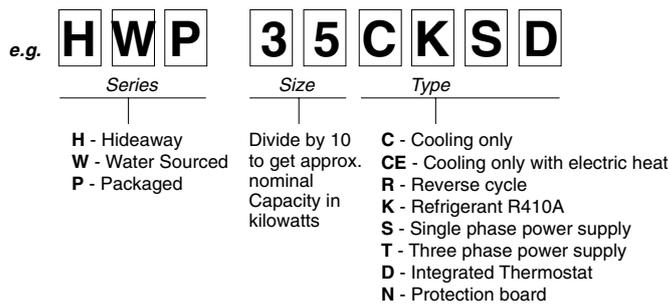


# HWP 35, 47, 58

## 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.

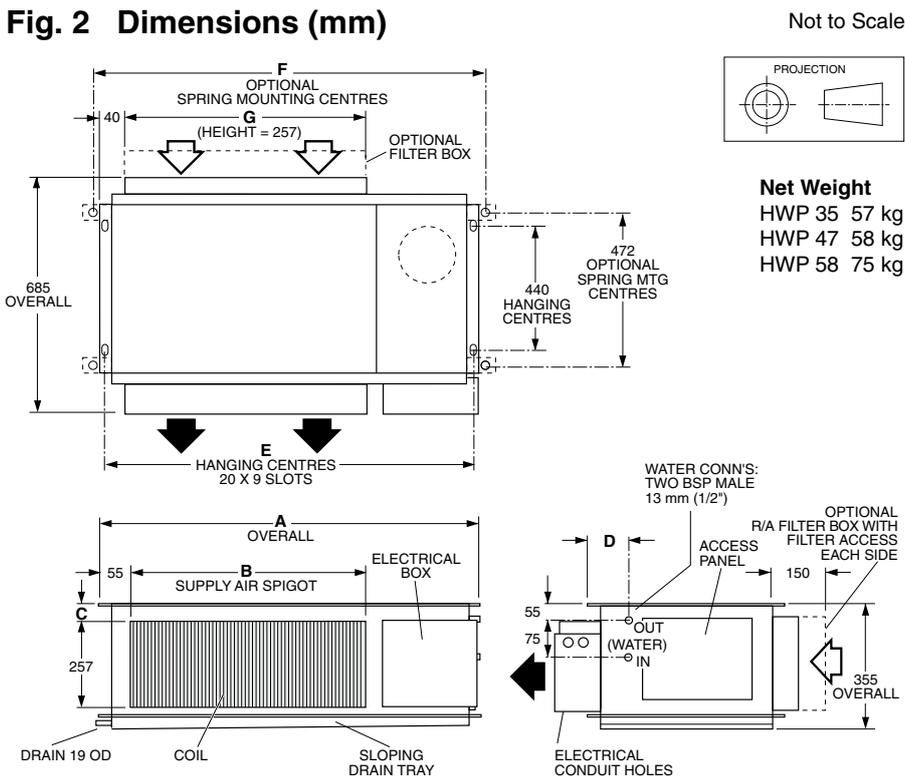
### OPTIONS

The following items are available as optional extras:

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

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

Fig. 2 Dimensions (mm)



### 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 Allow adequate clearance for the filter (optional) to be withdrawn to its full length.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.

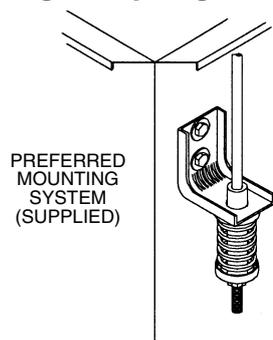
| MODEL  | A    | B   | C  | D   | E    | F    | G   |
|--------|------|-----|----|-----|------|------|-----|
| HWP 35 | 845  | 477 | 40 | 105 | 825  | 900  | 480 |
| HWP 47 | 845  | 477 | 40 | 105 | 825  | 900  | 480 |
| HWP 58 | 1110 | 742 | 45 | 90  | 1090 | 1165 | 745 |

Mount the unit level as it comes with a sloping drain tray. This tray is reversible – but not if using the optional condensate lift-pump; then the drain exit can only be at the opposite end to the compressor.

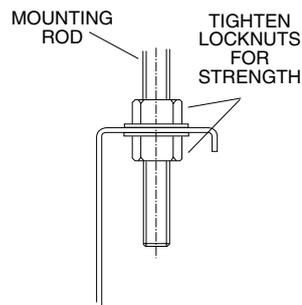
The drain line must have a slope of at least 1 in 50 and must not be piped to a level above the drain tray. Where required a condensate lift-pump should be used (optional extra).

When finally positioned, tighten the lock nuts on the mounting rods to give a firm installation (see Fig. 4).

**Fig. 3 Spring Mounting**



**Fig. 4 Solid Mounting**



**Condensate Drain**

The condensate drain is **not** to be trapped outside the unit. The drain line must be maintained at least 19 mm ID along its full length. Fit a vent pipe within 500 mm of the unit, 300 mm high and 10 mm ID (minimum); see Fig. 5. 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:    | 35   | 47   | 58   |
|---------|------|------|------|
| Minimum | 0.17 | 0.27 | 0.36 |

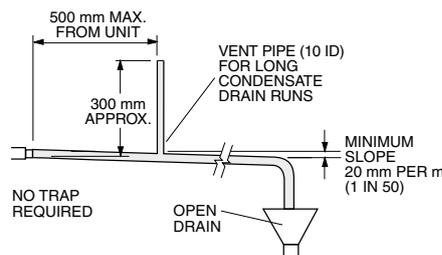
**Electrical**

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.

