

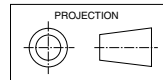
ISDL 86/114 KY-D (c/w EC Motor & SAT-2 Controller)

Ducted Split System Indoor Units

Installation & Maintenance

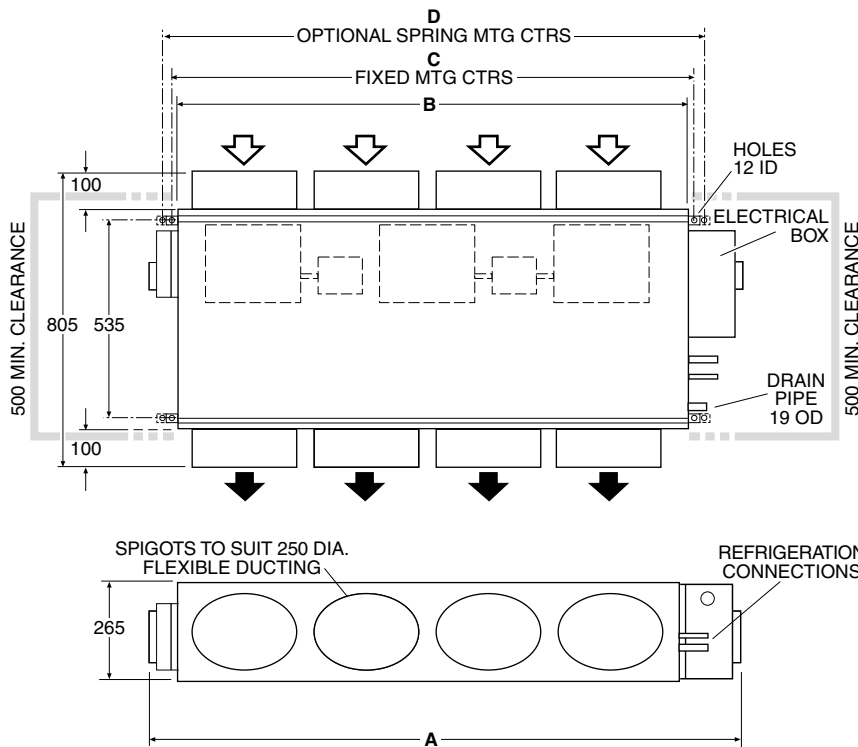
Fig. 1 Dimensions (mm)

MODEL	A	B	C	D	Net Weight	Spigots
ISDL 86KY	1565	1319	1350	1408	63 kg	250 dia. (x8)
ISDL 114KY	1785	1539	1570	1628	67 kg	250 dia. (x8)



Not to Scale

ISDL 86KY shown here



NOTE

The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

GENERAL

These ISDL***KY-D** indoor units are designed to be coupled with the OSA***RK** outdoor units and controlled by the SAT-2 room temperature controller. Units must be installed in accordance with all national and local safety codes.

Combinations

- One ISDL 86KY-D with one OSA 86RKSH
- One ISDL 114KY-D with one OSA 114RKSH
- One ISDL 114KY-D with one OSA 114RKTH

Options

1. Spring Mounting Kit
2. SAT-2 Accessories (refer overleaf)
3. Tandem Kit.

AIR FILTRATION

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 500mm 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 ISDL unit's return air spigot/s.

INSTALLATION

Positioning & Mounting

Provide 500 mm minimum clearance at both ends of the unit.

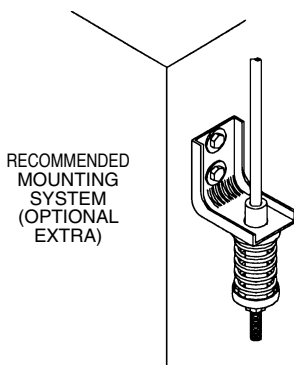
It is recommended that the unit be mounted using the spring mounting system, supplied as an optional extra (Fig.2). This system minimises transfer of vibration into the building structure.

If a more rigid installation can be tolerated, then suspend the unit from four threaded rods (not supplied) and use locknuts (not supplied), as shown in Figure 3. The 'L' shaped brackets, supplied on the unit's corners, must first be unscrewed and reversed to allow rod insertion.

Alternatively mount each unit on vibration isolators on a suitable platform.

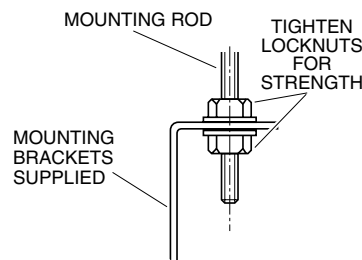
The unit has a built in sloping drain tray so mount it level.

