip 1, Switch No.3 to the "OFF" Position/Speed Selection Table Mod	N3113	12-09-12	J.S.L.						