**Air / Water Flow**

Refer to HWP 35–58 Data Sheet pamphlets for detailed information on air handling performance and water flow rates.

**Fig. 5 Condensate Drain**



**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.

## Water Valve Control Option

Once the SAT-2 room thermostat reaches the desired room temperature, it is capable of switching off both the HWP unit's compressor and an external water control valve (if fitted); refer wiring diagram. This provides economy of operation by reducing the load on the central water supply system.

## 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. 3669 dated 12/12. CKSD & RKSD wiring rev.'s L & J resp.

## Table 1 SAT-2 Controller - Troubleshooting

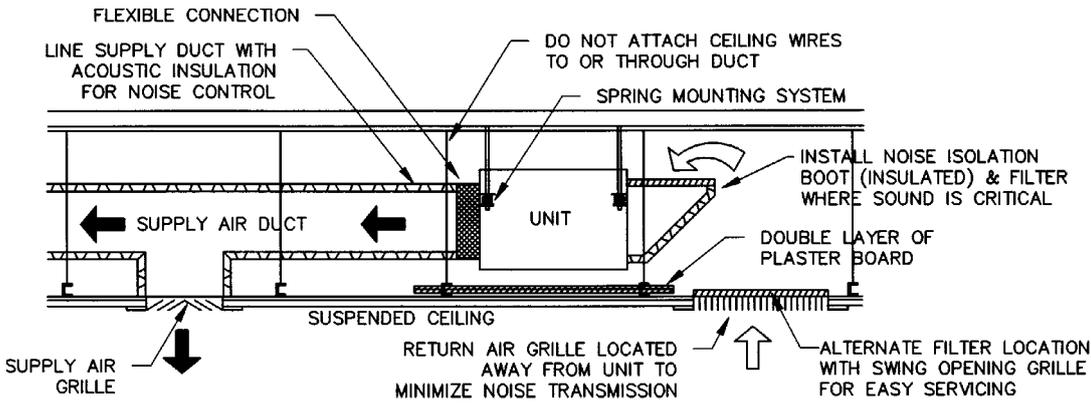
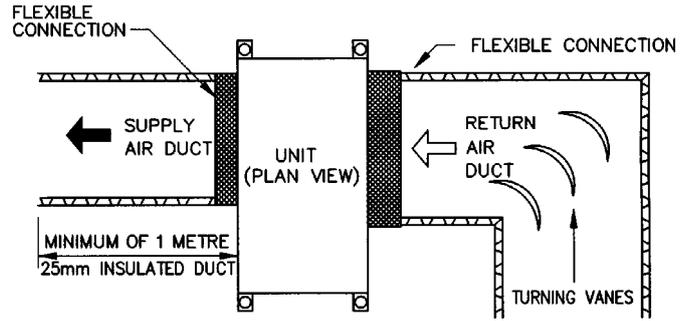
If an fault is detected, an 'ERR' symbol will light up on the Wall plaque display. The following error codes may be displayed:

| 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         |                |