Fig. 2 Spring Mounting



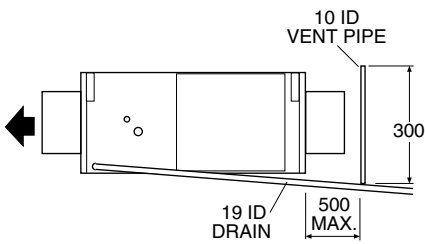
Fits in same position as brackets supplied with unit.

Fig. 3 Solid Mounting



Condensate Drain

The drain should have a slope of at least 1 in 50 and must not be piped to a level above the unit drain tray. Fit a vent pipe within 500 mm of the unit. Check the drain by pouring water into the drain tray and ensuring that it clears.



INDOOR-OUTDOOR UNIT CONNECTIONS

Refer to the relevant OSA Outdoor Unit 'Installation & Maintenance' pamphlet for piping instructions.

For wiring connections, refer to the Outdoor Unit wiring diagram in conjunction with the ISDL wiring diagram in this pamphlet. An interconnecting lead (12.5 m or 25 m, 7 core) is available as an optional extra.

REFRIGERATION PIPING

Pipe Connection Sizes (mm OD)

Liquid: 10 ($\frac{3}{8}$ ") sweat

Suction: 16 ($\frac{5}{8}$ ") sweat

ISDL units are shipped from the factory with a pressurised holding charge of nitrogen. Immediately before removing any brazed pipe connection's seal, reduce the holding charge to atmospheric pressure.

Warning: Failure to do so may cause injury.

Refer to the Outdoor Unit 'Installation & Maintenance' pamphlet for evacuation procedure and piping requirements.

ELECTRICAL WIRING

The electrical supply required (via the Outdoor Unit) is specified on the Outdoor Unit's wiring diagram. Electrical work must be carried out by a qualified electrician in accordance with local supply authority regulations and the wiring diagram.

In a free blow or low resistance application, beware of exceeding the fan motor's full load amp limit (refer Outdoor Unit's wiring diagram).

Note: The SAT-2 Controller automatically switches the indoor fan off during de-ice, therefore no additional wiring is required to achieve this result.

INDOOR FAN SPEED

The fan speed (RPM) range is adjustable using DIP2 Switches 1 to 5 on the EC Motor Controller boards located at both ends of the unit – refer wiring diagram. The default setting is highlighted.

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

If the air returning to the indoor unit is regularly expected to be above 50%RH, then the coil face velocity should be limited to be 2.5 m/s or less (refer Air Handling graph in Technical Data pamphlet).

High humidity levels can occur in tropical or subtropical conditions, and/or when heavily moisture laden fresh air is introduced. Select a fan speed that avoids water carry-over problems.

SAT-2 CONTROLLER

The following components are supplied in a box taped inside one of the supply air spigots:

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. ISDL indoor unit-to-OSA outdoor unit interconnecting lead; 12.5 m or 25 m; 7 core.
5. SAT-2 Zone Control PCB.
6. Zone Control 24V transformer.
7. Additional SAT-2 Wall Control plaque.
8. Infra red remote control.

Installation

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

1. Isolate the ISDL unit from power supply, then remove electrical box cover.
2. Remove the SAT-2 box supplied inside one of the supply air spigots.
3. Remove the Wall Control's interface lead from this box and connect the bare wired end of the interface lead to the terminal block on the SAT-2 Controller board (refer wiring diagram). Trace the remaining length of the lead to the Wall Control's intended location.
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's lugs to the Wall Control board as per the wiring diagram overleaf.
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 ISD 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.

COMMISSIONING

Indoor Unit

1. Check that the wall thermostat is correctly wired and set at the desired temperature.
2. Check that the air filter is clean.
3. Check that the fan runs freely without vibration.
4. Check condensate drain for free drainage.
5. Refer to Outdoor Unit Installation Instructions to complete the start-up and commissioning procedure for the complete air conditioning system.

This procedure will require a demonstration of the Wall Thermostat to the owner/user, after having first thoroughly familiarised yourself with the User's Operating Instructions

MAINTENANCE

Weekly For First Four Weeks

1. Check air filter; vacuum clean as necessary.
2. Check condensate drain for free drainage.

Monthly

Check air filter; vacuum clean as necessary.

Six Monthly

1. Check condensate drain for free drainage.
2. Check heat exchanger coil; vacuum or brush clean as necessary.
3. Check the tightness of the fan.
4. Check that fan motor is free running.
5. Check tightness of electrical connections.
6. Check air supply at diffuser outlets.

WARNING

This unit is designed for use ONLY with the refrigerant HFC-410A (R410A). The use of other refrigerants is NOT authorised or approved by the manufacturer and may cause operational problems such as poor performance and efficiency, loss of capacity, degradation of materials and refrigerant leaks.