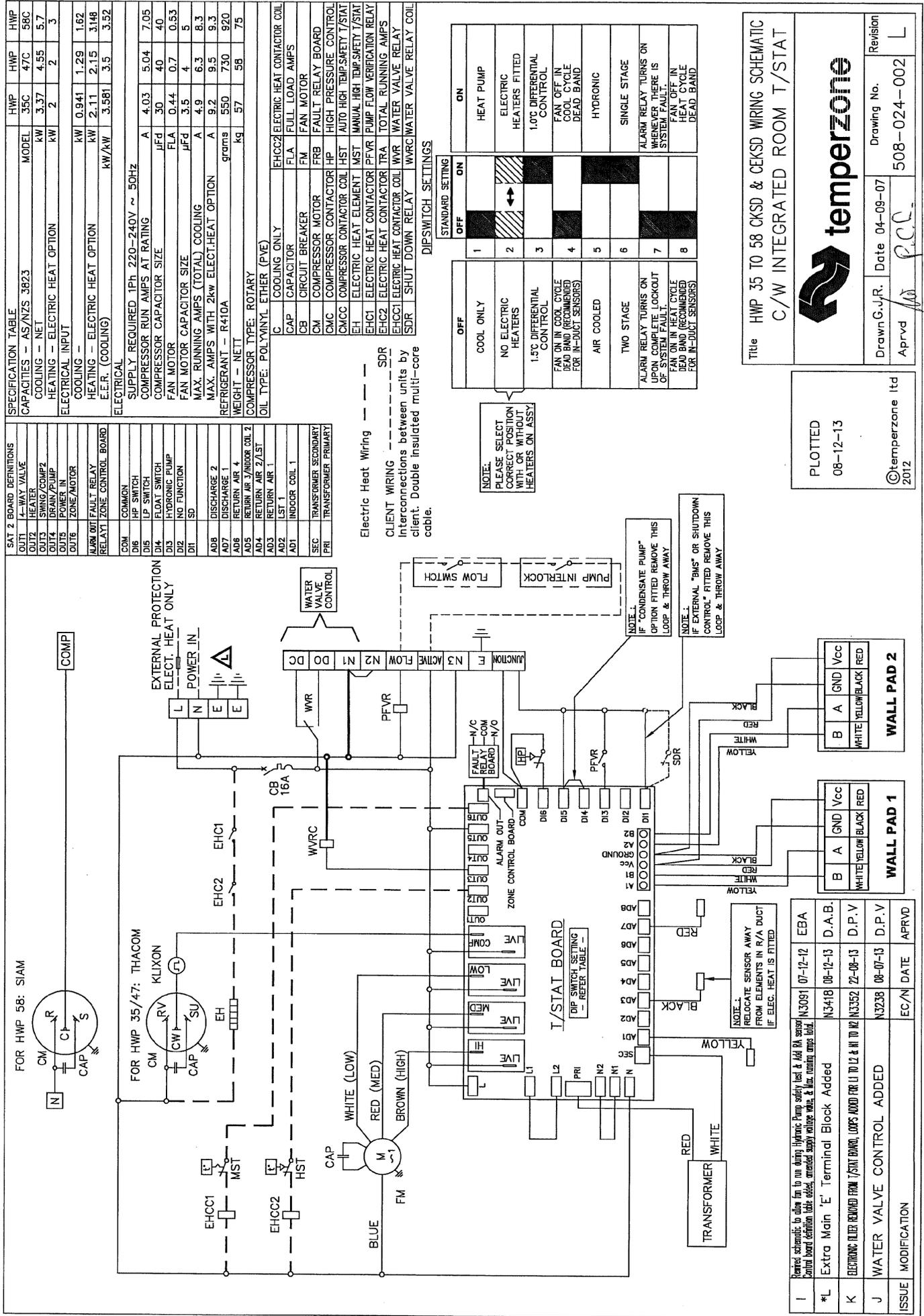
**Fig. 6 Application Considerations**

**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 35-58 CKSD & CEKSD



**SAT 2 BOARD DEFINITIONS**

|           |                            |
|-----------|----------------------------|
| GOUT1     | 4-WAY VALVE                |
| GOUT2     | HEATER                     |
| GOUT3     | SWING/COMP2                |
| GOUT4     | DRAIN/PUMP                 |
| GOUT5     | POWER IN                   |
| GOUT6     | ZONE/MOTOR                 |
| ALARM OUT | FAULT RELAY                |
| RELAY1    | ZONE CONTROL BOARD         |
| COM       | COMMON                     |
| D16       | HP SWITCH                  |
| D15       | LP SWITCH                  |
| D14       | FLOAT SWITCH               |
| D13       | HYDRONIC PUMP              |
| D12       | RC FUNCTION                |
| D11       | SD                         |
| A08       | DISCHARGE 2                |
| A07       | DISCHARGE 1                |
| A06       | RETURN AIR 3/INDOOR COIL 2 |
| A05       | RETURN AIR 4               |
| A04       | RETURN AIR 2/LST           |
| A03       | RETURN AIR 1               |
| A02       | LST 1                      |
| A01       | INDOOR COIL 1              |
| SEC       | TRANSFORMER SECONDARY      |
| PRI       | TRANSFORMER PRIMARY        |

**SPECIFICATION TABLE**

|                                |       |       |      |       |
|--------------------------------|-------|-------|------|-------|
| CAPACITIES - AS/NZS 3823       | MODEL | HWP   | HWP  | HWP   |
| COOLING - NET                  | KW    | 35C   | 47C  | 58C   |
| HEATING - ELECTRIC HEAT OPTION | KW    | 3.37  | 4.55 | 5.7   |
| ELECTRICAL INPUT               |       |       |      |       |
| COOLING -                      | KW    | 0.941 | 1.29 | 1.62  |
| HEATING - ELECTRIC HEAT OPTION | KW    | 2.11  | 2.15 | 3.148 |
| E.E.R. (COOLING)               | KW/KW | 3.581 | 3.5  | 3.52  |

**ELECTRICAL**

SUPPLY REQUIRED 1Ph 220-240V ~ 50Hz

COMPRESSOR RUN AMPS AT RATING

|   |      |      |      |
|---|------|------|------|
| A | 4.03 | 5.04 | 7.05 |
|---|------|------|------|

COMPRESSOR CAPACITOR SIZE

|     |    |    |    |
|-----|----|----|----|
| JFf | 30 | 40 | 40 |
|-----|----|----|----|

FAN MOTOR

|     |      |     |      |
|-----|------|-----|------|
| FLA | 0.44 | 0.7 | 0.53 |
|-----|------|-----|------|

FAN MOTOR CAPACITOR SIZE

|     |     |   |   |
|-----|-----|---|---|
| JFf | 3.5 | 4 | 5 |
|-----|-----|---|---|

MAX. RUNNING AMPS (TOTAL) COOLING

|   |     |     |     |
|---|-----|-----|-----|
| A | 4.9 | 6.3 | 8.3 |
|---|-----|-----|-----|

MAX. AMPS WITH 2kW ELECT. HEAT OPTION

|   |     |     |     |
|---|-----|-----|-----|
| A | 9.2 | 9.5 | 9.3 |
|---|-----|-----|-----|

REFRIGERANT - R410A

|       |     |     |     |
|-------|-----|-----|-----|
| grams | 550 | 730 | 920 |
|-------|-----|-----|-----|

WEIGHT - NETT

|    |    |    |    |
|----|----|----|----|
| kg | 57 | 58 | 75 |
|----|----|----|----|

COMPRESSOR TYPE: ROTARY

OIL TYPE: POLYVINYL ETHER (PVE)

|       |                              |       |                                 |
|-------|------------------------------|-------|---------------------------------|
| C     | COOLING ONLY                 | EHCC2 | ELECTRIC HEAT CONTACTOR COIL    |
| CAP   | CAPACITOR                    | FLA   | FULL LOAD AMPS                  |
| CB    | CIRCUIT BREAKER              | FM    | FAN MOTOR                       |
| CM    | COMPRESSOR MOTOR             | FRB   | FAULT RELAY BOARD               |
| CMC   | COMPRESSOR CONTACTOR         | HP    | HIGH PRESSURE CONTROL           |
| CMCC  | COMPRESSOR CONTACTOR COIL    | HST   | AUTO HIGH TEMP. SAFETY T/STAT   |
| EH    | ELECTRIC HEAT ELEMENT        | MST   | MANUAL HIGH TEMP. SAFETY T/STAT |
| EHC1  | ELECTRIC HEAT CONTACTOR      | PEVFR | PUMP FLOW VERIFICATION RELAY    |
| EHC2  | ELECTRIC HEAT CONTACTOR      | TRA   | TOTAL RUNNING AMPS              |
| EHCC1 | ELECTRIC HEAT CONTACTOR COIL | WVR   | WATER VALVE RELAY               |
| SDR   | SHUT DOWN RELAY              | WVRC  | WATER VALVE RELAY COIL          |

**DIP SWITCH SETTINGS**

| STANDARD SETTING | OFF  | ON   |
|------------------|--|--|
| 1                | COOL ONLY  | HEAT PUMP  |
| 2                | NO ELECTRIC HEATERS  | ELECTRIC HEATERS FITTED                              |
| 3                | 1.5°C DIFFERENTIAL CONTROL                                       | 1.0°C DIFFERENTIAL CONTROL                           |
| 4                | FAN ON IN COOL CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS) | FAN OFF IN COOL CYCLE DEAD BAND                      |
| 5                | AIR COOLED   | HYDRONIC   |
| 6                | TWO STAGE  | SINGLE STAGE   |
| 7                | ALARM RELAY TURNS ON UPON COMPLETE LOCKOUT OF SYSTEM FAULT.      | ALARM RELAY TURNS ON WHENEVER THERE IS SYSTEM FAULT. |
| 8                | FAN ON IN COOL CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS) | FAN OFF IN COOL CYCLE DEAD BAND                      |

**Electric Heat Wiring** - SDR

**CLIENT WIRING** - SDR

Interconnections between units by client. Double insulated multi-core cable.

**NOTE:** PLEASE SELECT CORRECT POSITION WITH OR WITHOUT HEATERS ON ASSY

**NOTE 1:** IF "CONDENSATE PUMP" OPTION FITTED REMOVE THIS LOOP & THROW AWAY

**NOTE 2:** IF EXTERNAL "BMS" OR SHUTDOWN CONTROL" FITTED REMOVE THIS LOOP & THROW AWAY

**WALL PAD 1**

|       |        |       |     |
|-------|--------|-------|-----|
| B     | A      | GND   | Vcc |
| WHITE | YELLOW | BLACK | RED |

**WALL PAD 2**

|       |        |       |     |
|-------|--------|-------|-----|
| B     | A      | GND   | Vcc |
| WHITE | YELLOW | BLACK | RED |

**TEMPERZONE**

**Title** HWP 35 TO 58 CKSD & CEKSD WIRING SCHEMATIC  
C/W INTEGRATED ROOM T/STAT

**PLOTTED** 08-12-13

**Drawn** G.J.R. **Date** 04-09-07 **Drawing No.** 508-024-002 **Revision** L

**Aprvd** P.C.C.

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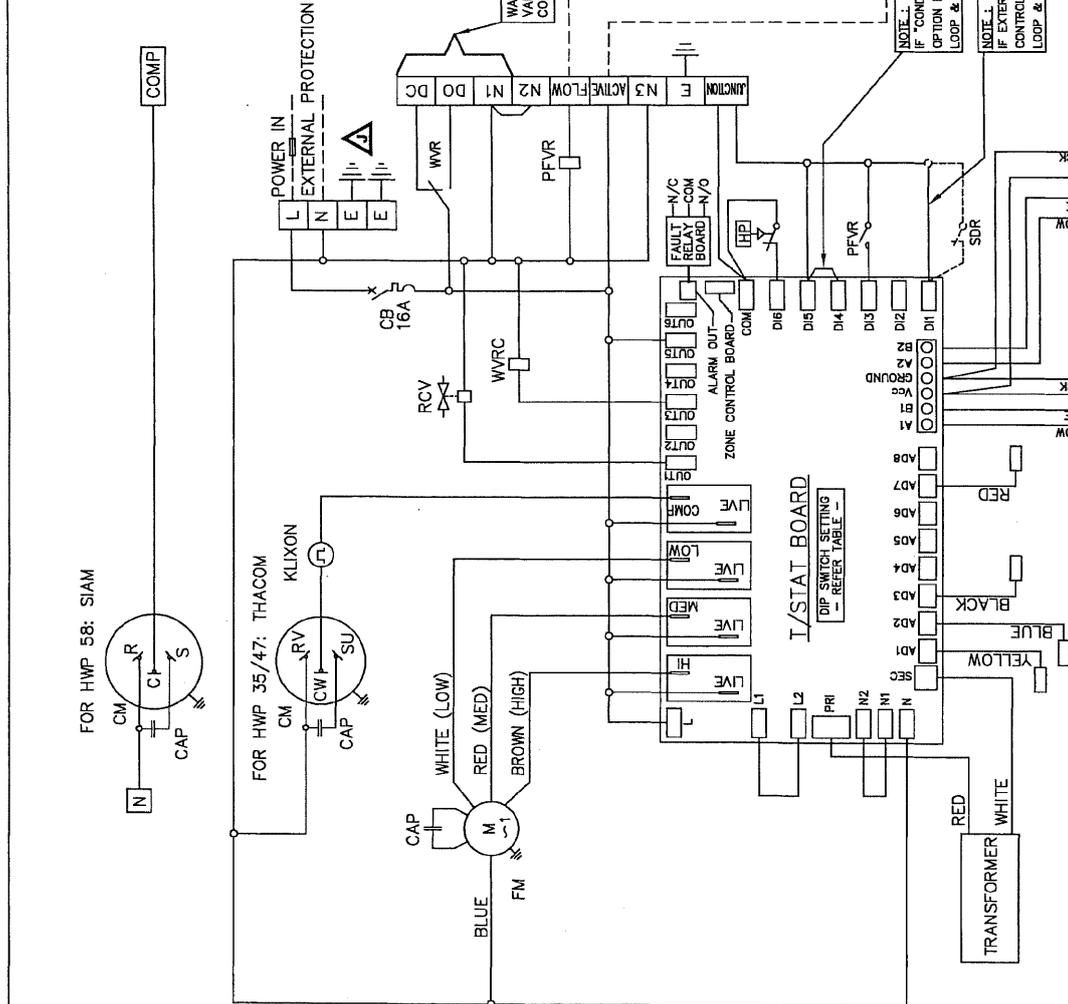
**ISSUE**