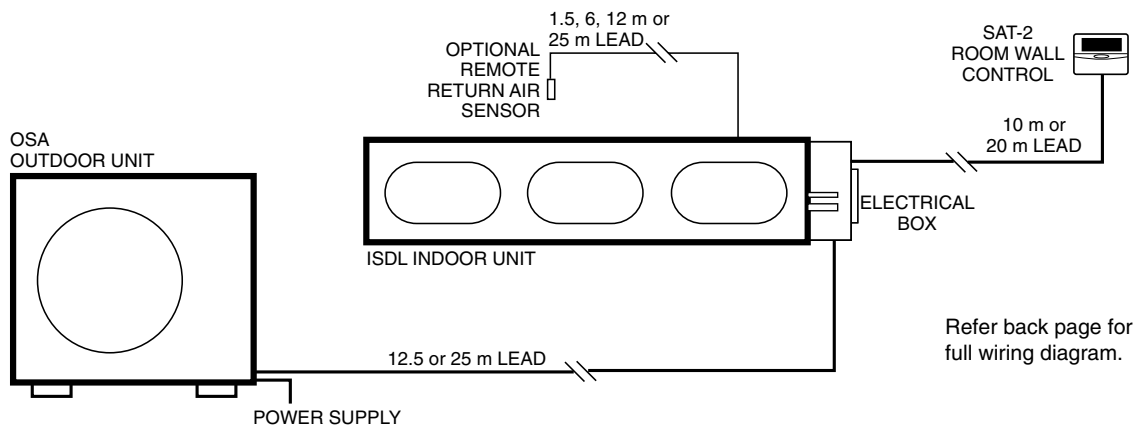
The use of flammable or explosive materials as a refrigerant creates the additional risks of fire and explosion which may result in property damage, personal injury or death.

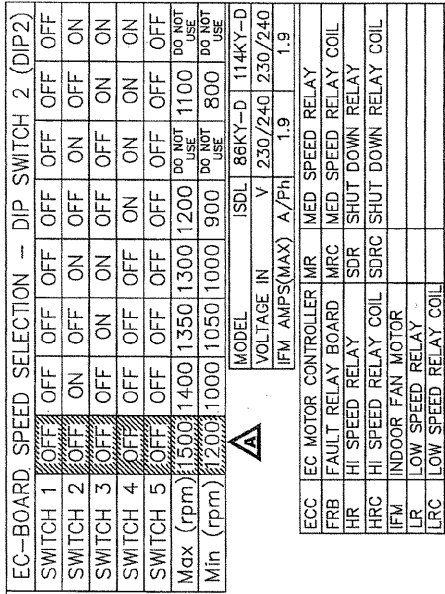
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This pamphlet replaces the previous issue no. 3717 dated 10/10.
Wiring revision A.

Fig. 4 SAT-2 Control Wiring





EC BOARD

STANDARD SETTING	OFF	ON
1 SPEED FAN HI/MED/LOW	OFF	ON
2 NORMAL FORWARD ACTION	OFF	ON
3 POWER LIMIT 300W	OFF	ON
4 LEAVE IN THIS POSITION	OFF	ON