| ISSUE | MODIFICATION  | EC/N  | DATE     | APRVD  |
|-------|---|-------|----------|--------|
| I     | Revised schematic to allow fan to run during Hydronic Pump safety test & Add R/A sensor. Control board location table added, amended supply voltage wires & flow, running amps field. | N3091 | 07-12-12 | EBA    |
| *L    | Extra Main 'E' Terminal Block Added   | N3418 | 08-12-13 | D.A.B. |
| K     | ELECTRONIC FLEET REQUIRED FROM T/STAT BOARD, LOOPS ADDED FOR (L TO 12 & H1 TO 10)   | N3352 | 22-08-13 | D.P.V  |
| J     | WATER VALVE CONTROL ADDED   | N3238 | 08-07-13 | D.P.V  |

**HWP 35-58 RKSD**

| SPECIFICATION TABLE                 |                           | HWP   | HWP                          | HWP  |
|-------------------------------------|---------------------------|-------|------------------------------|------|
| CAPACITIES - AS/NZS 3823            |                           | MODEL | 35R                          | 47R  |
| COOLING - NET                       |                           | kW    | 3.37                         | 4.55 |
| HEATING - REVERSE CYCLE             |                           | kW    | 3.1                          | 4.78 |
| ELECTRICAL INPUT                    |                           |       |                              |      |
| COOLING -                           |                           | kW    | 0.941                        | 1.29 |
| HEATING - REVERSE CYCLE             |                           | kW    | 0.86                         | 1.28 |
| E.E.R. (COOLING)                    |                           | kW/kW | 3.581                        | 3.5  |
| ELECTRICAL                          |                           |       |                              |      |
| SUPPLY REQUIRED 1Ph 220-240V ~ 50Hz |                           |       |                              |      |
| COMPRESSOR RUN AMPS AT RATING       |                           | A     | 4.03                         | 5.04 |
| COMPRESSOR CAPACITOR SIZE           |                           | µF/d  | 30                           | 40   |
| FAN MOTOR                           |                           | FLA   | 0.44                         | 0.58 |
| FAN MOTOR CAPACITOR SIZE            |                           | µF/d  | 3.5                          | 4    |
| MAX. RUNNING AMPS (TOTAL)           |                           | A     | 4.9                          | 6.3  |
| REFRIGERANT - R410A                 |                           | grams | 550                          | 730  |
| WEIGHT - NETT                       |                           | kg    | 57                           | 58   |
| 75                                  |                           |       |                              |      |
| COMPRESSOR TYPE: ROTARY             |                           |       |                              |      |
| OIL TYPE: POLYVINYL ETHER (PVE)     |                           |       |                              |      |
| CAP                                 | CAPACITOR                 | FRB   | FAULT RELAY BOARD            |      |
| CB                                  | CIRCUIT BREAKER           | HP    | HIGH PRESSURE CONTROL        |      |
| CM                                  | COMPRESSOR MOTOR          | PFVR  | PUMP FLOW VERIFICATION RELAY |      |
| CMC                                 | COMPRESSOR CONTACTOR      | R     | REVERSE CYCLE                |      |
| CMCC                                | COMPRESSOR CONTACTOR COIL | RCV   | REVERSING VALVE              |      |
| FLA                                 | FULL LOAD AMPS            | TRA   | TOTAL RUNNING AMPS           |      |
| FM                                  | FAN MOTOR                 | WVR   | WATER VALVE RELAY            |      |
| SDR                                 | SHUT DOWN RELAY           | WVRC  | WATER VALVE RELAY COIL       |      |

| SAT 2 BOARD DEFINITIONS |                            |
|-------------------------|----------------------------|
| OUT1                    | 4-WAY VALVE                |
| OUT2                    | WATER COMP2                |
| OUT3                    | DRAIN PUMP                 |
| OUT4                    | POWER IN                   |
| OUT5                    | ZONE/MOTOR                 |
| OUT6                    | ALARM OUT/FAULT RELAY      |
| RELAY1                  | ZONE CONTROL BOARD         |
| COM                     | COMMON                     |
| D16                     | HP SWITCH                  |
| D15                     | LP SWITCH                  |
| D14                     | FLOAT SWITCH               |
| D13                     | HYDRONIC PUMP              |
| D12                     | NO FUNCTION                |
| D11                     | SD                         |
| A08                     | DISCHARGE 2                |
| A07                     | RETURN AIR 4               |
| A06                     | RETURN AIR 3/INDOOR COIL 2 |
| A05                     | RETURN AIR 2/OUT           |
| A04                     | RETURN AIR 1               |
| A03                     | INDOOR COIL 1              |
| A02                     | LIST 1                     |
| A01                     | INDOOR COIL 1              |
| SEC                     | TRANSFORMER SECONDARY      |
| PRI                     | TRANSFORMER PRIMARY        |



| DIPSWITCH SETTINGS |  |
|--------------------|--|
| STANDARD SETTING   | ON   |
| 1                  | COOL ONLY  |
| 2                  | NO ELECTRIC HEATERS  |
| 3                  | 1.5°C DIFFERENTIAL CONTROL                                       |
| 4                  | FAN ON IN COOL CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS) |
| 5                  | AIR COOLED   |
| 6                  | TWO STAGE  |
| 7                  | ALARM RELAY TURNS ON UPON COMPLETE LOCKOUT OF SYSTEM FAULT       |
| 8                  | FAN ON IN HEAT CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS) |

CLIENT WIRING ---  
Interconnections between units by client. Double insulated multi-core cable.

**temperzone**

Title HWP 35 TO 58 RKSD WIRING SCHEMATIC  
C/W INTEGRATED ROOM T/STAT

PLOTTED 08-12-13

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Drawn G.J.R. Date 06-09-07 Drawing No. 507-014-002 Revision J

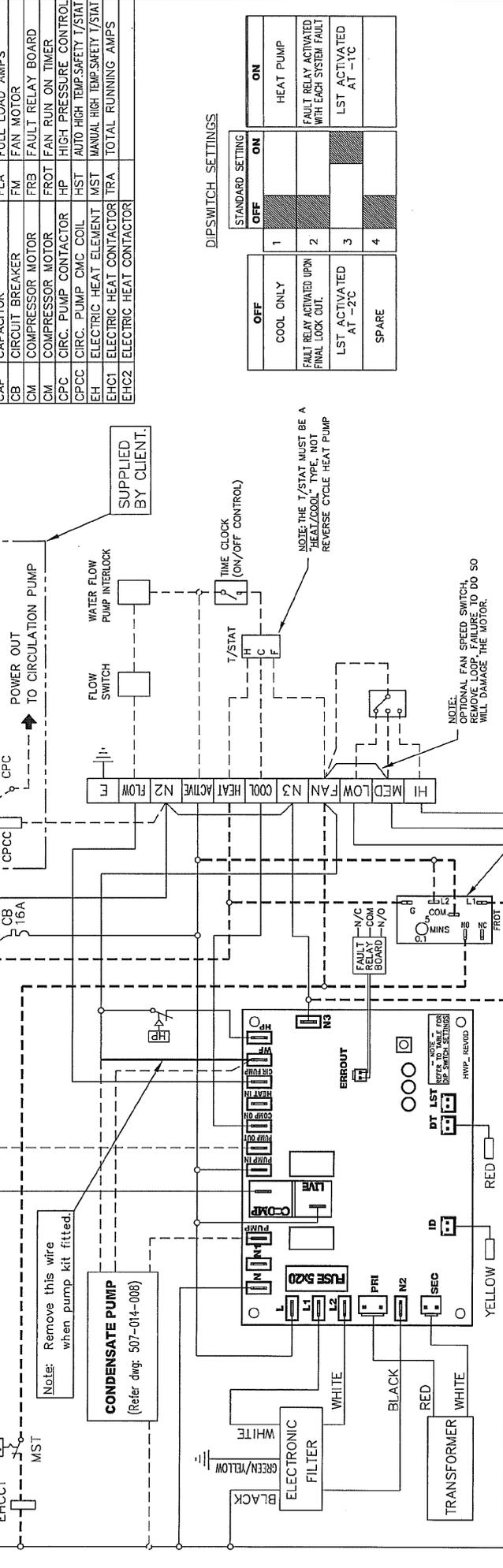
Aprvd *P.C.R.*

| ISSUE | MODIFICATION  | EC/N  | DATE     | APRVD  |
|-------|---|-------|----------|--------|
| H     | WATER VALVE CONTROL ADDED   | N3238 | 08-08-13 | D.P.V  |
| G     | Revised schematic to allow fan to run during hydronic pump safety test & full RA sensor. Control board definition table added, amended supply voltage values & Max. running amps total. | N3091 | 07-12-12 | EBA    |
| F     | UPDATE TO MEET MEPS REGISTRATION  | N2720 | 16-12-10 | ROD    |
| *J    | Extra Main 'E' Terminal Block Added   | N3418 | 08-12-13 | D.A.B. |
| I     | ELECTRICAL RELAY REMOVED FROM 1/STAT BOARD. CMPS ADDED FOR L1 TO L2 & H TO H2   | N3352 | 22-08-13 | D.P.V  |