DIP1 SWITCH SETTING

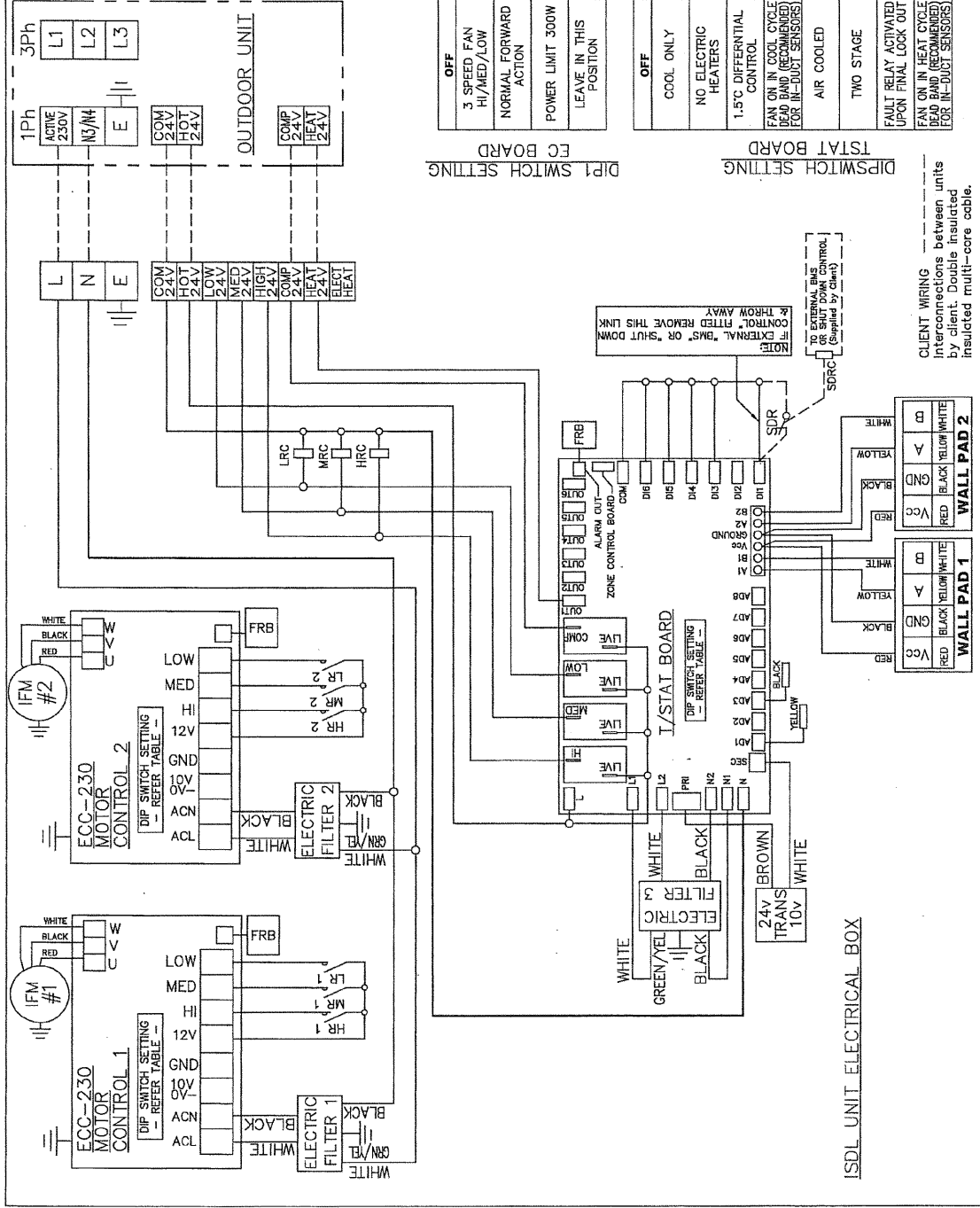
STANDARD SETTING	OFF	ON
1 COOL ONLY	OFF	ON
2 NO ELECTRIC HEATERS	OFF	ON
3 1.5°C DIFFERENTIAL CONTROL	OFF	ON
4 FAN ON IN COOL CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS)	OFF	ON
5 AIR COOLED	OFF	ON
6 TWO STAGE	OFF	ON
7 FAULT RELAY ACTIVATED UPON FINAL LOCK OUT	OFF	ON
8 FAN ON IN HEAT CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS)	OFF	ON

TSTAT BOARD

STANDARD SETTING	OFF	ON
1 HEAT PUMP	OFF	ON
2 ELECTRIC HEATERS FITTED	OFF	ON
3 1.0°C DIFFERENTIAL CONTROL	OFF	ON
4 FAN OFF IN COOL CYCLE DEAD BAND	OFF	ON
5 HYDRONIC	OFF	ON
6 SINGLE STAGE	OFF	ON
7 FAULT RELAY ACTIVATED UPON FINAL LOCK OUT	OFF	ON
8 FAN OFF IN HEAT CYCLE DEAD BAND (RECOMMENDED FOR IN-DUCT SENSORS)	OFF	ON

SAT 2 BOARD DEFINITIONS

OUT1	4-WAY VALVE
OUT2	HEATER
OUT3	SWING/COMP2
OUT4	DRAIN/PUMP
OUT5	POWER IN
OUT6	ZONE/MOTOR
ALARM OUT	FAULT RELAY CONTROL BOARD
RELAY1	ZONE CONTROL BOARD
COM	COMMON
DI6	HP SWITCH
DI5	LP SWITCH
DI4	FLOAT SWITCH
DI3	HYDRONIC PUMP
DI2	NO FUNCTION
DI1	SD
AD8	DISCHARGE 2
AD7	DISCHARGE 1
AD6	RETURN AIR 4
AD5	RETURN AIR 3/INDOOR COIL 2
AD4	RETURN AIR 2/LST
AD3	RETURN AIR 1
AD2	LST 1
AD1	INDOOR COIL 1
SEC	TRANSFORMER SECONDARY
PRI	TRANSFORMER PRIMARY



temperzone

Title ISDL 86 & 114KY-D
WIRING SCHEMATIC (T/STAT SAT-2)

Drawn C.M.W. Date 19-09-11 Drawing No. 291-000-013 Revision A

Scale 1:1

ISSUE	MODIFICATION	DATE	APRVD	DRG SIZE	No.	DESCRIPTION	Mat'l	FINISH	ASSY No.
A	SETTINGS HATCH CHANGED	12-07-12	R.A.S						

Programmed by

PLOTTED 12-07-12

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