# HWP 35-58 CKSN & CEKS

**SPECIFICATION TABLE**

| Model  | HWP                     | HWP       | HWP                             |
|--|-------------------------|-----------|---------------------------------|
| AS/NZS 3823  | 35C                     | 47C       | 58C                             |
| COOLING - NET  | 3.37 kW                 | 4.55 kW   | 5.7 kW                          |
| HEATING - ELECTRIC HEAT OPTION   | 2 kW                    | 2 kW      | 3 kW                            |
| <b>ELECTRICAL INPUT</b>  |                         |           |                                 |
| COOLING - kW/TRA   | 0.94/4.4                | 1.29/5.6  | 1.62/7.5                        |
| HEATING - ELECTRIC HEAT OPTION kW/TRA                                    | 2.11/8.77               | 2.15/8.82 | 3.14/13.14                      |
| E.E.R. (COOLING)   | 3.581                   | 3.5       | 3.52                            |
| <b>ELECTRICAL</b>  |                         |           |                                 |
| SUPPLY REQUIRED 1Ph 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS |                         |           |                                 |
| COMPRESSOR RUN AMPS AT RATING  | A                       | 4.03      | 5.04                            |
| COMPRESSOR CAPACITOR SIZE  | µF                      | 30        | 40                              |
| FAN MOTOR FLA  | 0.44                    | 0.58      | 0.53                            |
| FAN MOTOR CAPACITOR SIZE   | µF                      | 3.5       | 4                               |
| <b>EXTERNAL PROTECTION SIZE WITH ELECT. HEAT OPTION</b>                  |                         |           |                                 |
| REFRIGERANT - R410A  | A                       | 20        | 25                              |
| WEIGHT - NETT  | grams                   | 550       | 730                             |
| COMPRESSOR TYPE: ROTARY  | kg                      | 57        | 75                              |
| <b>OIL TYPE: POLYVINYL ETHER (PVE)</b>                                   |                         |           |                                 |
| C  | COOLING ONLY            | EHC2      | ELECTRIC HEAT CONTACTOR COIL    |
| CAP  | CAPACITOR               | FLA       | FULL LOAD AMPS                  |
| CB   | CIRCUIT BREAKER         | FM        | FAN MOTOR                       |
| CM   | COMPRESSOR MOTOR        | FRB       | FAULT RELAY BOARD               |
| CM   | COMPRESSOR MOTOR        | FROT      | FAN RUN ON TIMER                |
| CPCC   | CIRCUIT PUMP CONTACTOR  | HP        | HIGH PRESSURE CONTROL           |
| CPCC   | CIRCUIT PUMP CMC COIL   | HST       | AUTO HIGH TEMP. SAFETY T/STAT   |
| EH   | ELECTRIC HEAT ELEMENT   | MST       | MANUAL HIGH TEMP. SAFETY T/STAT |
| EHC1   | ELECTRIC HEAT CONTACTOR | IRA       | TOTAL RUNNING AMPS              |
| EHC2   | ELECTRIC HEAT CONTACTOR |           |                                 |



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Title HWP 35 TO 58, CKSN & CEKS  
WIRING SCHEMATIC-PROTECTION BOARD

Drawn G.J.R. Date 07-09-07 Drawing No. 508-044-002  
Scale *kgvd* Revision G

PLOTTED 16-12-10  
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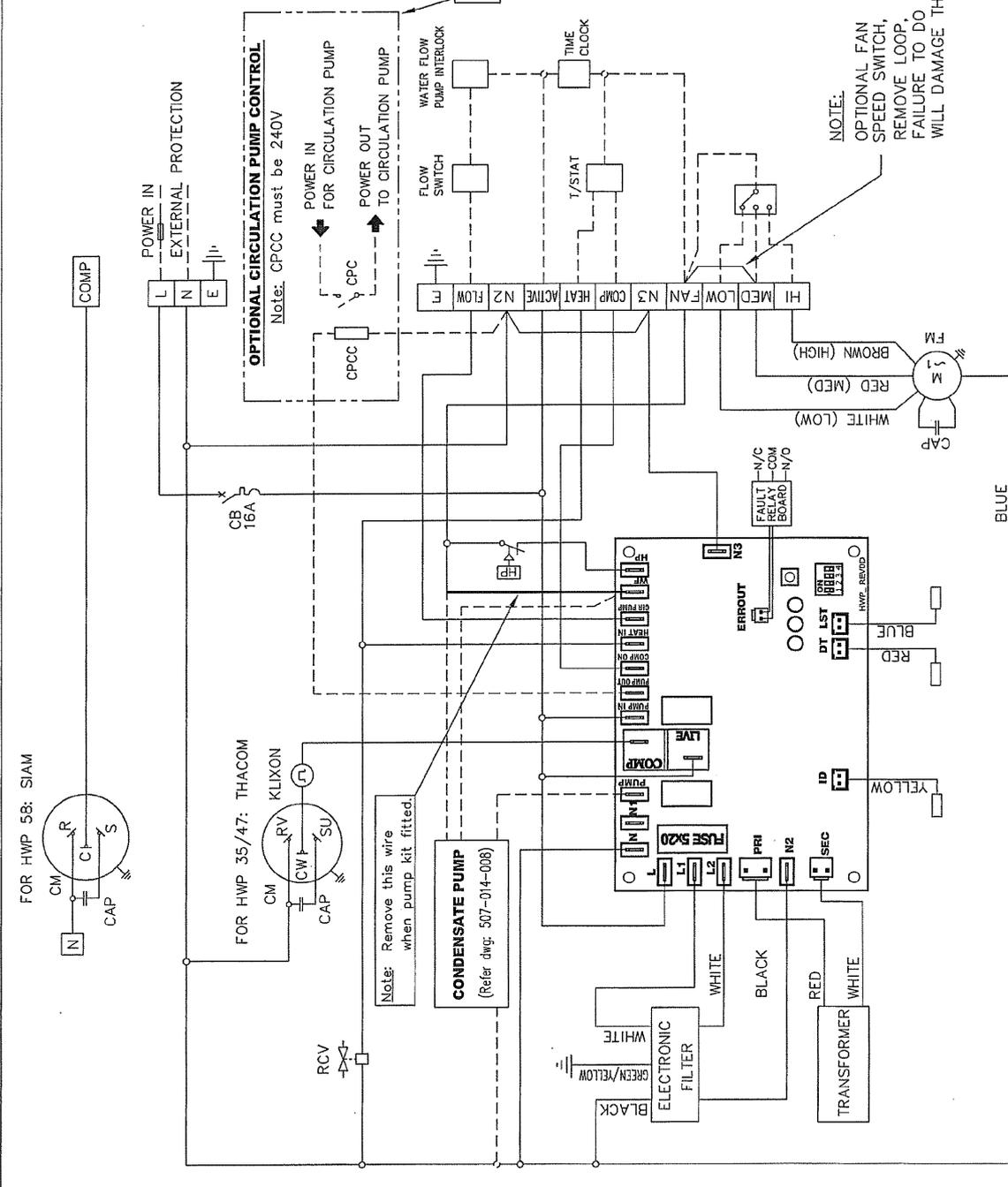
Electric Heat Wiring c/w Fan Run On Timer  
CLIENT WIRING Interconnections between units by client. Double insulated multi-core cable.

| ISSUE | MODIFICATION  | EC/N | DATE           | APRVD |
|-------|---|------|----------------|-------|
| G     | UPDATE TO MEET MEPS REGISTRATION N2720  |      | 16-12-10       | ROD   |
| F     | REFERENCE TO P.O.E OIL REMOVED  |      | N2512 28-04-10 | ROD   |
| E     | 'FUSE' NOW 'PROTECTION', EXT PROTECTION DATA REMOVED  |      | N2358 10-11-09 | KTT   |
| D     | FAN RUN ON TIMER FITTED FOR ELECTRIC HEAT OPTION ONLY. LEGEND & NOTES UPDATED. ON/OFF SWITCH SHOWN. BLUE SENSOR NOT FITTED ON 'C' VERSION. T/STAT LAYOUT UPDATED. |      | N2133 08-08-09 | D.A.B |

# HWP 35-58 RKSN

| SPECIFICATION TABLE  |                      | HWP    | HWP                   | HWP      |
|--|----------------------|--------|-----------------------|----------|
| CAPACITIES - AS/NZS 3823   |                      | MODEL  | 35R                   | 58R      |
| COOLING - NET  |                      | kW     | 3.37                  | 4.55     |
| HEATING - REVERSE CYCLE  |                      | kW     | 3.1                   | 4.78     |
| ELECTRICAL INPUT   |                      |        |                       |          |
| COOLING -  |                      | kW/TRA | 0.91/4.4              | 1.29/5.6 |
| HEATING - REVERSE CYCLE  |                      | kW/TRA | 0.86/4.2              | 1.28/5.6 |
| E.F.R. (COOLING)   |                      | kW/kW  | 3.581                 | 3.5      |
| ELECTRICAL   |                      |        |                       |          |
| SUPPLY REQUIRED 1Ph 200-252V ~ 50Hz INCLUDING VOLTAGE FLUCTUATION LIMITS |                      |        |                       |          |
| COMPRESSOR RUN AMPS AT RATING  |                      | A      | 4.03                  | 5.04     |
| COMPRESSOR CAPACITOR SIZE  |                      | µF@    | 30                    | 40       |
| FAN MOTOR  |                      | FLA    | 0.44                  | 0.58     |
| FAN MOTOR CAPACITOR SIZE   |                      | µF@    | 3.5                   | 4        |
| RECOMMENDED EXTERNAL PROTECTION SIZE MOTOR RATED                         |                      | A      | 16                    | 25       |
| REFRIGERANT - R410A  |                      | grams  | 550                   | 730      |
| WEIGHT - NET:  |                      | Kg     | 57                    | 75       |
| COMPRESSOR TYPE: ROTARY  |                      |        |                       |          |
| OIL TYPE: POLYVINYL ETHER (PVE)  |                      |        |                       |          |
| ICAP   | ICAPACITOR           | FM     | FAN MOTOR             |          |
| CB   | CIRCUIT BREAKER      | FRB    | FAULT RELAY BOARD     |          |
| CM   | COMPRESSOR MOTOR     | HP     | HIGH PRESSURE CONTROL |          |
| CFC  | CIRC. PUMP CONTACTOR | R      | REVERSE CYCLE         |          |
| CPCC   | CIRC. PUMP CMC COIL  | RCV    | REVERSING VALVE       |          |
| FLA  | FULL LOAD AMPS       | TRA    | TOTAL RUNNING AMPS    |          |

| 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                                      |   |



SUPPLIED BY CLIENT.

DIPSWITCH SETTINGS

NOTE: OPTIONAL FAN SPEED SWITCH, REMOVE LOOP, FAILURE TO DO SO WILL DAMAGE THE MOTOR.

Title HWP 35 TO 58 RKSN  
 WIRING SCHEMATIC-PROTECTION BOARD

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Drawn G.J.R. Date 10-09-07 Drawing No. 507-034-002 Revision F  
 Scale *Handwritten*

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CLIENT WIRING - Interconnections between units by client. Double insulated multi-core cable.

| ISSUE | MODIFICATION                                    | EC/N  | DATE     | APRVD |
|-------|---|-------|----------|-------|
| F     | UPDATED TO MEET MEPS REGISTRATION               | N2720 | 16-12-10 | ROD   |
| E     | REFERENCE TO P.O.E OIL REMOVED                  | N2512 | 28-04-10 | ROD   |
| D     | 'FUSE' NOW 'PROTECTION', ELEC HEAT DATA REMOVED | N2358 | 10-11-09 | KTT   |